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THE

CYCLOPÆDIA;

OR,

Universal Dictionary

OF

ARTS, SCIENCES, AND LITERATURE.

VOL. XXXI.

Printed by A. Strahan,
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THE

CYCLOPÆDIA;

OR,

UNIVERSAL DICTIONARY

OF

Arts, Sciences, and Literature.

BY

ABRAHAM REES, D.D. F.R.S. F.L.S. *S. Amer. Soc.*

WITH THE ASSISTANCE OF

EMINENT PROFESSIONAL GENTLEMEN.

COLLEGE OF PHYSICIANS

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BY THE MOST DISTINGUISHED ARTISTS.

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CYCLOPÆDIA:

OR, A NEW

UNIVERSAL DICTIONARY

OF

ARTS and SCIENCES.

S

S, A conſonant, and the eighteenth letter of the alphabet, the ſound of which is formed by driving the breath through a narrow paſſage between the palate and the tongue elevated near it, together with a motion of the lower jaw and teeth towards the upper; the lips being a little way open, with ſuch a configuration of every part of the mouth and larynx, as renders the voice ſomewhat hiſſing.

S is, therefore, accounted one of the three hiſſing conſonants; the other two being *z* and *j*. It is alſo held a ſemi-vowel, as forming a kind of imperfect ſound, without the aſſiſtance of any of the vowels: and one of thoſe ſemi-vowels denominated aſpirate. See SEMI-VOWEL.

S has two different ſounds, *viz.* a ſoft and flat ſound, like *z*, as *diſmal*, and a ſharp hiſſing ſound, as *ſiſter*.

It is the peculiar quality of *s*, that it may be ſounded before all conſonants, except *x* and *z*, in which *s* is compriſed, *x* being only *ks*, and *z* a hard or groſs *s*. This *s* is, therefore, termed by grammarians *ſuæ poteſtatis litera*. In the beginning of words it has invariably its natural and genuine ſharp ſound; in the middle it is ſometimes uttered with a ſtronger appulſe of the tongue to the palate, like *z*, as *roſe*, *buſy*, &c. and ſometimes it keeps its natural ſound, as *looſe*, *deſignation*, &c. In the end of monoſyllables, it is ſometimes ſharp, as *this* and *alſo*; and ſometimes ſoft, like *z*, as *as*, and generally in verbs where *es* ſtands for *eth*, as *gives*. A ſingle *s* ſeldom ends any word, except the third perſon of verbs, as *loves*, the plural of nouns, as *trees*, the pronouns *this*, *his*, *ours*, *yours*, *us*, the adverb *thus*, and words derived from the Latin, as *rebus:* the cloſe being always either in *ſe*, as *houſe*, or *ſs*, as *graſs*. It ſounds like *z* before *ion*, if a vowel goes before, as *intruſion;* and like *s* ſharp, if it follows a conſonant, as *converſion*. It ſounds like *z* before *e* mute, as *refuſe*, and before *y* final, as *roſy*. S is mute in *iſle*, *iſland*, &c. Johnſon. Murray.

Some of the ancients avoided all uſe of the *s* very ſtudiouſly; particularly Pindar, who has whole poems without once mentioning it. And hence alſo in Plautus, and ſome others of the Latin poets, we find it cut abruptly off, as in *dignu'*, *omnibu'*, &c. Others, on the contrary, affected the uſe of it every where, inſerting it where it was not wanted; as *Casmenæ* for *Camenæ*, *dusmoſæ* for *dumoſæ*, *cæsna* for *cæna*, &c.

Of all letters, the *s* is neareſt akin to the *r*: whence it was frequently changed, on account of its diſagreeable ſound, into *r*. Thus the *Valerii*, *Furii*, &c. were at firſt called *Valeſii*, *Fuſii*, &c.; and what we now call *ara*, *arena*, *carmen*, *feriæ*, *lares*, &c. were anciently written *asa*, *asena*, *casmen*, *ſesiæ*, *lases*, &c. Add to this, that the Latin nouns now terminated in *or*, as *arbor*, *labor*, &c. all anciently ended in *s*; as *arbos*, *labos*, &c.

In the inflections of nouns, *s* is variouſly changed; ſometimes into *r*, as *flos*, *floris*; ſometimes into *n*, as *ſanguis*, *ſanguinis*; ſometimes into *d*, as *pes*, *pedis*; ſometimes into *t*, as *nepos*, *nepotis*. On the contrary, in verbs, it is frequently put for other letters; for *b*, as in *jubeo*, *juſſi*; for *c*, as in *parco*, *parsi*; for *d*, as in *ludo*, *lusi*; for *g*, as in *ſpargo*, *ſparsi*, &c.

The Latins alſo frequently changed the Greek *s* into *l*, as Αννιϐας, *Annibal*; into *d*, as μεσον, *medium*, &c. The double *s* was frequently changed into *x*, as ϖισσα, *pix;* and ſometimes even the ſingle one, as Αιας, *Ajax*.

The old and the new orthography of the French differ chiefly in the uſe of the *s*; the latter omitting it in writing, where it is not heard in the pronunciation, and the former retaining it: thus the followers of the one, particularly the

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Academy in their Dictionary, write *tempeſte, huiſtre, fluſte;* thoſe of the other, *tempête, huitre, flute,* &c.

S was a numerical letter among the ancients, ſignifying ſeven: according to the verſe,

"S vera ſeptenos numeratos ſignificabit."

Among the Greeks, σ′ ſignified 200, and ͵σ denoted 200,000; the *ſigma* joined to *tau*, i. e. ϛ, denoted 6. The *ſamech* of the Hebrew ס denoted 50, and with two points above ס̈, it ſignified 50,000.

In abbreviations, S. ſtands for *ſocietas*, or *ſocius*; as R.S.S. for *Regiæ Societatis Socius*, i. e. *fellow of the Royal Society*. In medicinal preſcriptions, S.A. ſignifies *ſecundum artem*, i. e. *according to the rules of art*; and in the notes of the ancients, S. ſtands for *ſextus, ſervius,* or *ſanctus*; S.S. *ſanctiſſimus*; S.P. for *ſpurius*; S.C. for *ſenatus conſultum*; S.D. for *ſalutem dicit*; S.P.D. for *ſalutem plurimam dicit*; S.P.Q.R. for *ſenatus populuſque Romanus*; S.S.S. for *ſtratum ſuper ſtratum*, i. e. *one layer above another, alternately*; S.V.B.E.E.Q.V. for *ſi vales bene eſt ego quoque valeo*, a form uſed in Cicero's time, in the beginning of letters. Upon the French coins, S diſtinguiſhed thoſe that were ſtruck at Rheims.

S, in *Books of Navigation*, &c. ſignifies ſouth; S.E. ſouth-eaſt; S.W. ſouth-weſt; S.S.E. ſouth-ſouth-eaſt, &c. See Compass.

S, in *Muſic*, when alone in a concertino, or principal part in a concerto, or chorus, implies *ſolo*, alone; as T, its alternative, and the initial of *tutti*, does the whole band, or chorus. See Solo and Tutti.

SA de Miranda, Francis, in *Biography*, a Portugueſe writer and chevalier of the order of Chriſt, was born at Coimbra in 1495, and died in 1558. He was author of a quarto volume, conſiſting of ſatires, comedies, and paſtorals, which was printed at Liſbon in 1614.

Sa, or Saa, Emanuel, a learned Portugueſe Jeſuit in the 17th century, was born at Villa de Conde, in the province of Entre Minho e Duero, in the year 1530. Having ſpent ſome time at the univerſity of Coimbra, he became a member of the newly formed ſociety of Jeſus, in which he diſtinguiſhed himſelf by his diligence, and great proficiency in all the branches of learning. He was ſelected, when very young, to teach philoſophy in that univerſity, and ſoon afterwards was removed to fill the philoſophical chair at the univerſity of Gandia, in Valentia. While in this ſituation he attended upon Francis Borgia, duke of Gandia, in the capacity of private tutor. In the year 1557 he was called to Rome, and appointed profeſſor of divinity in the ſeminary belonging to his order. Here he commenced preacher, and for many years attracted crowded audiences by his pulpit oratory. He was employed by pope Pius V. in conjunction with Peter Parra, another Jeſuit, in ſuperintending a new edition of the bible. He was afterwards ſent to regulate the ſeminaries at Loretto, Milan, Genoa, and other principal cities of Italy. By his exertions his health began to decline; he retired to Arona, in the dioceſe of Milan, where he died in 1596, in the ſixty-ſixth year of his age. He is known in the literary world by the following works: "Scholia in Quatuor Evangelia," 4to. conſiſting of ſhort, but very learned and ingenious, notes on the four goſpels: "Notationes in totam Sacram Scripturam, quibus tum omnes ferè Loci difficiles, tum Variæ ex Hebræo, Chaldæo Lectiones explicantur," 4to. publiſhed two years after his death: "Aphoriſmi Confeſſariorum ex Doctorum Sententiis collecti," 12mo. which is ſaid to have occupied leſs or more of his time during forty years of his life. It has been frequently reprinted at Venice, Cologne, Antwerp, Paris, Lyons, &c.

Sa, in *Geography*, a town of Egypt, on the canal of Balkin, about nine miles from the Nile, ſuppoſed to be the ancient Sais, where were the aſylum and tomb of Oſiris; 18 miles S.S.E. of Faoué.

SAABOR, a town of Sileſia, in the principality of Glogau; 18 miles N.N.W. of Gros Glogau.

SAAD, a town of Grand Bucharia; 20 miles N.E. of Samarcand.

SAADE, an independent lordſhip or principality of Arabia, in the territory of *Saham* or *Sahan* (which ſee), and ſtate of Yemen. This belongs to a prince, who takes alſo the title of Imam; but his principality is ſo ſmall, that he can hardly defend himſelf againſt the ſchiecks of the neighbouring mountains. His capital, in which he reſides, has a cuſtom-houſe, which brings him a conſiderable revenue. All goods from the dominions of the Imam muſt paſs this way to Nedsjeran, Kachtan, or Mecca, and high duties are exacted. In the vicinity of this city is a high hill, famous as the poſt upon which a prince of this ſtate ſuſtained a ſeven years' ſiege by the Turks; 400 miles S.E. of Mecca. Niebuhr.

SAADIAS-GAON, or, as he is frequently denominated, Saadias the Excellent, in *Biography*, a learned rabbi, who flouriſhed in the 10th century, was a native of Pithom, or Al Fiumi, in Egypt, where he was born about the year 892. Having acquired a high reputation for learning and abilities, he was, in the year 927, ſent for by David, the ſon of Zachai, the prince of the captivity, to preſide over the academical inſtitution at Sora, near Babylon. One of the firſt objects of his care after entering upon his office was to explode, as far as he was able, the doctrine of the tranſmigration of ſouls, which was very prevalent, not only among the Perſians and Arabs, but even among the Jews. He had made conſiderable progreſs in it, when he was ſent for by the prince of the captivity to ſubſcribe to a new regulation, which appeared to him to be repugnant to the Jewiſh laws, and for that reaſon he firmly refuſed his ſignature. Hence a breach aroſe between David and Saadias, and the academy ſoon became divided into two parties, which ended in the depoſition of David, but his diſgrace was of ſhort duration, and on his reſtoration, Saadias was obliged to ſeek his ſafety by flight. He remained in concealment ſeven years, during which he compoſed the greateſt part of the books which were publiſhed in his name. He afterwards found means to be reconciled to David, and was reſtored to his profeſſorſhip, in which he continued with great reputation till his death, in 942, at the age of 50. His principal works are, "Sepher Heamunah," or a treatiſe concerning the Jewiſh articles of faith, in ten chapters, which was tranſlated from the original Arabic into Hebrew, and printed at Conſtantinople in 1562; and ſince that it has been printed at Verona, Amſterdam, and other places on the continent: "A Commentary on the Book Jezira," printed, with other Commentaries on that book, at Mantua, in 1592: "An Arabic Tranſlation of the whole Old Teſtament," of which the Pentateuch is ſtill extant in Jay's and Walton's Polyglotts, accompanied with the Latin verſion of Gabriel Sionita: "A Commentary on the Song of Songs," in Hebrew, printed at Prague in 1609, 4to.: "A Commentary on Daniel," likewiſe in Hebrew, inſerted in the great rabbinical bibles of Venice and Baſil: "A Commentary on Job," in Arabic, the MS. of which is in the Bodleian library, at Oxford: he was author alſo of ſome pieces on grammar, &c.

SAADIS, a ſect of enthuſiaſts or impoſtors in Egypt, reſembling the Pſylli of Cyrenaica, who were perſuaded that they poſſeſſed the power of ſetting ſerpents at defiance, of charming them, of making theſe reptiles follow them at their call, and of curing their bites. (See Psylli.) The Saadis derive their name from that of their founder, who was a ſaint highly venerated among the Mahometans of Egypt. This ſaint, when young, having convinced his uncle, who was a great man in Syria, of his ingenuity, by binding a faggot of branches of trees, which he was ſent by his uncle to collect in the deſart, with a number of living ſerpents knotted together, commenced his travels through the country, practiſing the art of charming ſerpents by his wonderful and ſupernatural ſkill, and gathering together a number of diſciples, to whom he communicated his art. The tomb of this ſaint is near Damaſcus; and it is filled with ſerpents and other venomous animals, among which a perſon may lie down and ſleep, without ſuffering the ſlighteſt injury. Such is the ſuperſtitious origin of a very numerous ſect in Egypt, each individual of which inherits the ſkill of its founder. Every year they celebrate his feſtival in a manner analogous to the inſtitution. They march in proceſſion through the ſtreets, each holding in his hand a living ſerpent, which he bites, gnaws, and ſwallows piece-meal, making, at the ſame time, frightful grimaces and contortions. Sonnini informs us, that he had an opportunity of obſerving the practices of a member of this ſect. A prieſt of this profeſſion carried in his boſom a large ſerpent, which he was continually handling, and after having recited a prayer, delivered it to the Saadi who accompanied him. The teeth of the reptile had been drawn, but it was very lively, and of a duſky green and copper colour. The Saadi ſeized the ſerpent, which entwined itſelf round his naked arm. Upon this he began to be agitated; his countenance changed; his eyes rolled; he uttered terrible cries; bit the animal in the head, and tore off a piece, which he chewed and ſwallowed. At that moment his agitation increaſed; his howlings were redoubled; his limbs writhed; his aſpect bore the marks of madneſs; and his mouth, diſtended by horrid grimaces, was covered with foam. From time to time he devoured freſh pieces of the reptile. It was in vain that three men exerted themſelves to hold him; he dragged them round the room, throwing his arms with violence on all ſides, and ſtriking every thing within his reach. At length the prieſt took the ſerpent from him; but his fury and convulſions were not at firſt appeaſed; he bit his hands, and his paſſion continued. The prieſt claſped him in his arms, put his hands gently on his back, lifted him from the ground, and recited ſome prayers. His agitation gradually ſubſided, and he became completely exhauſted, in which ſtate he continued for a few moments. The Turks, who were preſent, believed that this religious frenzy was real.

Dr. Shaw (ſee his "Travels"), and ſeveral other authors, apprehend that theſe ſerpent-eaters entirely ſubſiſted upon theſe reptiles; and from this traveller we learn, that at Cairo and in its environs there are more than 4000 perſons who live on nothing but ſerpents. But Sonnini ſays this is a miſtake; for if in their ceremonies they gnaw a few that are raw and alive, they do not uſe them as an article of food. In Egypt theſe men are very much reſpected; but among the Turks of the other parts of the Ottoman empire, they are only objects of ridicule and laughter. In order to have ſerpents ready on every occaſion, they keep them in their houſes, having uſed the previous precaution of extracting their teeth. If any perſon be bitten by a ſerpent, he runs directly to a Saadi, who mutters a few words over the wound, ſcarifies it with a razor, and after having filled his mouth with lemon-juice, ſucks the blood from it repeatedly. Theſe men alſo cure the "Serpent's breath," an appellation given by them to inflammatory puſtules, which ſometimes break out on thoſe who ſleep in the open air, with any part of the body uncovered, and which, as they pretend, are cauſed by the ſerpent's breath. The remedy they employ is the oil of ſeſamum, mixed with ceruſs, or white lead. With this liniment they rub the puſtules, never failing, at the ſame time, to mutter a few words, without which every remedy would be altogether ineffectual. "Such," ſays Sonnini, (Travels in Egypt) "is the lot of mankind, that there is no nation in the univerſe, of whoſe hiſtory many pages are not appropriated to ſuperſtition!"

SAAGROW, in *Geography*, a town of Bengal; 58 miles N.W. of Midnapour.

SAAL, a town of the duchy of Carinthia; 3 miles N. of Clagenfurt.—Alſo, a river which riſes in the biſhopric of Fulda, and runs into the Maine, near Gemunden, in the duchy of Wurzburg.—Alſo, a river which riſes in the principality of Bayreuth, and runs into the Elbe, three miles S. of Barby.—Alſo, a river, called likewiſe "Sala," which runs into the Salzach, two miles below Salzburg.—Alſo, a department of the new kingdom of Weſtphalia, compriſing the principalities of Halberſtadt, Quedlinburg, &c. The population is eſtimated at 254,000. The capital is Halberſtadt.

SAALBURG, a town of Saxony, in the county of Reuſſen, on the Saal; 20 miles S.W. of Gera. N. lat. 50° 27′. E. long. 11° 50′.

SAALFELD, a town of Saxony, in the principality of Altenburg, on the Saal; in which is a ſuperintendancy, with three others belonging to it, with three churches, one of which only is uſed. It has alſo a good grammar-ſchool, together with ſome manufactures of cloth, gold and ſilk ſtuffs, and alſo a ſmelting and vitriol-houſe. It was likewiſe the mint-town for the circle of Upper Saxony. Near the town, on an eminence, is the once celebrated and princely Benedictine abbey, called "Saalfeld Abbey;" 46 miles S.W. of Altenburg. N. lat. 50° 37′. E. long. 11° 28′.—Alſo, a town of Pruſſia, in the province of Oberland; 64 miles S.S.W. of Konigſberg. N. lat. 53° 48′. E. long. 19° 29′.

SAALHORN, a town of the duchy of Magdeburg, at the conflux of the Saal and the Elbe; 22 miles S.S.E. of Magdeburg.

SAALLES, a town of France, in the department of the Voſges, and chief place of a canton, in the diſtrict of St. Dié; 10 miles E.N.E. of St. Dié. The place contains 915, and the canton 8614 inhabitants, on a territory of 157½ kiliometres, in 13 communes.

SAAPOUR, a town of Bengal, 25 miles W. of Dacca.—Alſo, a town of Hindooſtan, in Bahar; 21 miles W. of Hajypour.

SAAR, a town of Bohemia, in the circle of Saatz; 12 miles S. of Slakenwert.

SAAR. See SARRE.

SAAR, or *Zdar*, a town of Moravia, in the circle of Brunn; 50 miles W. of Olmutz. N. lat. 49° 33′. E. long. 15° 45′.

SAARBRUCK. See SARREBRUCK.

SAARIJARVI, a town of Sweden, in the government of Waſa; 98 miles E.S.E. of Waſa.

SAARMUND, a town of the Middle Mark of Brandenburg; 8 miles S. of Potzdam. N. lat. 52° 18′. E. long. 13° 5′.

SAAR-UNION, a town of France, in the department of the Lower Rhine, and chief place of a canton, in the diſtrict of Saverne. The place contains 2791, and the canton 12,195 inhabitants, on a territory of 177½ kiliometres, in 19 communes.

SAAS, John, in *Biography*, an eccleſiaſtic, was born in the year 1703, and died in 1774. He was an active and uſeful member of the academy of Ruen, and publiſhed an account of the manuſcripts found in the cathedral of that city; he was author of "An Abridgment of the Hiſtorical Dictionary," in 4 vols.; "Criticiſms on the Supplement to Moreri," and ſome religious pieces.

SAASA, in *Geography*, a town of Syria, in the country beyond the river Jordan; where, as ſome have ſuppoſed, Nimrod was buried; 40 miles N.W. of Sarchad.

SAATSI, a ſmall circar of Bengal, on the W. ſide of the Hoogly, bounded on the E. by Kiſhenagur, and elſewhere by Burdwan.

SAATZ, or ZATEC, a town of Bohemia, in a circle of the ſame name, ſituated on the Eger, or Ohrze, which divides it from E. to W. into two equal parts. The circle is alſo called "Lucſko." This country produces the beſt hops of any in Bohemia, and it is alſo very fertile in corn. The territory of Elnbogen, which contains good mine-works, and warm-baths, was annexed, in the year 1714, to the circle of Saatz; and in both theſe united countries there are computed, beſides the imperial ſeignory of Preſnitz, 189 other ſeignories and eſtates; 35 miles W.N.W. of Prague. N. lat. 50° 18′. E. long. 13° 37′.

SAAVEDRA, FAJARDO DIEGO, in *Biography*, a Spaniſh writer and ſtateſman, was born of a noble family in the kingdom of Murcia, and after being ambaſſador in Switzerland, was appointed a member of the ſupreme council of India. He died in 1648. As an author, his chief works are, "The Idea of a Politic Prince;" "The Gothic Crown;" and "The Literary Republic." This laſt is ſaid to be a curious and well-written piece.

SAAVEDRA. See CERVANTES.

SAAXMAKI, in *Geography*, a town of Sweden, in Tavaſtland; 17 miles N.W. of Tavaſthus.

SABA, in *Ancient Geography*, a port of Ethiopia, on the Arabian gulf.

SABA, in *Geography*, one of the Caribbee iſlands in the Weſt Indies, belonging to the Dutch; about 12 miles in circumference, and extended in a pleaſant valley, which produces ſubſiſtence for the inhabitants, and materials for ſeveral manufactures, but for want of a port, its commerce is very inconſiderable. The acceſs to it is by a road cut in a rock, which admits only one man to aſcend at a time, and ſtored with ſtones, with which the inhabitants repelled the French buccaneers, by whom they were attacked in 1688. This iſland was captured by the Engliſh in 1781, and again in 1801. It yields ſome indigo and cotton; but its chief manufacture is ſhoes. N. lat. 17° 40′. W. long. 63° 12′.

SABA. See AZAB.

We have already hinted under the article to which we have referred, that this is ſuppoſed to have been the country from which the queen of Sheba made a journey to Jeruſalem, in order to have an interview with Solomon, whoſe fame for wiſdom had excited her curioſity to be perſonally acquainted with him, and to profit by the wiſdom for which he was diſtinguiſhed. We ſhall here add ſome further particulars relating to this ſubject, with which we are furniſhed by Mr. Bruce's Travels. This writer informs us, that the deſcendants of Cuſh (ſee CUSHITES) extended themſelves along the mountains that run parallel to the Arabian gulf, towards the country called Saba, or Azabo, both which ſignify *ſouth*, not (he ſays) becauſe Saba was ſouth of Jeruſalem, but becauſe it was on the ſouth coaſt of the Arabian gulf, and from Arabia and Egypt was the firſt land to the ſouthward which bounded the African continent, then richer, more important, and better known than the reſt of the world. By that acquiſition they enjoyed all the perfumes and aromatics in the Eaſt, myrrh and frankincenſe, and caſſia; all which grow ſpontaneouſly in that ſtrip of ground, from the bay of Bilur, W. of Azab, to cape Gardefan, and then ſouthward up in the Indian ocean, to near the coaſt of Melinda, where there is an inferior kind of cinnamon. It is no wonder, ſays our author, that the valuable tranſactions which the Tyrians and Jews ~~had~~ with their correſpondents the Cuſhites and Shepherds on the coaſt of Africa, ſhould familiarize them with one another. Accordingly the queen of Azab, the ſovereign of that country, became deſirous of perſonally witneſſing the application of thoſe immenſe treaſures that had been exported from her country for a ſeries of years, and the prince who ſo magnificently employed them. There can, he ſays, be no doubt of this expedition, as Pagan, Arab, Moor, Abyſſinian, and the inhabitants of all the ſurrounding countries, vouch the truth of it in terms very much alike thoſe of Scripture. Many have thought this queen was an Arab. But Saba was a ſeparate ſtate, and the Sabeans a diſtinct people from the Ethiopians and the Arabs, and have continued to be diſtinct till a very late period. Hiſtory informs us, that it was a cuſtom among the Sabeans to have women for their ſovereigns in preference to men; and this cuſtom ſtill ſubſiſts among their deſcendants.

> "——— Medis levibuſque Sabæis,
> Imperat hos ſexus Reginarumque ſubarmis,
> Barbariæ, pars magna jacet." Claudian.

By "Barbariæ," it is ſaid, is meant the country between the tropic and mountains of Abyſſinia, the country of ſhepherds, from *berber*, ſhepherd. See SHEPHERD.

The name of this queen, as the Arabs ſay, was "Belkis;" the Abyſſinians call her "Maqueda." Our Saviour calls her "queen of the ſouth." (Matt. xii. 42. Luke, xi. 31.) It is a ſtrong objection to her being an Arab, that the Sabean Arabs, or Homerites, the people that lived oppoſite to Azab, on the Arabian ſhore, had kings inſtead of queens. Beſides, the kings of the Homerites were never ſeen abroad, but were ſtoned to death, if they appeared in public: ſubjects of this deſcription, therefore, would never ſuffer their queen to go to Jeruſalem, even ſuppoſing they had a queen, which was not the caſe. It is not certain whether ſhe was a Jeweſs or a Pagan: Sabaiſm was the religion of all the Eaſt. But conſidering the multitude of Jews then trading from Jeruſalem, and the long time the intercourſe continued, it is not improbable ſhe was a Jeweſs. (See 1 Kings, x. 1. 2 Chron. ix. 1.) Our Saviour ſpeaks of her with praiſe, exhibiting her conduct as an example to the Jews. (Matt. xii. 43. Luke, xi. 31.) And in her thankſgiving before Solomon, ſhe alludes to God's bleſſing on the ſeed of Iſrael for ever, (1 Kings, x. 9. 2 Chron. ix. 8.) which is by no means the language of a Pagan, but of a perſon ſkilled in the ancient hiſtory of the Jews. The Abyſſinian annals intimate that ſhe was converted to Judaiſm at Jeruſalem, and bore Solomon a ſon, who was called Menilek, and who was their firſt king. The Abyſſinians, both Jews and Chriſtians, believe the xlvth pſalm to be a prophecy of this queen's voyage to Jeruſalem; that ſhe was attended by a daughter of Hiram's from Tyre to Jeruſalem; and that the laſt part contains a declaration of her having a ſon by Solomon, who was to be king over a nation of Gentiles.

To Saba, or Azab, then, ſhe returned with her ſon Menilek, whom, after keeping him ſome years, ſhe ſent back to his father to be inſtructed. Solomon did not neglect his charge, and he was anointed and crowned king of Ethiopia, in the temple of Jeruſalem, and at his inauguration took the name of David. After this he returned to

Azab, and brought with him a colony of Jews, among whom were many doctors of the law of Moſes, particularly one of each tribe, to make judges in his kingdom, from whom the preſent umbares, (or ſupreme judges, three of whom always attend the king,) are ſaid and believed to be deſcended. With theſe alſo came Azarias, the ſon of Zadok the prieſt, and brought with him a Hebrew tranſcript of the law, which was delivered into his cuſtody, as he bore the title of nebrit, or high prieſt; and this charge, though the book itſelf was burnt with the church of Axum in the Mooriſh war of Adel, is ſtill continued, as it is ſaid, in the lineage of Azarias, who are nebrits, or keepers of the church of Axum, at this day. All Abyſſinia was thereupon converted, and the government of the church and ſtate modelled according to what was then in uſe at Jeruſalem.

By the laſt act of the queen of Saba's reign, ſhe ſettled the mode of ſucceſſion in her country for the future. Firſt, ſhe enacted, that the crown ſhould be hereditary in the family of Solomon for ever. Secondly, that, after her, no woman ſhould be capable of wearing that crown, or being queen, but that it ſhould deſcend to the heir male, however diſtant, in excluſion of all heirs female whatever, however near; and that theſe two articles ſhould be conſidered as the fundamental laws of the kingdom, never to be altered or aboliſhed. And, laſtly, that the heirs male of the royal houſe ſhould always be ſent priſoners to a high mountain, where they were to continue till their death, or till the ſucceſſion ſhould open to them.

The queen of Saba, having made theſe laws irrevocable to all her poſterity, died, after a long reign of forty years, in 986 before Chriſt, placing her ſon Menilek upon the throne, whoſe poſterity, the annals of Abyſſinia would teach us to believe, have ever ſince reigned. So far we muſt indeed bear witneſs to them, that this is no new doctrine, but has been ſtedfaſtly and uniformly maintained from their earlieſt account of time; firſt, when Jews, then in later days, after they had embraced Chriſtianity. We may further add, that the teſtimony of all the neighbouring nations is with them upon this ſubject, whether they be friends or enemies. They only differ in name of the queen, or in giving her two names.

All the inhabitants of Arabia Felix, eſpecially thoſe of the coaſt oppoſite to Saba, were her ſubjects; firſt, Sabean Pagans, like herſelf, then converted (as the tradition ſays) to Judaiſm, during the time of the building of the temple, and continuing Jews from that time to the year 622 after Chriſt, when they became Mahometans.

Menilek, it is ſaid, ſucceeded to the throne in the 986th year B. C., and the ſucceſſion of 22 kings terminated with Bazen.

It happens ſomewhat unfortunately, that the years laid down in the book of Axum (ſee Axum) do not preciſely agree with our author's account; yet, he ſays, they are ſo near, that we cannot doubt that the revolt of the ten tribes, and deſtruction of Rehoboam's fleet which followed, occaſioned the removal of Menilek's capital to Tigré. The temple which the queen of Saba (Sheba) had ſeen built, and ſo richly ornamented, was plundered the 5th year of Rehoboam, by Seſac, which is thirteen years before Menilek died; ſo that this occurrence could not have diſguſted him with the trade of his ancient habitation at Saba. But whatever was the cauſe, Menilek did remove his court from Azab to a place near Axum, at this day called "Adega Daid," the houſe of David; and at no great diſtance is another, called "Azabo," from his ancient metropolis, where there are ancient remains of building of ſtone and lime; and this affords a certain proof that Axum was then fallen, elſe he would naturally have gone thither immediately upon forſaking his mother's capital of Azab.

Among thoſe whoſe anceſtors are ſuppoſed to have come to Abyſſinia originally from Paleſtine are the "Falaſha." The account which they give of themſelves, which is ſupported only by tradition among them, is, that they came with Menilek from Jeruſalem, ſo that they agree perfectly with the Abyſſinians in the ſtory of the queen of Saba, who, they ſay, was a Jeweſs, and her nation Jews before the time of Solomon; that ſhe lived at Saba, or Azaba, the myrrh and frankincenſe country, upon the Arabian gulf. They ſay further, that ſhe went to Jeruſalem, under protection of Hiram, king of Tyre, whoſe daughter is ſaid, in the xlvth pſalm, to have attended her thither; that ſhe went not in ſhips, nor through Arabia, for fear of the Iſhmaelites, but from Azab round by Maſuah and Suakem, and was eſcorted by the Shepherds, her own ſubjects, to Jeruſalem, and back again, making uſe of her own country vehicle, the camel, and that her's was a white one, of prodigious ſize and exquiſite beauty.

They agree alſo, in every particular, with the Abyſſinians, about the remaining part of the ſtory, the birth and inauguration of Menilek, who was their firſt king; alſo the coming of Azarias, and twelve elders from the twelve tribes, and other doctors of the law, whoſe poſterity they deny to have ever apoſtatized to Chriſtianity, as the Abyſſinians pretend they did at the converſion. They ſay that when the trade of the Red ſea fell into the hands of ſtrangers, and all communication was ſhut up between them and Jeruſalem, the cities were abandoned, and the inhabitants relinquiſhed the coaſt; that they were the inhabitants of theſe cities, by trade moſtly brick and tile-makers, potters, thatchers of houſes, and ſuch-like mechanics, employed in them; and finding the low country of Dembea afforded materials for exerciſing theſe trades, they carried the article of pottery in that province to a degree of perfection ſcarcely to be imagined.

Being very induſtrious, theſe people multiplied exceedingly, and were very powerful at the time of the converſion to Chriſtianity, or, as they term it, the apoſtacy under Abreha and Atzbeha. At this time they declared a prince of the tribe of Judah, and of the race of Solomon and Menilek, to be their ſovereign. The name of this prince was Phineas, who refuſed to abandon the religion of his forefathers, and from him their ſovereigns are lineally deſcended; ſo they have ſtill a prince of the houſe of Judah, although the Abyſſinians, by way of reproach, have called this family Bet Iſrael, intimating that they were rebels, and revolted from the family of Solomon and tribe of Judah, and there is little doubt but that ſome of the ſucceſſors of Azarias adhered to their ancient faith alſo. Although there was no bloodſhed upon difference of religion, yet, each having a diſtinct king with the ſame pretenſions, many battles were fought from motives of ambition, and rivalſhip of ſovereign power.

About the year 960, an attempt was made by this family to mount the throne of Abyſſinia, when the princes of the houſe of Solomon were nearly extirpated upon the rock Damo. This, it is probable, produced more animoſity and bloodſhed. At laſt the power of the Falaſha was ſo much weakened, that they were obliged to leave the flat country of Dembea, having no cavalry to maintain themſelves there, and to take poſſeſſion of the rugged, and almoſt inacceſſible rocks, in that high ridge called the Mountains of Samen. One of theſe, which nature ſeems to have formed for a fortreſs, they choſe for their metropolis, and it was ever after called the Jews' Rock.

A great overthrow, which they received in the year 1600, brought them to the very brink of ruin. In that battle Gideon and Judith, their king and queen, were ſlain. They have ſince adopted a more peaceable and dutiful behaviour, pay taxes, and are ſuffered to enjoy their own government. Their king and queen's name was again Gideon and Judith, when Mr. Bruce was in Abyſſinia, and theſe names ſeem to be preferred for thoſe of the royal family. At that time they were ſuppoſed to amount to 100,000 effective men. Something like this, the ſober and moſt knowing Abyſſinians are obliged to allow to be truth; but the circumſtances of the converſion from Judaiſm are probably not all before us.

The only copy of the Old Teſtament which they have, is in Geez, the ſame made uſe of by the Abyſſinian Chriſtians, who are the only ſcribes, and ſell theſe copies to the Jews; and it is very ſingular, that no controverſy or diſpute about the text has ever yet ariſen between the profeſſors of the two religions. They have no keri-ketib, or various readings; they never heard of talmud, targum, or cabala; neither have they any *fringes or ribband* upon their *garments*, nor is there, as far as Mr. Bruce could learn, one ſcribe among them.

Theſe people deny the ſceptre has ever departed from Judah, as they have a prince of that houſe reigning, and underſtand the prophecy of the gathering of the Gentiles at the coming of Shiloh, is to be fulfilled on the appearance of the Meſſiah, who is not yet come, when all the inhabitants of the world are to be Jews. Bruce's Travels, vol. i.

SABA, *Little*, one of the ſmaller Virgin iſlands, in the Weſt Indies; belonging to the Danes.

SABACZ. See SABATZ.

SABADELL, a town of Spain, in Catalonia; 10 miles N. of Barcelona.

SABADIBÆ, (*Pulo-way*,) in *Ancient Geography*, a name given by Ptolemy to three ſmall iſlands of India, near the N.W. point of the iſland Iabadia (*Sumatra*). The inhabitants are ſaid to have been Anthropophagi.

SABÆ, a town of Africa, in Libya Interior, towards the ſource of the Cinyphus. Ptolemy.

SABÆANS, SABÆI, or *Sabians*, the adherents to Sabaiſm; a ſect of idolaters, much more ancient than Moſes, and the Jewiſh law.

Hottinger ſets aſide the common derivation of Sabæan from צבא, *militia, hoſt;* and will not have it the name of a ſect of religion, but of a people in Arabia Felix, the deſcendants of Saba, grandſon of Cham. But the critics very generally conſpire againſt this opinion.

The word is ſometimes alſo written Sabians, Sabaites, Zabæans, Zabians, Zabaites, Tſabæans, Tſabians, and Tſabaiſts.

The Sabæans were very numerous throughout the Eaſt; in later times they have mixed ſomething of Chriſtianity with their ſuperſtition. They ſet a great value on the baptiſm of St. John; whence they have been alſo denominated "Chriſtians of St. John." See HEMEROBAPTISTS.

Some, indeed, doubt whether the Sabæans be the ſame with the Chriſtians of St. John; but father Angelo de St. Joſeph, a Carmelite miſſionary, and Maracci, in his notes on the Alcoran, aſſert it expreſsly. Be this as it will, Mahomet, in his Alcoran, and the Arabian authors ſince him, make frequent mention of them. Beidavius, in his comment on the Alcoran, repreſents them as a kind of mean between the Chriſtians and the Maguſians, who are the followers of the Magi, among the Perſians; he adds, that they pretend to be of the religion of Noah. Keſſæus notes, that they pretend to be in poſſeſſion of the books of Seth and Enoch; though they own none of the books of Scripture, except the book of Pſalms. See Mém. de l'Acad. des Inſcrip. et Belles Lett. tom. xii. p. 16; &c.

Some charge them with worſhipping the ſtars; and others, the angels or demons. Maimonides attributes both to them; as is obſerved under SABAISM.

Abu Joſeph Aſchæus and Keſſæus place the Sabæans about Charran, or Charres, and Ghezira in Meſopotamia; which opinion is confirmed by this, that all their books are in the Chaldee tongue, though in a character very different from the Chaldee.

Sale, in his preliminary diſcourſe to the Koran, p. 14, &c. has given the following brief account of the tenets and worſhip of this ſect. They believe in the exiſtence of one God, though they alſo pay an adoration to the ſtars, or the angels and intelligences which they ſuppoſe reſide in them, and govern the world under the Supreme Deity. They endeavour to perfect themſelves in the four intellectual virtues, and believe the ſouls of wicked men will be puniſhed for nine thouſand ages, but will afterwards be received to mercy. They are obliged to pray three times a-day, before ſun-riſe, before noon, and before ſun-ſet; and in praying they turn their faces, as ſome ſay, to the north; according to others, to the ſouth, to Mecca, or to the ſtar to which they pay their devotion. They have three faſts in the year; the firſt laſts thirty days, the ſecond nine days, and the laſt ſeven. They offer many ſacrifices, of which they eat no part, but wholly burn them. They abſtain from beans, garlic, and ſome other pulſe and vegetables. They go on pilgrimage to a place near the city of Harran, or Charran, in Meſopotamia, where great numbers of them dwell; and they have alſo a great reſpect for the temple of Mecca, and the pyramids of Egypt; fancying theſe laſt to be the ſepulchres of Seth, and of Enoch and Sabi, his two ſons, whom they conſider as the firſt propagators of their religion; and at theſe ſtructures they ſacrifice a cock and black calf, and offer up incenſe. This is one of the religions, the practice of which Mahomet tolerated (on paying tribute), and the profeſſors of it are often included in that expreſſion of the Koran, *thoſe to whom the Scriptures have been given*, or, literally, *people of the Book.*

SABAGAN ISLANDS, in *Geography*, a cluſter of ſmall iſlands in the Red ſea. N. lat. 14° 55'. E. long. 41° 54'.

SABAGENA, in *Ancient Geography*, a town of Aſia, in the Greater Armenia, upon the banks of the Euphrates, in the Lavinian prefecture. Ptolemy.

SABAISM, an ancient kind of idolatry; the firſt that ever entered into the world.

Sabaiſm conſiſted in the worſhip and adoration of the ſtars; or, as the Scriptures call them, צבא שמים, *tſeba ſchamaim*, or *ſeba ſchamaim*, i. e. *hoſt*, or *militia of heaven;* whence ſome moderns have formed the word Sabaiſm, to denote the worſhip of the heavenly bodies, and that of Sabæans for the worſhippers. But as the Hebrew word, from which theſe are formed, is wrote with a צ, *tſade*, which ſome expreſs in the modern tongues by an *s*, ſome by a *z*, others by *ts*, and others by *tz*; hence ariſe a great many different modes of writing the word among different authors; ſome, *e. gr.* writing Sabæans, others Zabians, or Zabæans, or Zabæiſts, as Buxtorf; others Tſabians, others Tſabæans, &c.

Maimonides makes frequent mention of this idolatry in his "More Nevochim;" it was very general, he obſerves, in the time of Moſes. Some of the retainers hereto taught, that God was the ſpirit of the ſphere, that is, the ſoul of the world. Abraham, he adds, was brought up in the doctrine of the Sabæans, who admitted no other gods but the ſtars, and who in their books, many of which have been tranſlated into Arabic, maintain expreſsly, that the fixed ſtars and planets are inferior gods, and the ſun and moon the ſuperior ones. Abraham at length, he tells us, oppoſing theſe errors, firſt aſſerted the exiſtence of a Creator diſtinct from the ſun. The king of the Cuthæans ſhut him up in priſon; but he ſtill perſiſting, that prince, from an apprehenſion of his diſturbing the ſtate by teaching a new religion, confiſcated his goods, and baniſhed him to the extremities of the Eaſt. This relation, he tells us, is found in a book entitled העבורה הנכטיב, the Religion of the Nabathæans.

He adds, that the Sabæans, to the adoration of the ſtars, joined a great reſpect for agriculture: they ſet a high value on cattle and ſheep; and taught, that it was unlawful to kill them. He even adds, that they worſhipped demons, under the form of goats, and that they eat the blood of animals, (though they judged it unclean,) merely becauſe they imagined it was the food of demons.

Hyde, in his Rel. Vet. Perſarum,' maintains, that the ancient Sabaiſm was very different from Paganiſm. According to him, Shem and Elam were the firſt founders of this religion, which was afterwards corrupted, reformed by Abraham, perſecuted by Nimrod, and re-eſtabliſhed by Zoroaſter; and the worſhip which the Sabians paid to the ſun was ſubordinate and ſubſervient to that of the true God. The account given of it by Dr. Prideaux (Conn. vol. i. p. 249, &c.) is much to the ſame purpoſe. In tracing the riſe of the idolatry of the Sabians, which conſiſted in the worſhip of images, he obſerves, that the true religion, which Noah taught his poſterity, was that which Abraham practiſed, and comprehended the worſhip of one God, the ſupreme creator and governor of all things, with hopes in his mercy, through a mediator. The notion of a mediator, he ſays, was very ancient and general; and under a conviction of the neceſſity of ſuch an appointment, mankind had recourſe to the ſun, moon, and ſtars, which they conceived to be the habitations of intelligences, of a middle nature between God and them, for this purpoſe. As the planets were of all the heavenly bodies the neareſt to them, and had the greateſt influence, as they generally apprehended, on this world, they made choice of them in the firſt place for their gods-mediators, to whom, as ſuch, they directed their worſhip. Here, he ſays, commenced all the idolatry that hath been practiſed in the world. They firſt worſhipped them *per ſacella*, that is, by their tabernacles, directing their worſhip towards the planets, in which they ſuppoſed the ſeveral intelligences reſided, and, in their abſence, by images; in which, after their conſecration, they thought theſe intelligences, or inferior deities, were as much preſent by their influence, as in the planets themſelves. To theſe images they gave the names of the planets, which they repreſented; and hence, he ſays, Saturn, Jupiter, Mars, Apollo, Mercury, Venus, and Diana, were firſt ranked in the polytheiſm of the ancients, becauſe theſe were their firſt gods. They then proceeded to the worſhip of deified men. See IDOLATRY.

This religion began among the Chaldæans; to which they were partly led by their knowledge in aſtronomy; and from this Abraham is ſaid to have ſeparated himſelf, when he left Chaldæa. From the Chaldæans it ſpread over all the Eaſt, where the profeſſors of it had the name of *Sabians*. From them it paſſed into Egypt, and thence to the Grecians, who propagated it to all the weſtern nations of the world. The remainder of this ſect ſtill ſubſiſts in the Eaſt under the ſame name, and their religion is a mixture of Chriſtianity, Judaiſm, Mahometaniſm, and Paganiſm. See SABÆANS, MENDÆANS, and HEMEROBAPTISTS.

SABAKA, in *Geography*, a town of Japan, in the iſland of Niphon; 130 miles S.W. of Meaco.

SABAL, in *Botany*, a name of barbarous origin, Adanſ. Fam. des Pl. v. 2. 495. See RHAPIS, ſp. 2.

SABALA, in *Hindoo Mythology*, a name of a fabulous cow of the Hindoos. See SURABHI.

SABALASSUS, in *Ancient Geography*, a town of Aſia, in Cappadocia, in the prefecture of Sargaranſena. Ptolemy.

SABALIA, a town of Aſia, in Cappadocia, in the interior of Pontus Polemoniacus. Ptolemy.

SABAN, a town of Paleſtine, in the tribe of Reuben, according to the book of Numbers.

SABANÇONG, in *Geography*, a town on the eaſt coaſt of the iſland of Borneo. N. lat. 3° 45′.

SABANJA, a town of Aſiatic Turkey, in Natolia, ſouth-weſt of a lake of the ſame name. The lake is near ſix miles long, and nearly of a triangular form. It is a fine ſheet of freſh water, and its ſituation in a woody country adds to its beauty. At this town all the roads from Aſia to Conſtantinople meet. Behind it, to the ſouthward, is a continuation of extenſive foreſts, above 200 miles in length, and about 60 broad: they are in ſome places very lofty, and form a chain of mountains running eaſt and weſt. Through them is a gravel cauſeway, which appears to be very ancient, but now very much out of repair. Sabanja is 18 miles E. of Iſmid or Iſmit, and 60 miles E.S.E. of Conſtantinople.

SABANREEKA, a river of Hindooſtan, which runs into the bay of Bengal, 20 miles E.N.E. of Balaſor.

SABARA, a town of Braſil, in the juriſdiction of Minas Geraes, on a river of the ſame name; 30 miles N. of Villarica.

SABARACUS, the *river of Ava*, in *Ancient Geography*, a large river of India, on the other ſide of the Ganges. It is ſaid to have its ſource in the ſame mountain with the Ganges, but to the eaſt of it. Its courſe is directed towards the ſouth-eaſt for about 18 degrees, but then turns towards the ſouth, and diſcharges itſelf into a gulf of the ſame name. Ptolemy gives the name of Sabara (*Bragu*) to its principal mouth.

SABARÆ, a people of India, on this ſide of the Ganges, who, according to Ptolemy, inhabited the territory at the foot of mountains towards one of the ſources of the *Adamas*, correſponding to the Mahanuddy. This diſtrict, ſituated on the banks of this river, is ſaid by Ptolemy to abound in diamonds.

SABARAT, in *Geography*, a town of France, in the department of the Arriege; 18 miles N.N.W. of Taraſcon.

SABARIA, in *Ancient Geography*, a town of Pannonia, which had the title of a Roman colony, according to Ammianus Marcellinus. The emperor Valentinian wintered at this place.

SABARIA, in *Geography*. See STEINAM *Anger*.

SABARITZEVI, a town of the principality of Guriel; 30 miles S.E. of Pati.

SABART, or *Old Tripoli*, a town of Africa; 36 miles W. of Tripoli.

SABAT, a town of Grand Bucharia; 65 miles N.N.E. of Samarcand.

SABATA, in *Ancient Geography*, a town of Italy, in Liguria, according to Ptolemy and Pomponius Mela.

SABATEI-SEVI, in *Biography*, a famous pretended Meſſiah of the Jews, was the ſon of a broker to the Engliſh factory at Smyrna, where he was born in the year 1626. He received a good education, and made conſiderable progreſs in various branches of learning. With the ſcriptures he became intimately converſant, and from the ſtudy of the prophecies, together with an ardent deſire to diſtinguiſh himſelf, he was led to believe, or at leaſt to pretend, that he was ſelected by heaven as the inſtrument raiſed up to be the redeemer of Iſrael. He certainly poſſeſſed qualifications that might command attention, and claim popularity; being endowed with a fine perſon, and very perſuaſive powers of eloquence. He began to preach in the fields about Smyrna, and though he excited only the deriſion of the Turks, many of the lower orders of his own nation became his admiring and zealous diſciples. He ſoon aſſumed the power of working miracles, and carried his deluſions ſo far, that the heads of the ſynagogue, alarmed at his pretenſions, cited him before them, and, after a very ſummary proceſs, condemned him to baniſhment. He then went to Theſſalonica, Athens, and other cities of Greece, and perhaps to Conſtantinople; from all which places he was expelled by the influence of the rabbis. He afterwards went to Jeruſalem, where his learning and fine abilities ſecured him an honourable reception, and he gained many diſciples. At their requeſt, he went on a journey to Egypt, in order that he might collect alms of their brethren. On his coming to Gaza, he met with a Jew, named Nathan Levi, who was a man of conſiderable weight with his countrymen. Having heard the pretenſions and plans of Sabatei, announcing himſelf to be the Meſſiah, he inſtantly joined in the deluſion; taking upon him the character of the prophet Elias, who was to be his forerunner. With this view he aſſembled the Jews at Jeruſalem, whom he perſuaded to aboliſh the faſt celebrated in the month of June; ſince ſorrow was incompatible with the feaſt of the Meſſiah, who was raiſed up by the Almighty in the perſon of Sabatei-Sevi. In the mean time, the latter was preaching repentance to the Jews at Gaza, whence his fame ſpread far and near, and attracted multitudes of that nation to attend upon his miniſtry, of whom the great majority became his proſelytes. When he returned to Jeruſalem, Sabatei was received by the infatuated Jewiſh populace with cries of joy: indeed, in the expreſſions of their attachment to him, they arouſed the jealouſy of the Turks, whom the rabbis were glad to appeaſe by preſents of large ſums of money. He was now obliged to quit Jeruſalem, and went to Smyrna, where, by his pathetical ſermons, he daily increaſed the number of his adherents; and in conſequence of a plan concerted between him and Nathan, the latter ſent a ſolemn deputation of four perſons, in the character of ambaſſadors, to Sabatei, who ſaluted him in the public ſynagogue as the Meſſiah. In his character of prophet, Nathan went ſo far as to declare, that within twelve months Sabatei would appear in the preſence of the ſultan, take the crown from his head, lead him in chains as a captive, and be acknowledged monarch of the whole univerſe; and that the holy temple would deſcend from heaven, a complete and glorious edifice, in which the choſen people were to offer ſacrifices till the end of the world. Sabatei, feeling that he had great authority with his nation, ordered the name of the Ottoman emperor to be omitted in their public prayers, and his own to be ſubſtituted in its place. He aſſumed the daring title of "king of kings," while he gave to his brother, Joſeph-Sevi, that of "king of Judah." He alſo directed letters to be written to the Jews in all parts of Europe and Africa, announcing his pretenſions, and calling upon them to unite in ſupporting the kingdom of their Meſſiah. His claims made a wonderful impreſſion on the credulous Jews in all parts of the world, who were led, in ſupport of his cauſe, to aſtoniſhing ſacrifices and mortifications. Many abandoned all their occupations and employments, flattering themſelves that they ſhould not ſtand in need of any thing under the triumphant government of the Hope of Iſrael. At length, on the approach of the time when Nathan's prophecy was to be accompliſhed, Sabatei took ſhipping for Conſtantinople, in the year 1666, in order, as he ſaid, that he might receive in that city the ſolemn homage of his principal ſubjects. Unfortunately for his ſchemes, when the veſſel arrived at the deſtined port, the grand vizier, by the ſultan's orders, cauſed Sabatei to be arreſted, and committed priſoner to one of his caſtles. After a time, the Jews, finding that no orders had been given to put him to death, perſuaded themſelves that the ſultan had not, and could not, have any power over his life. They accordingly flocked in great numbers to the place of his confinement, enriched the governor with the preſents which they brought, for the privilege that he afforded them of ſeeing their imaginary ſovereign, and laying at his feet their wealth. The ſultan Mohammed thought it was time to take cognizance of this increaſing frenzy, and ordered Sabatei to be brought to Adrianople, where his court then was, that he might examine the man who had wrought up the enthuſiaſm of his nation to ſo high a pitch. The ſultan ſoon put his pretenſions to a teſt. He demanded a miracle in proof of the divinity of his miſſion, and put it to this iſſue, that he ſhould be ſtripped naked, and a number of his archers were to ſhoot at him; promiſing, in caſe his arrows did not pierce his body, that he himſelf would acknowledge him to be the Meſſiah. Sabatei declined the propoſal, chooſing to confeſs himſelf an impoſtor, and embrace the Mohammedan religion, rather than ſtand ſuch a trial. He was, after this, thrown into priſon, where he died in 1676, when he was about the age of 50. It is worthy of remark, that though he had confeſſed himſelf an impoſtor, yet he had a number of followers to the end of his life. This fact, though ſo ſurpriſing in itſelf, may be eaſily credited, from the folly which we have witneſſed in our own country, within a very few months, in the caſe of the vile impoſtor Johanna Southcott.

SABATHA, in *Ancient Geography*, a town of Aſia, ſituated at the diſtance of 30 ſtadia from the Seleucia of Media.

SABATHRA, a town of Africa, on the ſea-coaſt, between the two Syrtes. Ptolemy.

SABATIA Stagna, a country and lake of Italy, in Etruria, according to Silius Italicus.

SABATICA, a country of Aſia, in Media, eaſt of Sitacene, and ſo ſituated, that it has been aſſigned to Media and to Elymais, according to Strabo.

SABATIER, Peter, in *Biography*, a learned French Benedictine monk of the congregation of St. Maur, was born at Poictiers in 1682, and died at Rheims in 1742. He ſpent twenty years of his life in preparing for the preſs a valuable edition of all the Latin verſions of the Scriptures, collected together, and united in one point of view. It conſiſts of three volumes, folio: the firſt two comprehended the Old Teſtament, and the third the New Teſtament. Sabatier lived only to print one volume; and, after his death, he was ſucceeded in his labours by La Rue, a learned member of the ſame community. This work is entitled "Bibliorum Sacrorum Latinæ Verſiones antiquæ ſeu Vetus Italica, Opera et Studio Petri Sabatier."

SABATO, in *Geography*, a river of Naples, which runs into the Volturno, near Cajazzo.

SABATZ, or Sabacz, a town and fortreſs of European Turkey, in Servia, on the Drave, under the ſangiac of Belgrade;

grade; 28 miles W. of Belgrade. N. lat. 45° 4′. E. long. 19° 28′.

SABAZIA, Σαϐαζια, among the Greeks, nocturnal myſteries in honour of Jupiter Sabazius, into which all that were initiated had a golden ſerpent put in at their breaſts, and taken out at the lower part of their garments, in memory of Jupiter's raviſhing Proſerpina in the form of a ſerpent.

There were alſo other feaſts and ſacrifices diſtinguiſhed by this appellation, in honour of Mithras, the deity of the Perſians, and of Bacchus, who was thus denominated by the Sabians, a people of Thrace.

SABBABURG, in *Geography*, a town of the principality of Heſſe Caſſel; 16 miles N. of Caſſel.

SABBADINI, DON BERNARD, in *Biography*, a Venetian maeſtro di cappella in the cathedral of Parma, a compoſer of diſtinguiſhed merit, who produced for the court of Parma three operas and an oratorio, between the years 1690 and 1698. At this period, the houſe of Farneſe at Parma had muſical dramas performed in the moſt magnificent theatre in Europe. It was capable of containing 4000 people, and had water under the ſtage ſufficient to form a great river, or for the repreſentation of a naval engagement. But this theatre has not been uſed ſince the extinction of the Farneſe family, which was to Parma what the houſe of Medicis was to Florence, and that of Eſte to Ferrara, in the magnificence of public ſpectacles and patronage of the fine arts.

SABBAR, or SABBER, in *Geography*, a famous hill of Arabia, in Yemen, at the foot of which ſtands the city of *Taæs;* which ſee. The exuberant fertility of this hill affords, according to the accounts of the Arabs, plants of every ſpecies that is to be found in any other part of the world. It is ſaid to be parcelled out among more than 100 free and hereditary ſcheicks, perfectly independent of the Imam, although ſurrounded on all ſides by his territories. This fertile mountain conſiſts of a chain of hills of various heights. The ruins of two ancient cities are ſtill to be ſeen on or near this mountain. One of them is Thobad, which is ſituated near mount Sabbar; ſome parts of its walls, with a large moſque belonging to it, ſtill remain. The other is Oddana, which ſtands at no great diſtance from Thobad, upon the ſummit of mount Sabbar, over-againſt Kahhre. The latter was the reſidence of the kings of the country; its only remains are the ruins of ſome moſques.

SABBARA, a town of Pruſſia, in the province of Oberland; 8 miles N.E. of Soldau.

SABBA RAS, or DSJIMUM, *i. e.* the ſeven capes, a projection on the coaſt of Arabia. N. lat. 24° 20′.

SABBATARIANS, or *ſeventh-day Baptiſts*, a ſect of Anabaptiſts; thus called, becauſe they obſerved the Jewiſh or Saturday-Sabbath, from a perſuaſion that it was never abrogated in the New Teſtament by the inſtitution of any other.

SABBATH, SABBATUM, the ſeventh day of the week, held as a feaſt among the Jews, in memory of God's reſting on the ſeventh day of the creation.

The word is pure Hebrew, שבת, and ſignifies *ceſſation*, or *reſt*. Philo calls it, τȣ κοσμȣ γενεσια, *the world*'s *birthday*.

The Sabbath was appointed from the beginning, by God himſelf, Gen. ii. 2, 3; and by him it was ſet apart for the commemoration of the great work of the creation; and when it had fallen into neglect after the flood, it was re-eſtabliſhed by him, upon his ſettling the Jewiſh polity after the return out of Egypt.

It has been a ſubject of diſpute both among Jews and Chriſtians, whether the Sabbath was firſt inſtituted immediately after the creation, or whether the account in Gen. ii. 3. is to be underſtood proleptically of God's appointing the ſeventh day to be obſerved as a Sabbath, not at that time, but by the Iſraelites many ages afterwards. The advocates for the latter opinion, among whom are Limborch, Le Clerc, &c. allege, that there is no mention of the Sabbath in the ſacred hiſtory till the time of Moſes, *i. e.* during the ſpace of about two thouſand five hundred years; and that when it is mentioned, Exod. xvi. 23. it ſeems to be intimated that it was before unknown to the children of Iſrael. (Ver. 25—27.) To the firſt argument it is replied, that the ſilence of Moſes cannot warrant our inferring that the Sabbath was not obſerved by the patriarchs; becauſe it is by no means probable that they had no ſtated time for reſt or devotion, or that they were left deſtitute of ſo ſalutary an inſtitution: beſides, it might be argued on the ſame principle, that the Jews did not obſerve the Sabbath from Moſes to David, ſince, in the hiſtory of that period, there is no mention of the day; and, moreover, no notice is taken of ſacrifices in the fifteen hundred years that elapſed between the birth of Seleg and the deluge, nor of the obſervance of circumciſion from the ſettlement of the Iſraelites in Canaan to the circumciſion of Chriſt, though there is no reaſon to queſtion that ſacrifices were offered in the former period, and circumciſion performed in the latter. Beſides, if it ſhould be granted that the obſervance of the Sabbath was diſuſed among the antediluvian patriarchs, it cannot be argued from thence that it was not inſtituted at the creation. The heads of the Abrahamic family were ſo remarkable for their devotion, that the ſtrict obſervance of the Sabbath in their days might be the leſs neceſſary. The early diviſion of time by weeks of ſeven days, affords alſo a very ſtrong preſumption of the primitive inſtitution and obſervance of the Sabbath; and this method of dividing time prevailed even in thoſe heathen nations, who can be ſuppoſed to have had no knowledge of the law or hiſtory of Moſes. And we actually find that they accounted one day of the ſeven more ſacred than the reſt: thus Heſiod ſtyles the ſeventh day the illuſtrious light of the ſun,

> Εϐδοματη δ' αυθις λαμπρον φαος ηελιοιο.

And Homer ſays,

> Εϐδοματη δ' ηπειτα κατηλυθεν ιερον ημαρ.
>
> "Then came the ſeventh day, which is ſacred or holy."

As to the ſecond argument above mentioned, Dr. Kennicott hath obſerved, that when the Sabbath is firſt mentioned in the time of Moſes, it is not ſpoken of as a novel inſtitution, but as one with which the people were well acquainted: "To-morrow is the holy Sabbath to the Lord:" though, with reſpect to the manner of keeping the Sabbath, by a total ceſſation from labour, and the particular day on which it was to be kept by the Jews, it ſeems to have been a new inſtitution; otherwiſe, as to the day, there would have been no occaſion for its being ſo particularly marked out by Moſes, as the reaſon why there would be a double quantity of manna on the ſixth day; for it muſt have immediately occurred to the people, that it was intended for their proviſion on the Sabbath, if the next day had been the Sabbath in courſe. Beſides, if this day, which was the twenty-ſecond of the month, had been the Sabbath, according to the paradiſaical computation, the fifteenth muſt have been ſo too, and, therefore, would not have been ſpent in marching from Elim to Sin. Again, that the Jewiſh Sabbath was on a different day from the paradiſaical or patriarchal, is probable, becauſe it was appointed as a ſign between God and the children of Iſrael, by obſerving which they were to know or acknowledge Jehovah as their God. Accordingly, the Jewiſh Sabbath is declaredly inſtituted as a memorial of their deliverance out of the land of Egypt. (Compare Exod. xx. 11. and Deut. v. 15.) The learned Mr. Joſeph Mede farther conjectures, that the Jewiſh Sabbath was ordained to be obſerved on that day, when the deliverance of the Iſraelites was completed by the overthrow of the Egyptians in the Red ſea.

It is a very probable conjecture, that the day which the heathens in general conſecrated to the honour and worſhip of their chief god the Sun, was the ancient paradiſaical Sabbath; and, therefore, the reaſon for changing the day might be to take off the Iſraelites more effectually from concurring with the Gentiles in this idolatrous worſhip. It is a farther preſumption in favour of this change, that, upon their migration out of Egypt, the beginning of the year was changed from the month Tizri to the oppoſite month Abib (Exod. xii. 2.), and the beginning of the day from the morning to the evening; and they were to compute their days, at leaſt their Sabbaths, from evening to evening. By this means the fifteenth day was changed into the fourteenth, and the ſeventh into the ſixth; and the change of the Sabbath made a change in the beginning of the week, which always commenced the next day after the Sabbath, which was ſtill the ſeventh day of the week, or the ſeventh in reſpect of the preceding ſix of labour, though not the ſeventh from the beginning of time. We may alſo obſerve, that the law of the Sabbath is limited, not only to the people of Iſrael, but to the duration of their ſtate and polity. (Exod. xxxi. 16.) Hence it has been concluded, that, by the ſecond change which took place under the Chriſtian diſpenſation, our Sabbath, which is the firſt day of the week, is the ſame with the primitive patriarchal Sabbath. To Mr. J. Mede's argument it has been replied, that the ſixth day, mentioned in the fore-cited text, is not the *ſixth* from the *fifteenth of the month*, but from the day on which the manna began to fall, which might be *firſt* in the *week*; or, in general, that it might ſignify the *ſixth* of the week, whenever the manna began to fall; and alſo, that allowing it were, as Mede ſuppoſes, the *ſixth* from their journey on the *fifteenth*, it will not prove a *change* in the Sabbath, but only that *before* the giving of the law on mount Sinai, a greater liberty of travelling on neceſſary occaſions was allowed on the Sabbath: and not to inſiſt further, on the poſſibility that the journey they took on the *fifteenth* day of the month might be only the *beginning* of their march from Elim to Sinai, and perhaps be more than would *after* the giving of the law have been allowed: not to urge, that upon the ſignal given by the *cloud*, they might have marched on any future Sabbath; as, by ſpecial command, ſacrifice was offered in places not generally allowed by the law. Mede's Works, vol. i. p. 56, &c. Jennings's Jewiſh Ant. vol. i. book iii. chap. 3. Dr. Chandler's Two Diſcourſes on the Inſtitution of the Sabbath. Hallet on Script. vol. iii.

The Apoſtolical Conſtitutions (ſee CONSTITUTIONS, *Apoſtolical*) expreſs particular reſpect for the Sabbath, or ſeventh day of the week. They ordain, that by all Chriſtians in general, the Sabbath and the Lord's day ſhould be kept as feſtivals: that on theſe days ſervants ſhould ceaſe from labour, and come to church on the Sabbath and the Lord's day; and that Chriſtians in general ſhould aſſemble together for worſhip on every day, but eſpecially on the Sabbath and the Lord's day. But Dr. Lardner has ſhewn, that the apoſtles of Chriſt never gave ſuch inſtructions about keeping the Sabbath; and that ſuch inſtructions are more ſuitable to the fourth or fifth century, than to the moſt early times of Chriſtianity. In the times next following thoſe of the New Teſtament, Ignatius expreſsly ſays, "Let us no longer ſabbatize, but keep the Lord's day, on which our life aroſe." Tertullian rejects Sabbaths and new moons, as foreign to Chriſtians; but ſpeaks of the Lord's day and Pentecoſt as Chriſtian ſolemnities. Hence this learned writer infers, that the reſpect ſhewn for the Sabbath, and joining it with the Lord's day, are no marks of the antiquity of the Conſtitutions, but rather otherwiſe. (Lardner's Credibility, &c. vol. iv.) Beſides, we may obſerve, that there is no command in the New Teſtament by which Chriſtians are obliged to obſerve the *ſeventh* day; but, on the contrary, the apoſtle plainly intimates that it is aboliſhed, Col. ii. 16.

Leo of Modena informs us, that it is a received opinion among the modern Jews, that the ſouls of the damned ſuffer no torments on the Sabbath; and, therefore, they make it laſt as long as poſſible.

The Chriſtians alſo apply the word Sabbath, by extenſion, to the firſt day of the week, popularly called *Sunday*, or the *Lord's day*; as inſtituted by the apoſtles to take place of the Jewiſh Sabbath, and by us obſerved in remembrance, not of the creation, but of the work of redemption's being completed by our Saviour's reſurrection on that day. See SUNDAY.

Thoſe who diſpute the divine appointment of a Chriſtian Sabbath, yet allow the moral neceſſity of it, as a wiſe deſignation of time for the recruiting of our bodies, and at the ſame time keeping up a ſenſe of the great benefits we have received from God, and a ſpiritual temper of mind. By allowing ſix days to labour, the poor man has time to earn his bread, and the man of buſineſs has time to diſpatch his affairs. Had more time been allotted to labour and buſineſs, and none to reſt, our bodies would have been too much fatigued and waſted, and our minds too long engaged about worldly matters, ſo as to have forgotten divine things. Greedy people, without ſuch an injunction, would ſcarce have ſpared their own bodies, much leſs their ſervants, ſlaves, cattle, &c.

SABBATH-*breaking*. See SUNDAY.

The Jews had alſo their *Sabbatic Year*, which was every ſeventh year; in which they were obliged to ſet their ſlaves at liberty, and let their lands lie idle. See JUBILEE.

SABBATH is alſo uſed, by writers on divination, for a nocturnal aſſembly which witches are ſuppoſed to hold on Saturdays, where the devil appears in form of a goat, around whom they make ſeveral dances, and magic ceremonies, amply deſcribed in the books of Dæmonomania.

To prepare themſelves for this meeting, it is pretended, they take certain ſoporific drugs; after which they are ſaid to fly up the chimney, and to be ſpirited through the air to the Sabbath on a ſwitch. See Delrio Diſquiſ. Mag. lib. iv. qu. 16.

SABBATH *Day's Journey*, is a Jewiſh itinerary meaſure, fixed by critics to the ſpace of 750 paces, or 2000 Jewiſh cubits, or about two-thirds of an Engliſh mile.

SABBATIA, in *Botany*, a genus named by Adanſon after two Italian botaniſts, editors of part of the expenſive, but uſeleſs, *Hortus Romanus*, which the authors of the *Hortus Kewenſis*, very properly, declined quoting, on the avowed ground of its inutility. Adanſon writes the name indeed *Sabatia*, but we preſume, with Mr. Saliſbury, that the above was his intention. He founds the genus on *Chironia dodecandra* alone, his characters depending on number, and being incorrect in other reſpects. Mr. Saliſbury takes his own ideas of this genus from *Chironia campanulata*, and ſuggeſts an excellent character in the ſpiral ſtigmas, while the anthers are revolute, not properly ſpiral. On this principle the genus in queſtion is adopted by Mr. Purſh, in his North American Flora, v. 1. 123, 137, where ſix ſpecies are defined; not indeed without too much deference to Michaux, in a blameable perverſion of ſpecific names. As we have had no opportunity of inveſtigating more than one or two of the ſpecies, and have no means of knowing whether the moſt eſſential marks of diſtinction hold good throughout the whole, we for the preſent decline admitting the genus. The name, moreover, does not recommend itſelf by any claim that ſhould haſten its eſtabliſhment. Mr. Purſh's eſſential character is ſubjoined.

Capſule of one cell. Tube of the corolla pitcher-ſhaped; limb in five to twelve deep ſegments. Stigma deeply divided; its ſegments ſpiral. Anthers finally revolute.

SABBATIANS, Sabbatiani, in *Eccleſiaſtical Hiſtory*, a ſect thus called from Sabbatius, their leader, who lived under Diocleſian. He was firſt a Jew, then converted, and made a prieſt by Marcion; but he afterwards left the ſect of Marcionites, on account of the celebration of Eaſter, which he would have to be on the fourteenth day of the moon; whence he and his adherents were called alſo *Quartodecimans*.

The Sabbatians are recorded by eccleſiaſtical hiſtorians, as having a great abhorrence of the left-hand; ſo as to make it a point of religion not to receive any thing with it. This cuſtom, which is now become a piece of manners among us, was then eſteemed ſo ſingular, that the Sabbatians were thence denominated αϱιϛεϱοι, *q. d. ſiniſtri*, or *left-hand men*.

SABBATINI, Andrea, in *Biography*, known likewiſe by the name of Andrea da Salerno, is the firſt artiſt that deſerves notice of the Neapolitan ſchool. Enamoured of the ſtyle of Pietro Perugino, who had painted an Aſſumption of the Virgin in the dome of Naples, he ſet out for Perugia to become his pupil; but hearing, at an inn on the road, ſome painters extol the works of Raffaello in the Vatican, he altered his mind, went to Rome, and entered that maſter's ſchool. His ſtay there was ſhort, for the death of his father obliged him to return home, againſt his will, in 1513. He returned, however, a new man. It is ſaid that he painted with Raffaello at the Pace, and in the Vatican, and that he copied his pictures well: he certainly emulated his manner with ſucceſs. Compared with his fellow-ſcholars, if he falls ſhort of Giulio Romano, he ſoars above Raffaello del Colle, and the reſt of that ſphere. He had a correctneſs and ſelection of attitude and features, depth of ſhade, perhaps too much ſharpneſs in the marking of the muſcles, a broad ſtyle in the folding of his draperies, and a colour which even now maintains its freſhneſs. Of his numerous works at Naples, mentioned in the catalogue of his pictures, the altar-pieces at S. Maria dell Grazei deſerve perhaps preference; for his freſcoes there and elſewhere, extolled by the writers as miracles of art, are now, for the greater part, deſtroyed. He painted likewiſe at Salerno, Gaeta, and other places of the kingdom, for churches and private collections, where his Madonnas often rival thoſe of Raffaello. He died about 1545, aged 65. Fuſeli's Pilkington.

Sabbatini, Lorenzo, called Lorenzin di Bologna, was one of the moſt genteel and moſt delicate painters of his age. He has often been miſtaken for a ſcholar of Raffaello, from the reſemblance of his Holy Families in ſtyle of deſign and colour to thoſe of that maſter, though the colour be always weaker. He likewiſe painted Madonnas and angels in cabinet pictures, which ſeem of Parmigiano. Nor are his altar-pieces different: the moſt celebrated is that of St. Michele at St. Giacomo, engraved by Agoſtino Caracci, and recommended to his ſchool as a model of graceful elegance. He excelled in freſco: correct in deſign, copious in invention, equal to every ſubject, and yet, what ſurpriſes, rapid. Such were the talents that procured him employ, not only in many patrician families of his own province, but a call to Rome, under the pontificate of Gregorio XIII., whom, according to Baglioni, he pleaſed much in his naked figures, a branch he had not much cultivated in Bologna. The ſtories of St. Paolo in the Capella Paolina, Faith triumphant over Infidelity in the Sala Regia, and various other ſubjects in the gallery and loggie of the Vatican, are the works of Sabbatini, always done in competition with the beſt maſters, and always with applauſe: hence among the great concourſe of maſters, who at that time thronged for precedence in Rome, he was ſelected to ſuperintend the different departments of the Vatican, in which office he died in the vigour of life, 1577. Fuſeli's Pilkington.

Sabbatini, Galeazzo, an eminent Italian compoſer, born at Peſaro, who publiſhed, in 1644, "Regole facile e breve per Suonare ſopra il Baſſo continuo nell' Organo." This ſeems to have been the ſecond tract, after Viadana's, that appeared on the ſubject of thorough-baſe. The author is much praiſed for his ſcience by Kircher in his "Muſurgia," and by Walther in his Muſical Dictionary. But the book is very inadequate to the preſent wants of muſical ſtudents, treating of nothing but common chords, which are invariably given to every ſound of the ſcale.

SABBAYMEYOUN, in *Geography*, a town of the Birman empire, on the Irawaddy; 104 miles N.N.W. of Rangoon.

SABBEA, a town of Arabia, in the province of Yemen; 8 miles N.E. of Abu-Ariſch.

SABBIA, a town of Arabia, in the province of Yemen; 36 miles N.E. of Chamir.

SABBINGE, a town of Holland, in the iſland of Wolferſdyck.

SABBSKAR, a ſmall iſland on the eaſt ſide of the gulf of Bothnia. N. lat. 61° 29′. E. long. 21° 7′.

SABDARIFFA, in *Botany*, the South American name of a ſpecies of Hibiscus (ſee that article), and retained by Linnæus as its ſpecific appellation.

SABEA, in *Ancient Geography*, a town of Paleſtine, in the tribe of Simeon, according to the book of Joſhua.

Sabea in *Geography*, a town of Arabia, in the province of Yemen; 32 miles S.E. of Loheia.

SABEIA, a ſmall iſland in the Red ſea. N. lat. 18° 22′.

SABELLA, in *Zoology*, a genus of the claſs and order Vermes Teſtacea. The generic character is as follows: the animal is a nereis, with a ringent mouth, and two thicker tentacles behind the head; the ſhell is tubular, compoſed of particles of ſand, broken ſhells, and vegetable ſubſtances, united to a membrane by a glutinous cement. There are twenty-five

Species.

Scruposa. The ſhell of this ſpecies is ſolitary, looſe, ſimple, curved, with lentiform gloſſy granulations. It is found in divers parts of India, and in the American iſlands. The ſhell is ſubulate, obtuſe at the tip, as thick as a ſwan's quill, and compoſed of equal white grains of ſand.

Scabra. The ſhell of this alſo is ſolitary, fixed by the baſe, ſimple, curved, with radiate-rough granulations. It is found in America.

* Alveolata. This is compoſed of numerous parallel tubes communicating by an aperture, forming, in the maſs,

an appearance of honey-comb. It is found on the coaſts of our own country, and of other parts of Europe, covering rocks for a conſiderable ſpace, and eaſily breaking under the feet. The ſhell is compoſed chiefly of ſand, and very fine fragments of ſhells, and is from two to three inches long.

* Chrysodon. The ſhell of this ſpecies is ſolitary, ſub-cylindrical, papyraceous, chiefly compoſed of fragments of ſhells. It is deſcribed by Pennant as the Sabella rudis. It inhabits the European and Indian ſeas; is from two to ſix inches long, and about as thick as a quill. The ſhell is pointed, dirty yellow, flexile while it is wet.

* Belgica. Shell ſtraight, conic, compoſed of minute particles of ſand. This is the S. tubiformis of Pennant: it is from two to three inches long, and is found on many European coaſts.

Rectangula. The ſhell of this is brown, with alternate white and black rings, ſtraight, with a rectangular gibbous extremity. It is full nine inches long, not half an inch in diameter.

Capensis. Shell cylindrical, conic, open at both ends, membranaceous, rough with interrupted tranſverſe ſtriæ. It inhabits the promontory of the Cape of Good Hope.

Nigra. The ſhell of this is cylindrical, black, ſmoothiſh on the outſide, compoſed of very minute particles of ſand. It is found in the rivulets of Thuringia, and is half an inch long.

Stagnalis. Shell ſtraight, tapering, open at both ends, ſmooth, with a marginal aperture, compoſed of the moſt minute particles of ſand. It is found in the rivers of Thuringia, ſometimes black and ſolitary, ſometimes cinereous, and adhering in a maſs to the Ranunculus aquatilis.

Conica. Shell narrow, conic, ſmooth, ſtraight, cinereous, with a blackiſh open tip, compoſed of moſt minute particles of ſand. It inhabits near Jena; is not half an inch long; the aperture is not margined.

Uncinata. Shell ſmooth, round, tapering, with an open hooked tip. It inhabits the rivers of Thuringia; is not more than a quarter of an inch long. The ſhell is ſolitary, compoſed of very fine ſand, cinereous, or black.

Sabulosa. Shell cylindrical, cloſed at the tip, ſubclavate, perforated, compoſed of larger grains of ſand. It is found in Thuringia and Belgium. It is about an inch long; the ſhell is ſtraight, or a little inflected in the middle, cinereous or black, or cinereous above and black beneath.

Vegetabilis. Shell depreſſed, compoſed of fragments of twigs, ſtems, and bark, and broken pieces of the Tellina cornea. This is found in the waters of Thuringia, and is an inch long.

Ammoniata. Shell cylindrical; within it is ſmooth, compoſed of the fragments of the cornu ammonis.

Helicina. Shell roundiſh, within ſmooth, compoſed of fragments of the Helix puſilla. It inhabits the ſtagnant waters of Thuringia, and is about an inch long.

Dimidiata. One part of the ſhell is compoſed of ſand and gravel, the other is thicker, clavate, and compoſed of fragments of ſhells. It inhabits the waters of Thuringia.

Fixa. The ſhell of this ſpecies is compoſed of ſmall ſtones, tapering towards the tip. It inhabits Thuringia, affixed to ſtones in the water, is an inch long, gregarious, open at the ſide, by which it is fixed.

Clavata. Shell compoſed of ſmall ſtones, the open end clavate, and conſiſting of larger ſtones. This is a native of Thuringia.

Corticalis. The ſhell of this is compoſed of pieces of bark, towards the end of broken ſtems. It is found in great varieties in the rivers of Thuringia.

Arundinacea. Shell ſubconic, open at both ends, compoſed of fragments of the bark of reeds placed on each other. It inhabits Thuringia, and is about an inch long.

Aculeata. Shell roundiſh, compoſed of ſmall twigs and the culms of graſſes, the points of which project a little. This is found in Thuringia. The ſhell is ſometimes conic, ſometimes cylindrical.

Marsupialis. The ſhell of this ſpecies is black, the open end is cylindrical and narrower, the other part turgid and ovate. It is more than two inches long, and compoſed of black ſand; within it is ſmooth.

Norwegica. Shell roundiſh, open at both ends, brittle, membranaceous, compoſed of very minute grains of ſand. It inhabits Norway, is four inches long, and about the thickneſs of a crow's quill.

Lumbricalis. Shell coarſe, creeping, fragile, open at both ends. The inhabitant has no tentacula at the mouth, but has a prickly jointed body. It inhabits the Greenland ſeas, fixed to ſtones. The ſhell is of a greyiſh colour, compoſed of particles of ſand connected to a convex membrane; within it is lubricous, poliſhed. The inhabitant is rufous, annulate with white, beneath paler: it has twenty-one joints, each of which is armed with two ſpines; and two other terminal ones, which are unarmed.

Indica. The ſhell of this is cylindrical, compoſed of capillary, ſub-cylindrical, agglutinated cryſtals of quartz. It inhabits the Indian ocean.

SABELLIANS, in *Eccleſiaſtical Hiſtory*, a ſect in the Eaſt, who reduced the three perſons in the Trinity to three ſtates or relations; or rather reduced the whole Trinity to the one perſon of the Father; making the Word and the Holy Spirit to be only virtues, emanations, or functions of it.

Sabellius, their chief, firſt broached this doctrine, in the third century, about the year 255, in a city of Libya, called Ptolemais. He taught, according to Epiphanius, that the ſame being is Father, Son, and Holy Ghoſt; ſo that there are only three denominations in one hypoſtaſis or ſubſiſtence; or, as in man, body, ſoul, and ſpirit. He ſays, that the Sabellians agreed with the Noetians, except in one thing, *viz.* that they ſaid, the Father did not ſuffer. Theodoret's account of Sabellius is, that he taught, the Father and the Son and the Holy Spirit to be one hypoſtaſis or ſubſiſtence, and one perſon with three names; that he ſpeaks of the ſame ſometimes as Father, ſometimes as Son, and ſometimes as Holy Ghoſt; and ſays, that in the Old Teſtament he delivered the law as Father, and in the New dwelt among men (or was incarnate) as the Son, and deſcended on the apoſtles as the Holy Spirit. Auguſtine repeatedly ſays, that there was no difference in opinion between Noetus and Sabellius; and that the Sabellians, as well as the Noetians, taught the Father to have ſuffered; and that they were oftener called Patripaſſians than Sabellians.

The Noetians derived their name from Noetus, who was of Smyrna, as ſome ſay, or, according to others, of Epheſus, in Aſia; and they are placed by Lardner about the year 220. It appears probable from the accounts of ancient writers, that Noetus, and others who agreed with him, believed one divine perſon only, and denied a diſtinct and proper perſonality of the Word and Spirit. But Lardner thinks that their doctrine has been ſet in a bad light. It is affirmed that they ſaid the Father was born, and ſuffered, and died, and was Chriſt. Beauſobre, who forms his judgment of thoſe called heretics with candour and equity, declares, " that this is ſo abſurd, and ſo manifeſtly contrary to many texts of the N. T. that it appears ſcarcely poſſible it ſhould be maintained by any reaſonable man, which makes him ſuſpect, that this was not the opinion of thoſe perſons, but a conſequence, which the orthodox drew from their principles." This, ſays Dr. Lardner, appears to me not unlikely; a paſſage of Auguſtine will confirm the ſuppoſition; for he argues and affirms, "that all who are of that opinion, that the ſame is Father, Son, and Spirit, muſt alſo ſay that the Father ſuffered." This ſeems to ſhew, that he had no proof from their own writings, or expreſſions, that the Sabellians, and others whom he charges with that opinion, were Patripaſſians, but he inferred it from their doctrine concerning the unity and ſimplicity of the Deity. An opinion ſimilar to that of Noetus was maintained by ſeveral perſons both before and after him.

It is intimated by Epiphanius, that the Sabellians embraced their peculiar opinions out of a dread of polytheiſm; for, as he ſays, when they met with other Chriſtians, eſpecially ſuch as were unlearned, they would put this ſhrewd queſtion to them; "Well, good friends, what is our doctrine? Have we one god, or three gods?" Sabellianiſm ſeems to have been very agreeable to the apprehenſions of many people; and Euſebius ſpeaks of its increaſing very much in Egypt, when Dionyſius of Alexandria oppoſed it. Iſidore ſays, that Sabellianiſm ſpread to a great degree; and we learn alſo from Epiphanius, that in 375, there were many of that opinion in Meſopotamia and at Rome. Moreover, the frequent notice which Auguſtine takes of Sabellians, in his tracts and ſermons to the people, is an argument that in his time there was a conſiderable number of perſons who maintained this opinion. Epiphanius expreſsly ſays, that they uſed all the ſcriptures of the O. and N. T.; and that there were ſome texts which they principally inſiſted on for the ſupport of their doctrine; and from other authorities it appears, that the Sabellians received the holy ſcriptures as other Chriſtians did. Sabellianiſm, ſays Baſil, is Judaiſm, brought into the church under the name of Chriſtianity; and he alſo ſays, we abhor Sabellianiſm as we do Judaiſm. Lardner's Credibility, vol. iii.

Epiphanius tells us, that the god of the Sabellians, whom they called the Father, reſembled the ſun, and was a mere ſubſtratum; of which the Son was the illuminative virtue or quality, and the Holy Spirit the warming virtue.

The Word, they taught, was ſhot or darted forth like a divine ray, to accompliſh the work of redemption; and that being re-aſcended to heaven, as the ray returns to its ſource, the warmth of the Father was communicated, after a like manner, to the apoſtles.

The council of Antioch, held by the Euſebians in 345, tells us, that, at Rome, thoſe were called Patripaſſians, who, in the Eaſt, were called Sabellians. Lardner's Credibility, vol. vi.

SABELLICUS, in *Biography*, an Italian hiſtorian and philologiſt, whoſe proper name was Marcantonio Coccio, was born about the year 1436, at Vicovaro, in the Campagna of Rome. He ſtudied under different maſters at Rome, and finally under Pomponio Leto, who admitted him into his academy, in which he obtained the name of Sabellicus, as being a native of the ancient country of the Sabines. In 1475 he accepted an invitation to the profeſſorſhip of eloquence at Udine. He there employed himſelf in reſearches into the antiquities of the province of Friuli, the fruits of which were given to the public in a work, "De Vetuſtate Aquileia, lib. vi." About the year 1484 he removed to Venice, where he taught the belles lettres, till he was forced away from that city by the plague. He now went to Verona, where, in the ſpace of fifteen months, he wrote, in the Latin language, thirty-two books of the hiſtory of Venice, which he printed on his return to that capital, in 1487. This work was held in high eſtimation by the republic, and the author was aſſigned a penſion, who, in gratitude to the ſtate, wrote a deſcription of the city,—a dialogue concerning its magiſtrates,—and two poems in praiſe of the republic. He was afterwards made librarian of St. Mark: this ſituation afforded him much leiſure time, which he employed in purſuing his ſtudies with the greateſt aſſiduity, as appeared by the number of works which he publiſhed. Of theſe was a hiſtory of the world from the creation to the year 1503, entitled "Rhapſodiæ Hiſtoriarum Enneades," in ſixty-three books. Sabellicus founded an academy at Venice, and he appears to have enjoyed a very high reputation among the learned of his time. He died, in conſequence of ſome irregularities in his moral conduct, in 1506. As a philologiſt, he gave notes upon Pliny, Livy, Valerius Maximus, and Catullus, which have been preſerved in Gruter's "Theſaurus."

SABEN, or Seben, in *Geography*, a town of the biſhopric of Brixen, formerly the ſee of a biſhop, afterwards removed to Brixen; 8 miles S.W. of Brixen.

SABERCAN, a town of the Arabian Irac; 50 miles E. of Bagdad.

SABERHAS, a town of Perſia, in the province of Irac; 90 miles S. of Hamadan.

SABGUNGE, a town of Bengal; 7 miles S.W. of Purneah.

SABI, or Xavier, a town of Africa, in a province of the ſame name, and capital of the kingdom of Whidah, on the Slave coaſt. It is ſituated within a mile of the river Euphrates, and about eight miles from the ſea, and has factories belonging to the Portugueſe, French, and Engliſh. The town is large and populous; a large market is held every Wedneſday and Saturday, a mile from the town, to prevent confuſion and diſturbance from the multitude of people. Here the king's women attend to ſell their cloths, and their other manufactures. All ſorts of merchandize are here collected; and thoſe who have brought goods are permitted to take what time they pleaſe to diſpoſe of them, but without fraud or noiſe. A judge, attended by four officers armed, is appointed by the king for the inſpection of all goods, to hear and determine all grievances, complaints, and diſputes. To oppreſs liberty, and ſell for a ſlave the man born free, is a crime of a black complexion, and always puniſhed with death. The market-place is ſurrounded with ſutlers' booths, and places of refreſhment for the conveniency of the people. They are only permitted to ſell certain ſorts of meat; as beef, pork, goats' and dogs' fleſh. Other booths are kept by women who ſell maize, millet, rice, and corn-bread. Other ſhops ſell pito, or a kind of pleaſant, wholeſome, and very refreſhing beer. Palm-wine, aqua-vitæ, and ſpirits, which they have from the Europeans, are kept in other ſhops, with reſtrictions, to prevent drunkenneſs and riot. Here ſlaves of both ſexes are bought and ſold; alſo oxen, ſheep, dogs, hogs, fiſh, and birds of all kinds. Woollen cloths, linen, ſilks, calicoes of European and Indian manufacture, they have in great abundance; likewiſe hard-ware, china, and glaſs of all ſorts, gold in duſt and ingots, iron in bars, lead in ſheets, and every thing of European, Aſiatic, or African production, is here found at a reaſonable price. The chief commodities of Whidah manufacture are cloths, umbrellas, baſkets, pitchers for pito or beer, plates and diſhes of wood, gourds finely ornamented, white and blue paper, pepper, palm-oil, ſalt, kan-kis, and other commodities. Mod. Univ. Hiſt. vol. xiii.

SABIA, a country of Africa, near the Indian ſea, S. of Sofala, both which are conſidered as parts of the monarchy of Mocaranga. This country is populous and rich, the ſoil is fertile, and the heat extreme. It is divided into ſeveral provinces. S. lat. 21° to 23°.

Sabia, or *St. Mary*, a river of Africa, which traverſes the country of Sabia, and diſcharges itſelf into the Indian ſea, S. lat. 21° 10′. E. long. 32° 30′.

SABIANS. See Sabæans.

SABICEA, in *Botany*, a word altered by Aublet, from *Sabiſabi*, the name of the plant among the natives of Guiana. See Schwenkfeldia.

SABIE, or Sæbye, in *Geography*, a ſea-port of Denmark, on the E. coaſt of North Jutland, at the mouth of a river of the ſame name; 23 miles N.N.E. of Aalborg. N. lat. 57° 20′. E. long. 10° 31′.

SABIER, a town of Africa, on the Slave coaſt; 18 miles S.W. of Aſſam.

SABINA, a province of Italy, bounded on the N. by Umbria, on the E. by Abruzzo Ultra, on the S. by Campagna di Roma, and on the W. by the Patrimonio; about 30 miles long, and from 15 to 22 broad. It is a part of the territory of the ancient Sabines, and produces wine and oil. Its capital is Magliano.

Sabina, in *Botany*, ſuppoſed to have been ſo called from growing in the country of the Sabines; the Common Savine. See Juniperus.

SABINES, Sabini, in *Ancient Geography*, a people who were for a long time conſiderable in Italy. Authors have ſuggeſted a variety of etymologies in accounting for their name. Pliny and Feſtus have aſcribed it to their worſhip of the gods, απο τȣ σεβιϛαι. But in this appellation there is nothing that diſcriminates them from other neighbouring nations. If Portius Cato and Dionyſius Halicarnaſſenſis are to be credited, they took their name from Sabinus, the ſon of Sancus, or Sabus, whom they worſhipped under the name of Dius Fidius. According to Varro, Sancus, in the language of the Sabines, was equivalent to Hercules in Greek. Sancus was the principal deity of the Sabines, and probably one of their deified heroes, and of Umbrian or Etruſcan extraction. M. Gebelin, aſcribing their origin to the ancient nation of Umbria, where the Celtic language prevailed, ſuggeſts that, in this language, *ſab* ſignifies high or elevated, and that they were thus denominated as the inhabitants of high places, as the Orobii are called men of the mountains. According to ſome ancient writers, the Sabines, as ſome have ſuppoſed, were a colony of Lacedæmonians; and others conjecture, that they were the offspring of the Auſones. But it is moſt probable that they originated from Umbria. From them, however, were deſcended the Picentes, Frontani, Marrucini, Peligni, Veſtini, Marſi, Æqui, Hernici, and the Samnites; and from the Samnites, the Hirpini, Lucani, Brutii, and Campani.

The country of the Sabines lay between the Nar and the Anio, now the Teverone; the former ſeparating it from Umbria, and the latter from Latium. Cures, whence the Romans are ſaid to have been called Quirites, was, at firſt, the metropolis of the Sabini, and in ſucceeding ages Reate, now Rieti. The mines of Cures are ſtill to be ſeen at a place called Vicovio di Sabina. The other cities in this country, worthy of notice, were Nurſia, Eretum, Nomentum, Cutiliæ, and Amiternum, ; now known by the names of Norcia, Monte Rolondo, and Lamenturio. The cities of Cutiliæ and Amiternum have long ſince been deſtroyed; but the ruins of the former ſtill remain at Civita Ducale, and thoſe of the latter near the city of Aquila. The Sabines extended themſelves from the heights of the Apennines, by their colonies, to the ſouthern parts of Italy, and eſtabliſhed themſelves on the left of the Anio, where, according to Livy, they poſſeſſed a town called Collatia. Their original country was bounded on the N. by Umbria and Picenum; on the S. by Latium; on the W. by part of Umbria and Etruria; and on the E. by the territories of the Picentes, Veſtini, and Marſi. Its length was computed to be 1000 ſtadia, or 125 miles, according to Strabo. The Picentes, Samnites, Lucanians, and Brutians, deduced their origin from the Sabines. The Picentes, in particular, ſeem to have been placed at firſt in a diſtrict between the Nar and the Anio. As for the Samnites, they were, in the earlieſt times, called Saunites, or Sabinites, derived evidently from Sabines. That the Lucanians and Brutians were originally Sabine colonies, we learn from Strabo, lib. v.

The government, laws, language, arts, manners, and religion of the Sabines, muſt have been generally almoſt the ſame with thoſe of the Umbrians and Etruſcans, from one or both of which nations they were undoubtedly deſcended. With reſpect to religion, however, ſome peculiarities prevailed among the Sabines; one of which was the high honour and adoration paid to Sancus, whom the Sabines conſidered as the chief deity of their country. Jupiter and Juno Curis were likewiſe diſtinguiſhed deities amongſt them. So was alſo Vacuna, ſuppoſed by ſome to be the ſame with Diana, by others with Ceres, by others with Venus; but, according to Varro, ſhe was the goddeſs of wiſdom. The worſhip of theſe divinities paſſed from the Sabines to the Romans; and this is no matter of ſurpriſe, ſince the coalition of the Roman and Sabine nations, even in the time of Romulus, muſt, of courſe, have introduced into Rome the Sabine religion.

Among the principal cities of the Sabines may be ranked the following; *viz.* Fidenæ, ſituated on the Tiber, about 40 ſtadia from Rome; Cruſtumerium, N. of Fidenæ; Ficulea, at a ſmall diſtance from the two former towns; Corniculum, N. of Ficulea; Collatia, on the borders of Latium, and the country of the Sabines, between the Prænestine way and the left bank of the Anio, about ſix miles from Rome; Nomentum, one of the moſt conſiderable Sabine cities, 10 miles from Rome; Eretum, on the Tiber, about 10 miles from Rome; Regillum, near the Tiber; Cures, or Curis, anciently the capital of the Sabines; Caſperia, now Aſpra; Fanum Vacunæ, now Vacuna or Vacune; Reate, 15 miles from the laſt-mentioned town, built by the Aborigines, or Umbrians, the progenitors of the Sabines; Palatium, or Palantium, about 25 ſtadia W. of Reate; Trebula, upon an eminence, about 60 ſtadia from Reate; Veſcola; Suna; Meſula; Orvinium; Corſula; all of which were towns built by the Aborigines: Iſſa, an iſland and town, environed by a lake, and Maruviun, ſituated upon that lake; Vatia; Tiora; Liſta; Cutilia, or Cotyle, about 70 ſtadia from Reate, ſituated on a mountain, and near a lake of the ſame name; Amiternum, a famous city of the Sabines, in the time of the Aborigines; Teſtrina; Nurſia, or Norica; Tarinum;—alſo, Antemnæ, Cænina, Cameria, Medullia, and Ameriola, placed by Cluverius among the Sabine towns, but really belonging to the Latins. We ſhall here add, that the country of the Sabines correſponded to that tract of country, which, at preſent, forms a part of the duchy of Spoleto, and the Farther Abruzzo.

The chief mountains of the Sabine territory were the Mons Tetricus, now Monte di S. Giovanni; Mons Severus, now Monte Negro; Mons Fiſcellus, a part of the Apennines, out of which iſſues the Nar; the Montes Gurgures, near Reate; the Mons Canterius; Mons Matela, now Monte Genaro; Mons Sacer, near the Anio, and not far from

Rome; and the Mons Coritus, placed by ſome in Etruria. The principal rivers of this tract are the Nar or Nera; the Velinus, or Velino; the Telonius, now the Turano; the Himella, now the L'Aja; the Farfarus, now the Farfa; the Allia, now the Rio di Moſſo; the Turia; the Anio; the Vereſis; the Digentia, now the Rio del Sole; and the Avens; all which rivers diſcharged themſelves into the Tiber. The lakes of this country are Lacus Cutilienſis, now Il Pozzo Retignano, and Lacus Velinus, now Lago di Pie di Luco.

The hiſtory of the Sabines, previous to the foundation of Rome, is ſo blended with fables, that it is undeſerving the attention of the judicious reader. After this era, the firſt event of importance was the rape of the Sabine women. When Romulus had completed and enlarged his new city, he only wanted a ſupply of women to ſecure the duration of the ſtate. In order to accompliſh this end, he proclaimed a ſolemn feaſt and public games, in honour of equeſtrian Neptune, called Conſus, (ſee Consualea,) to which a great multitude of people reſorted; and in the midſt of the ſolemnity he gave a ſignal, upon which the Romans ruſhed in with their drawn ſwords among the ſtrangers, and ſeized their daughters, amounting in number to 683: Romulus then choſe huſbands for them, and married them in the manner afterwards conſtantly uſed at Rome. The Sabines reſented this violence; and ſent to demand the reſtitution of their daughters, with which demand Romulus refuſed to comply, inſiſting, on his part, that the Sabines ſhould confirm the marriages of his Romans. After a ſecond demand and refuſal, the Sabines commenced hoſtilities, and cauſed an army to march toward Rome, under command of their king, Titus Tatius. In a general engagement Romulus was wounded, but recovering from the effect of the ſudden injury which he received, he rallied his troops, routed the Sabines, and drove them back to the citadel of Rome, of which they had taken poſſeſſion. During a kind of ſuſpenſion of hoſtilities between the contending armies, the Sabine women offered to negotiate. The ſenate paſſed a decree for this purpoſe; and having laid aſide their ornaments, they advanced in mournful proceſſion to the Sabine camp, and thus excited compaſſion. Obtaining an audience of king Tatius, they ſupplicated a truce; and as ſoon as it was granted, the two kings had a conference, which terminated to the ſatisfaction of both parties: and it was followed by a treaty of union, which was confirmed by oath, and which conſiſted of the following articles: *viz.* that the two kings ſhould reſide, and jointly reign, at Rome:—that the city, deriving its name from Romulus, ſhould ſtill be called Rome, and the citizens be denominated Quirites, a name which till this time had been peculiar to the Sabines:—that the two nations ſhould become one;—and that the Sabines ſhould be made free of Rome, and enjoy all the privileges of Roman citizens. The two nations being thus united, Tatius, in imitation of Romulus, formed a council, compoſed of 100 ſenators of his own nation, who were ſtyled fathers, and enjoyed the ſame privileges with thoſe who had been inſtituted by the founder. The two councils aſſembled firſt at the houſes of their reſpective kings, but afterwards they met at the ſame place, which hence took the name of "Comitium." This was at the foot of the Palatine hill, over-againſt the Capitol: and not far from hence, the two kings built the temple of Vulcan, where they uſually met, to conſult the ſenate upon the moſt important affairs. After this union of the nations and ſenates, the Sabine women obtained honourable diſtinctions and privileges;—every one was commanded to give way to them; all immodeſt diſcourſes were prohibited in their preſence; no indecent objects were to be preſented to their ſight; in capital cauſes they were exempted from the juriſdiction of the ordinary judges; and their children were allowed to wear the "bulla aurea," or golden bull, hanging from their necks, and a particular robe, "prætexta," with a purple border, to diſtinguiſh them from the vulgar. The union of the two nations ſoon produced a mixture of manners, cuſtoms, and religion. The Sabines adopted the Roman gods, and the Romans worſhipped indiſcriminately thoſe of the Sabines. They unanimouſly inſtituted the feſtival, called "Matronalia," in memory of the peace concluded by the mediation of the women. Four thouſand of the inhabitants of Cameria, a city in the neighbourhood of Rome, were tranſplanted hither, and a colony ſent from hence to Cameria. Soon after the death of Tatius, which took place in the year U.C. 14, a plague, ſucceeded by a famine, broke out at Rome; and in this ſeaſon of diſtreſs, the Camerini made an attempt to ſhake off the yoke which had been impoſed upon them after the conqueſt of their city, and laid waſte the Roman territory. The war, however, terminated favourably, and Romulus procured the honour of a third triumph. Upon the death of Romulus, and during the ſucceeding interregnum, the Sabines contended that the next king ſhould be choſen out of their nation: but the contention was terminated by an agreement, that the Romans ſhould chooſe the king, but be obliged to elect a Sabine. Accordingly Numa, a Sabine philoſopher, was elected. Under the ſucceeding reigns of Tullus Hoſtilius, Ancus Martius, and Tarquinius Priſcus, the Romans and Sabines had frequent conteſts; but at length the latter were obliged, after ſeveral defeats, to ſubmit to Tarquin, who having treated them favourably, and taken poſſeſſion of their country, returned to Rome in triumph. Tarquin II., ſurnamed the Proud, made the whole Sabine nation tributary. Under the conſuls, the Sabines ſucceſſively invaded the Roman territories, and were repeatedly defeated; but it would exceed our limits to recite the various engagements which took place between the contending parties, and their diſaſtrous termination to the Sabines. At length the conqueſt of Samnium, which took place in the year U.C. 467, B.C. 281, was followed by the entire reduction of the Sabines, whoſe confederacy with Rome was as ancient as the city itſelf; but who, notwithſtanding their alliance with the republic, had joined the Samnites. (See Samnites.) It is, therefore, needleſs to purſue their hiſtory any farther. We may form ſome judgment of the political importance of the Sabines, if we advert to the character given of them by Cicero, at the cloſe of the Roman republic, who calls them "robur reipublicæ," the ſtrength or ſtay of the republic. Anc. Un. Hiſt. vol. ix. x.

SABINIANS, in *Ancient Hiſtory*. See Procalians.

SABINITES Lapis, in *Natural Hiſtory*, a name given to a ſtone in which are preſerved the leaves of the common ſavin.

SABINUS, in *Biography*, an Arian hiſtorian, who flouriſhed, according to Cave, in the year 425; but according to Tillemont, he wrote in the time of Valens, and, as Fabricius ſays, under Valens and Gratian. Socrates informs us, that he was biſhop of the Macedonians at Heraclea in Thrace; and he calls him a leader of the Macedonian ſect, and a Semi-Arian. He wrote a hiſtory of Councils, beginning with that at Nice. The title of his book ſeems to have been "A Collection of Synods, or of the Acts of Synods." He furniſhed ſome materials of which Socrates availed himſelf, though he often complains of his partiality. Lardner's Works, vol. iv.

Sabinus, Julius, a Gauliſh noble, remarkable for his adventures, was a native of the diſtrict of the Lingones, the modern Langres. He claimed to be a deſcendant of Julius Cæſar, who, when in Gaul, was ſaid to have had an intrigue with his grand-mother. In the tumultuous ſtate of the Roman empire, and during the conteſt between Veſpaſian and Vitellius, A.D. 70, he cauſed himſelf to be proclaimed Cæſar, and led a band of his countrymen into the territory of the Sequani. They were oppoſed and routed by theſe allies of the Romans, and Sabinus fled to a villa of his own, where he gave out that he meant to avoid public puniſhment by a voluntary death; he accordingly aſſembled his domeſties, and after thanking them for their faithful ſervices, he diſmiſſed them all, except two freedmen, on whom he could depend; theſe he entruſted with his ſecret. He then withdrew into a ſubterraneous cavern, the entrance of which was known only to them; they ſet fire to the houſe, which was totally conſumed, ſerving, as it was imagined, for a funeral pile to the remains of their maſter. Sabinus had a wife, named Eponina, the object of his tendereſt affection, but whom he did not entruſt with his plan. She believing that he was actually burnt to aſhes, paſſed three days without food, meaning to follow her huſband, when Sabinus ſent one of his freedmen to acquaint her with the fact. She now continued the appearance of grief, and in the ſecrecy of night paid him occaſional viſits in his cave. At length ſhe took him to her own reſidence, but the dread of diſcovery induced him to take refuge again in the cave, where Eponina viſited him almoſt daily for nine years. She even bore twins to her huſband, and nurſed them in her dark retreat. They were, however, diſcovered, dragged out of the place of their concealment, carried to Rome, and brought before Veſpaſian. Unmoved by the tears and entreaties of Eponina, and by the affecting narrative of the extraordinary adventures of the unfortunate pair, he ordered Sabinus to execution. His wife was now no longer the humble ſuppliant, ſhe nobly reproached the hard-hearted emperor with his cruelty, and bore her loſs with the ſame firmneſs which ſhe had ſhewn in performing her conjugal and maternal duties.

Sabinus, George, was born in the Marche of Brandenburg. His family name was Schalter, which, according to the cuſtom of the time, he changed for the above Latin appellation. At the age of 15 he was ſent to Wittenberg, where he lodged in the houſe of Melancthon, from whom he received daily inſtruction. By the advice of that learned man he cultivated his taſte for Latin poetry, and before he had attained to the age of manhood, he publiſhed a poem, entitled "Res Geſtæ Cæſarum Germanicorum," which gave him a high reputation among the ſcholars of Germany, and even procured him the patronage of ſeveral of its princes. He then viſited Italy, where he attracted the notice of Bembo, Contareni, and other men of eminence. After his return, he was nominated by the elector of Brandenburg profeſſor of belles-lettres at Frankfort on the Oder, and afterwards rector of the new univerſity of Konigſberg. He married the daughter of his preceptor Melancthon. The elector at length raiſed him to the high office of a counſellor, and employed him in various embaſſies and negociations, in which he diſplayed equal eloquence and political ſkill. In 1540 he was ennobled by the emperor Charles V. at the diet of Ratiſbon. He died in 1560. In his youth he had acquired irregular, not to ſay licentious, habits, but he was afterwards diſtinguiſhed for virtue and ſolid piety. His collection of Latin poems was firſt publiſhed at Leipſic in 1558, and an enlarged edition of them was given in 1597. He publiſhed ſome Latin letters, and an elementary work on the art of writing verſe in imitation of the ancients, which was long regarded as an excellent manual for young perſons in their ſtudies.

SABIO, in *Geography*, a town of Italy, in the department of the Mela; 13 miles N.N.E. of Breſcia.

SABIONCELLO, a town of Italy, in the department of the Mincio; 12 miles S.E. of Mantua.—Alſo, a peninſula of Dalmatia, in the ſtate of Raguſa, which runs a conſiderable way into the Adriatic, having the iſlands of Curzolo and Meleda on the S. and the iſland of Leſma on the N., all ſeparated by a narrow channel; 45 miles N.W. of Raguſa. N. lat. 43° 15'. E. long. 17° 40'.

SABIONETTA, a town of Italy, and capital of a ſmall principality, on the borders of Mantua and Cremona. The town has a ſtrong citadel, and the principality contains a few villages and towns; 19 miles S.S.W. of Mantua.

SABLAT, a town of Bohemia, in the circle of Prachatitz; 4 miles S.W. of Prachatitz.

SABLE, *Iſle de*, or *of Sand*, an iſland in the North Atlantic ocean, diſtinguiſhed, as the name imports, by milk-white hills of ſand in a ſugar-loaf form, intermixed with tranſparent ſtones, ſome of which riſe 146 feet above the ſea. The iſland is narrow, of the ſhape of a bow, about 30 miles in compaſs, having a ſand-bank at each end, and in the middle a lake about 15 miles in circuit, beſides other ponds of freſh water. It produces junipers, blue-berries, and cranberries, and ſome graſs and vetches, which ſerve to ſupport a few horſes, cows, and hogs. Its ſand-hills may be ſeen in clear weather at the diſtance of 24 miles; 90 miles S.E. of Cape Breton. N. lat. 44° 15'. W. long. 59° 50'. —Alſo, a ſmall iſland in the Indian ſea, E. of the iſland of Madagaſcar, diſcovered in 1722, by a French veſſel called La Diané. S. lat. 15° 55'. E. long. 54° 5'.—Alſo, a ſmall iſland, called "St. Paul," in the Atlantic ocean. S. lat. 0° 25'. W. long. 18° 31'.—Alſo, a river of Canada, which runs into St. John's lake, N. lat. 49° 38'. W. long. 72° 34'. —Alſo, a river of North America, which runs into lake Erie, N. lat. 42° 17'. W. long. 83°.—Alſo, two rivers, called "Great" and "Little," diſcharging themſelves from the W. ſide into lake Champlain. The former is not far from the Seranac, and is ſcarcely 60 yards wide; and it has ſeveral remarkable falls. The whole deſcent of the water is about 200 feet, in ſeveral pitches, the greateſt of which is 40 feet perpendicular, and at its foot the water is unfathomable. The ſtream is confined by high rocks on either ſide, and the banks are at leaſt as many feet high.

Sable, *Cape*, a cape on the S. coaſt of Nova Scotia. N. lat. 43° 32'. W. long. 65° 40'.—Alſo, the S. point of Eaſt Florida. N. lat. 24° 57'. W. long. 81° 49'.

Sable *Point*, lies on the W. ſide of Newfoundland. N. lat. 50° 24'. W. long. 57° 35'.

Sablé, a town of France, and principal place of a diſtrict, in the department of the Sarte, on the Sarte; 27 miles S.W. of Le Mans. N. lat. 47° 51'. W. long. 0° 15'.

Sable, in *Heraldry*, the black colour in the arms of gentlemen.

The name is borrowed from the little animal called *ſable*, which is of a black colour.

In thoſe of nobility, it is called *diamond;* and in the coats of ſovereign princes, *Saturn*.

It is expreſſed in engraving by perpendicular and horizontal hatches drawn acroſs each other.

Sable, in *Zoology*, the name of the animal whoſe fur is ſo much valued, and ſold under the ſame name. It is a creature of the weaſel kind, and called by authors MUSTELA *Zibellina*; which ſee.

SABLE *Mouſe*. See MOUSE, and MUS *Lemnus*.

SABLES, *Rivière aux*, in *Geography*, a river of North America, which runs into the S. of lake Huron, S. of the Highlands and E. to the part where the waters of that lake deſcend into the river St. Clair.

SABLES *d'Olonne, Les*, a town of France, and principal place of a diſtrict, in the department of the Vendée, having a ſmall harbour; 45 miles S. of Nantes. The place contains 5168, and the canton 8688 inhabitants, on a territory of 235 kiliometres, in 6 communes.

SABLESTAN, a mountainous and well-watered ſtate or diſtrict of the province of Seiſtan or Segeſtan in Perſia, on the frontiers of Hindooſtan; bounded on the N. and W. by Khoraſan, and on the E. by Candahar. Its capital is Boſt.

SABLOTOW, or ZABLOTOW, a town of Auſtrian Poland; 10 miles W. of Snyatin.

SABOE, a river of Africa, which runs into the Atlantic at Mahmora.—Alſo, a town on the W. coaſt of the iſland of Gilolo. N. lat. 1° 6′. E. long. 127° 21′.

SABOGIR, a ſmall iſland in the Red ſea. N. lat. 15° 10′. E. long. 42° 30′.

SABON, an iſland at the S. entrance of the ſtraits of Malacca, of a triangular figure, about 24 miles in circuit: ſeparated from Sumatra by a navigable channel, called the "Straits of Sabon." N. lat. 0° 42′. E. long. 103° 21′.

SABONGO, a town and capital of the iſland of Bachian.

SABOR, a river of Portugal, which runs into the Duero, 5 miles S.W. of Torre de Moncorvo.

SABOR *am Hammer*, a town of Sileſia, in the principality of Glogau; 24 miles N.N.W. of Gros Glogau. N. lat. 52°. E. long. 15° 46′.

SABOTA, a town of the duchy of Warſaw; 20 miles E. of Lenczicz.

SABRACÆ, in *Ancient Geography*, a people of India, on this ſide of the Ganges. Quintus Curtius repreſents them as a very powerful republican nation; and he reports, that they armed 60,000 foot and 6000 horſe, to oppoſe the progreſs of Alexander the Great; but that as ſoon as they perceived the Macedonians, they took them for an army of gods, and immediately ſubmitted.

SABRAN, in *Geography*, a town of Turkeſtan, on the Sir; 115 miles W. of Taraz.

SABRAO, an iſland in the Eaſt Indian ſea, about 100 miles in circumference, ſeparated from the E. coaſt of the iſland of Flores by a narrow channel, called the "Strait of Flores." S. lat. 8° 8′. E. long. 123° 20′.

SABRATA, or *Sabraata Colonia*, in *Ancient Geography*, a maritime town, and Roman colony, in Africa, in the country of Tripoli. Ptolemy.

SABRE, formed from the German *ſabel*, which ſignifies the ſame, of the Sclavonic *ſabla*, a *ſword*, or *hanger*, a kind of cutting ſword, or ſcimitar, having a very broad, heavy blade; thick at the back; and a little crooked towards the point.

The Turks are very expert in the uſe of the ſabre, which is the weapon they ordinarily wear by their ſide, &c. With this, it is ſaid, they can cleave a man quite down at a ſingle ſtroke. Damaſcus was formerly famous for its manufacture of ſabres. See DAMASCUS.

SABRES, in *Geography*, a town of France, in the department of the Landes, and chief place of a canton, in the diſtrict of Mont-de-Marſan; 18 miles N.N.E. of Tartas. The place contains 1808, and the canton 4856 inhabitants, on a territory of 590 kiliometres, in ſeven communes.

SABRIDGEWORTH. See SAWBRIDGEWORTH.

SABRON, a river of Syria, which riſes in mount Taurus, and runs into the lake of Antioch.

SABS, a town of Perſia, in the province of Irak; nine miles N.E. of Iſpahan.

SABU, or SABOE, a diſtrict of Africa, on the Gold Coaſt, about five miles in extent on the coaſt, and ten inland. It begins at the foot of mount Daniſtein, and ends within a mile or two of Mawri, or Mawerri, there joining the kingdom of Fantin; its boundaries being the ſea, and the countries of Atti and Fetu on the ſouth and weſt. Sabu produces an aſtoniſhing quantity of Indian corn, potatoes, yams, bananas, oranges, lemons, and other fruits; beſides palm oil, with which it ſupplies the country of Akra and Axim. The natives are reckoned the moſt induſtrious people on the Gold Coaſt, being perpetually employed in tilling the earth, fiſhing, or trading with the Europeans, or Akaneſe, a nation that exchanges gold for the fiſh and fruits of Sabu. The Sabuans have been always inferior in number to their enemies, chiefly the negroes of Atti and Akana; but they have amply compenſated this deficiency by the uſe of fire-arms, in which they were expert.

The city of Sabu, where the king reſides, is diſtant about two leagues from the coaſt; it is long and populous, ſituated N.E. of Mawri, which is a town half a mile from Congo, the property of the king of Sabu, and which chiefly trades in crude gold-duſt, by means of canoes, which arrive daily from all the ſea-port towns.

SABUGAL, a town of Portugal, in the province of Beira; ſix miles W. of Alfayates.

SABUGOSA, a town of Portugal, in the province of Beira; ſeven miles S.W. of Viſeu.

SA-BULAGH, q. ſ. the *Cold Stream*, a town and diſtrict of Perſia, in the province of Azerbijan or Aiderbeitzan, on the ſouthern ſhore of lake Urumea, 12 furſungs from Maraga, poſſeſſed by the Kurdiſh tribe of Meckree. The city of *Maraga* (which ſee) is probably the "Gamarga" of Diodorus; it is well built, has a ſpacious bazar, and is encompaſſed with a high wall. Its ſituation is pleaſant, in a low valley, at the extremity of a well cultivated plain, opening to the lake from which Maraga is diſtant nine or ten miles. The gardens and plantations are watered by canals, drawn from a ſmall river, over which are two bridges, erected 800 years ago. The town has about 15,000 inhabitants, of the Turkiſh tribe of Mukudum, under their chief Ahmed Khan. It has a glaſs manufactory, and a very handſome public bath, together with ſeveral curious old tombs, particularly that of Holaku, who reſided in this town, and built an obſervatory, on the top of an adjacent mountain, for his friend, Naſer a Deen, the moſt famous aſtronomer of his time, who here formed thoſe tables known by his name. Near the ſpot where the obſervatory ſtood, is a cave, hewn out of the rock, 41 feet long, and 16 broad; and near the cave are two elevated altars, not unlike the Priapus of the Indian temples. Kinneir's Memoir of the Perſian Empire, p. 156.

SABULOUS, in *Huſbandry*, a term applied to a gritty or ſandy kind of matter or ſoil in ſome caſes. See SOIL.

SABULY, in *Geography*, a town of Hindooſtan, in Guzerat; 20 miles S.S.E. of Chitpour.

SABUN, a river of Ruſſia, which runs into the Vich, N. lat. 61° 45′. E. long. 80° 14′.

SABUR, a diſtrict of Perſia, in the W. part of Chuſiſtan, or Kuziſtan.

SABURRÆ, GRITS, in *Natural Hiſtory*, the name of a genus of foſſils found in form of powder, and uſually confounded among the ſands, and called by the ſame name. Theſe are not compoſed, like the genuine ſands, of pure natural concretions, but are irregular particles, ſeeming to have been the fragments of other large bodies. They are not to be diſſolved or diſunited by water, but retain their figure in it, and do not cohere by means of it into a maſs. They are often very opaque, and in many of the ſpecies will ferment with acids, and are often fouled with heterogene particles, taking in the coarſer, ſtony, mineral, and metalline particles, and are, according to their colour, divided into ſeveral kinds. Theſe ſaburræ are white, yellow, and black, of different ſpecies, according to Hill. See GRIT-STONE.

SABUS, in *Ancient Geography*, a town of Aſia, in Armenia, ſituated on the bank of the Euphrates; on the route from Sacala to Melitené, between Teucila and Daſcoſa, according to the Itinerary of Antonine.

SABUTÆ TERRA, a country of Aſia, in the environs of the Indus.

SABY, in *Geography*, a town of Sweden, in the province of Smaland; 26 miles N.E. of Jonkoping.

SAC, a river of Africa, which riſes in the ſettlement of the Cape of Good Hope, and runs into Orange river, about 90 miles from its mouth.

SAC, or *Sak*, *Saca*, or *Sacha*, in *Law*, an ancient privilege which a lord of a manor claims in his court, of holding plea in cauſes of debate ariſing from his tenants and vaſſals, and of impoſing and levying fines and amercements touching the ſame.

The word is Saxon, *ſac*, and literally ſignifies *cauſe*, *conteſt*, &c.

Raſtal defines ſac by the forfeiture or amercement itſelf.

SAC, *Cul-de*. See CUL-*de-ſac*.

SACA, in *Zoology*, a ſpecies of beautiful wild cat, found in Madagaſcar.

SACABURGH, SACABERE, or *Sakebere*, in our *Old Writers*, one that is robbed, or by theft deprived of his money or goods, and puts in ſurety to proſecute the thief with freſh ſuit; according to Selden, in his Titles of Honour, and Briton, cap. 15. & 29, with whom agrees Bracton, (lib. iii. tract. 2. cap. 32. n. 2.) "Furtum vero manifeſtum eſt, ubi latro deprehenſus ſit ſeiſitus de aliquo latrocinio, ſcil. Honhabend et Backberend et inſecutus fuerit per aliquem cujus res illa fuerit, qui dicitur ſacaburh, &c."

The word may come from the Saxon *ſac* or *ſacca*, i. e. *lis*, *cauſa*, *proſecutio*, and *burh*, *pignus*, *hoc eſt furti ſymbolum*.

But ſir Edward Coke ſays, *ſacabere*, or *ſakebere*, is derived from *ſac*, and *bere*, that is, *he that did bear the bag*. 8 Inſt. fol. 69.

SACÆ, in *Ancient Geography*, a people who inhabited a territory S. of Babylon, between the Tigris and the Euphrates, or the country ſituated along the confines of theſe two rivers. (See the third book of the Cyropædia of Xenophon.) Theſe people were powerful enemies of the king of Aſſyria. Cyrus made an alliance with them in his enterpriſe againſt the Aſſyrians, and they furniſhed him with a body of 10,000 infantry and 2000 cavalry; and having become maſter of the garriſons by which the Aſſyrians defended their frontier, he transferred them to his new allies, who placed in them garriſons compoſed of Sacæ, Caduſians, and Hyrcanians, all of whom had an equal intereſt in preſerving them, for the defence of their own territories. The Sacæ were originally a nation of Scythians, eſtabliſhed on the other ſide of the river Jaxartes in the Greater Scythia; this appears from the teſtimony of all the ancient geographers; and the Perſians attributed the general name of Sacæ to the people, called, by the Greeks, Scythians. Theſe Sacæ occupied the greateſt part of Sogdiana, the country that lay between the Oxus and the Jaxartes. In proceſs of time they paſſed the Oxus, and eſtabliſhed themſelves in Margiana, and they were denominated Amyrgian Scythians, becauſe they inhabited the territory along the river Margus or Morgus, according to Herodotus. Strabo (l. xvi.) ſays, that the Parætaci had preſerved the name of Sacæ in the Elymaide territory, and that they had given it to a canton of Suſiana, named Sagapena. From the time of Strabo, they celebrated at Zela, a town of Pontus, a feaſt under the name of Sacæa, in commemoration of the advantage which the people of the country had obtained over the Sacæ.

SACÆ, a name alſo given to a people of Thrace, according to Suidas.

SACÆA, Σακαια, in *Antiquity*, a feaſt which the ancient Babylonians, and other Orientals, held annually in honour of the deity Anaitis.

The Sacæa were in the Eaſt what the Saturnalia were at Rome, *viz.* a feaſt for the ſlaves. One of the ceremonials of which was to chooſe a priſoner condemned to death, and allow him all the pleaſures and gratifications he would wiſh, before he were carried to execution.

SACAHUCHEN, in *Geography*, a town of Mexico, in the province of Yucatan, on the Champeton; 32 miles S. of Campechy.

SACALA, in *Ancient Geography*, a place of India, E. of the river Indus, and at a ſmall diſtance from its mouths. Arrian.

SACALBINA, a town of Aſia, in the Greater Armenia. Ptolemy.

SACAPENA, a country of Aſia, in the Greater Armenia. Ptol.

SACAROIDE, in *Mineralogy*, a term introduced from the French to denote the fine granular texture of ſome limeſtone reſembling that of loaf ſugar.

SACASINA, in *Ancient Geography*, a country on the confines of Armenia and Albania, extending as far as the river Cyrus. Strabo.

SACATECOLUCO, in *Geography*, a town of Mexico, in the province of Guatimala; 40 miles S.E. of St. Salvador.

SACATEPEC, a town of Mexico, in the province of Guatimala; 25 miles N.E. of Guatimala.

SACATIA CIVITAS, in *Ancient Geography*, a town and port of Arabia Felix, upon the Red ſea, in the country of Elizares.

SACATULA, in *Geography*. See ZACATULA.

SACBUT, SAQUEBUTE, a muſical inſtrument of the wind kind; being a kind of trumpet, though different from the common trumpet both in form and ſize.

The ſacbut is very fit for playing baſs; and is contrived ſo as to be drawn out or ſhortened, according to the gravity or acuteneſs of the tones. The Italians call it *trombone*, the Latins *tuba ductilis*.

It takes aſunder into four pieces, or branches; and hath frequently a wreath in the middle; which is the ſame tube only twiſted twice, or making two circles in the middle of the inſtrument; by which means, it is brought down one-fourth lower than its natural tone. It has alſo two pieces or branches on the inſide, which do not appear, except when drawn out by means of an iron bar, and which lengthen it to the degree requiſite to hit the tone required.

The ſacbut is uſually eight feet long, without being drawn out, or without reckoning the circles. When extended to its full length, it is uſually fifteen feet. The wreath is two feet nine inches in circumference. It ſerves as baſs in all concerts of wind muſic.

There are ſacbuts of different ſizes, ſerving to execute different parts; particularly a ſmall one, called by the Italians *trombone picciolo;* and by the Germans, *cleine alt poſaune*, proper for a counter-tenor. The part aſſigned it is uſually called *trombone primo*, or I°. There is another large kind, called *trombone maggiore*, which may ſerve as a tenor, its part is uſually called *trombone ſecondo*, or II° or 2°. There is a third ſtill bigger, called *trombone groſſo*; its part is called *trombone terzo*, or III° or 3°. Laſtly, there is another, which exceeds all the reſt, and which is much heard in the muſic, eſpecially in the baſs; its part is called *trombone quarto*, or IV° or 4to, or ſimply *trombone*. It has uſually the key of *F*, *ut*, *ſa*, on the fourth line; though frequently alſo on the fifth line from the top, on account of the gravity or depth of the ſounds.

SACCA, Xacca, or Sciacca, in *Geography*, a ſea-port town of Sicily, in the valley of Mazara, on the ſouth coaſt; anciently called "Thermæ Selinuntiæ," on account of ſome celebrated baths near the town, ſaid to have been contrived by Dædalus. Agathocles, the tyrant of Syracuſe, was the ſon of a potter in this town; and there are ſtill ingenious potters in this place, who manufacture beautiful vaſes; 27 miles S.E. of Mazara. N. lat. 37° 34′. E. long. 12° 53′.

SACCADE, in the *Manege*, a jerk or violent check which the rider gives his horſe, by drawing both the reins very ſuddenly; it is uſed when the horſe bears too heavy on the hand, or obſtinately arms himſelf.

The ſaccade is a kind of correction rarely to be uſed; for fear of ſpoiling the horſe's mouth.

SACCÆA, in *Ancient Geography*, a country of Arabia Petræa, E. of Batanea, and in the vicinity of Trachonitis. Ptolemy.

SACCAI, in *Geography*, a ſea-port of Japan, in the iſland of Niphon, which is large, populous, and well fortified; 70 miles S.W. of Meaco. N. lat. 34° 14′. E. long. 136° 40′.

SACCAR *el Prelii*, a town of Aſia, in the deſart of Jazira, on the Euphrates; 10 miles below El Deir.

SACCARA, a town of Egypt, famous for the pyramids in its vicinity; and for the mummies of men and animals that are preſerved in its vaſt catacombs.

SACCARII, among the Romans, were a company or fraternity of porters, who had the ſole privilege to carry all goods from the harbour to the warehouſes, none being allowed to employ their own ſlaves, and much leſs thoſe of others, for that purpoſe.

SACCATA, in *Commerce*, a land meaſure in Italy. At Florence a ſaccata of land contains 10 ſtajole, or 660 ſquare perches, anſwering to 5940 Engliſh ſquare yards, or 1 acre and 36 perches Engliſh. Accordingly, 8.15 ſaccata are equal to 10 Engliſh acres, and 81.48 ſtajole = 10 acres, and each ſtajole = 594 Engliſh ſquare yards.

SACCELIUM, in *Botany*, a genus publiſhed by Humboldt and Bonpland in the third faſciculus of their *Plantes équinoxiales*. The name is derived from *ſacculus*, a little bag; and alludes to the pouch-like appearance of the calyx. *De Theis.*

SACCER. See Saker.

SACCHARATE, Sub-saccharate, and *Super-ſaccharate* of lead, in *Chemiſtry*, terms introduced into the chemical nomenclature by Dr. Berzelius, profeſſor of chemiſtry at Stockholm, to denote combinations of ſugar with oxyd of lead, according to the different degrees of ſaturation.

SACCHARINE, a term applied to ſuch ſubſtances as contain ſugar. The matters in which this ſubſtance is abundant, are, in general, highly nutritious and uſeful in the fattening of animals. See Sugar.

This principle would ſeem to exiſt in many different ſtates in the different vegetable plants, roots, ſeeds, and other ſubſtances, that are made uſe of as the food of live-ſtock of different kinds.

Saccharine *Matter*, in *Agriculture*, the ſweet ſubſtance found in many ſorts of plants and fruits; and which is obtained from the ſugar-cane, for different economical purpoſes. It is a material that is found to afford much nouriſhment to different ſorts of live-ſtock, in its ſtate of combination in various kinds of vegetable productions, as thoſe plants that contain it in a large proportion, are moſtly found highly beneficial in that application, as is exemplified in the carrot, parſnip, beet, and many plants of the graſs kind. How far the proceſs of fattening animals may depend upon this property, has not yet been ſhewn by any ſatisfactory experiments, but it would ſeem to be in ſome meaſure connected with it.

Beſides, there is a ſaccharine proceſs taking place in the germination or ſprouting of ſeeds, by which ſaccharine matter is elaborated, and evolved, probably for the ſupport of the young plant until it has eſtabliſhed itſelf firmly in the ſoil by means of its roots. In the well known operation of malting there is alſo a conſiderable evolution of ſaccharine matter, which probably ſerves to give the liquor a body as well as ſtrength, and by that means renders it more nutritious. In many other caſes the formation of ſaccharine matter is likewiſe equally evident. It alſo exiſts in large proportions in the ſap juice of many vegetables.

Chemiſtry has ſhewn that different roots, ſeeds, and plants contain very different quantities of ſaccharine matter. In the trials of ſir Humphrey Davy, the common turnip was found to afford in a thouſand parts of the root, thirty-four of ſaccharine matter; the ſame number of parts in the root of the common orange carrot, produced ninety-five parts of ſaccharine matter; in the root of the *white* or Walcheren carrot, the ſame number of parts yielded ninety-eight of this matter, and the ſame proportion of parts in the root of the common parſnip, gave ninety of ſaccharine matter.

In grains of the barley and oat kind the quantity or proportion of ſaccharine matter is leſs, as from two to ſeven, or rather more; but the preſence of it in the former ſort of grain is probably the reaſon why it is the more ſuitable for the purpoſes of being converted into malt than any other ſort. The feeding property of the meal likewiſe probably depends upon this. Peas in a thouſand parts contain twenty-two of ſaccharine matter. Saccharine matter alſo exiſts in the nectaries and other parts of flowers in large proportions, as well as in moſt ſorts of fruits.

In plants of the graſs kind there has been aſcertained to be the largeſt quantity of ſaccharine matter, in proportion to the other conſtituent parts or matters, when the crops were mown or cut down about the period of their producing their flowers. In a hundred parts of the ſoluble matter of ſome, as the round-headed cock's-foot graſs, the above experimenter found, when taken from the graſs cut at this time, eighteen parts of ſaccharine matter; while the ſame quantity of the ſame matter taken from the ſeed crop, only afforded nine; and that of the ſame proportion of the after-math crop not more than eleven. See Dactylis.

This ſort of ſoluble matter, when taken from ſome kinds of graſſes, alſo affords it in remarkably large quantities, as that taken from the upright ſea Lyme graſs, in which the ſaccharine matter contained is more than one-third of its weight. And the ſame matter taken from the ſeed crop of the meadow cat's-tail graſs ſeems to yield more ſaccharine matter than any of the poa or feſtuca ſorts. See Elymus, and Phleum.

It is ſuggeſted as clear, from the chemical principles of the nature of germination, by the above writer, that in the proceſs of converting barley into malt, that operation ſhould be carried on no further than merely to produce the ſprouting or ſpiring of the radicle or root part of the grain, but be immediately checked or ſtopped as ſoon as this has made its appearance in a diſtinct manner; as, if it be puſhed forward to ſuch a degree as to occaſion the perfect developement of the radicle and the plume, a conſiderable quantity of ſaccharine matter will have been conſumed in producing their expanſion, and there will be leſs ſpirit formed in fermentation or produced in diſtillation. In ſhort, an inferior malt will be afforded. As this is a matter of ſome conſequence, he made an experiment in relation to it. He aſcertained, by means of the action of alcohol, the relative proportions of ſaccharine matter in two equal quantities of the ſame barley; in one of which the ſprouting had been carried ſo far as to protrude the radicle to nearly a quarter of an inch beyond the grain in moſt of the ſpecimens, and in the other of which it had been checked before the ſame part was advanced a line in length: the quantity of ſaccharine matter which was afforded by the latter, in proportion to that of the former, was nearly as ſix to five. This ſets the practice of malting in a clear point of view, and may be of advantage in the feeding of animals with malted ſubſtances. There is reaſon to believe that ſaccharine matter and that of ſtarch are capable of being changed or converted into each other, as in the caſes of the ripening of grain and the malting of barley and other matters. And the ſame thing probably takes place with other vegetable ſubſtances.

It is owing to the ſaccharine matter which is formed in the cotyledons of plants at the early period of their change into ſeed leaves, that they become ſo liable to be attacked and deſtroyed by inſects of different kinds. Hence they are, for the moſt part, apt to be injured in this way in the very young ſtages of their growth and appearance.

SACCHAROMETER, in the *Arts*, an inſtrument for aſcertaining the value of worts, and the ſtrength of different kinds of malt-liquor. The name ſignifies a meaſurer of ſweetneſs, and the inſtrument ſeems to depend on the following principles. The water employed by the brewer becomes more denſe, that is, of a greater ſpecific gravity, by the addition of materials extracted by, and diſſolved in it, and thence, in fact, incorporated with it: the operation of boiling, and its evaporation in the ſubſequent cooling, ſtill augment the ſpecific gravity, ſo that when it is ſubmitted to the action of fermentation, it is found to be denſer than at any other period. In paſſing through this natural operation, a remarkable operation takes place. The fluid, as ſoon as it begins to ferment, begins alſo to diminiſh in its denſity, and as the fermentation is more or leſs perfect, the fermentable matter, whoſe acceſſion has been traced by the increaſe of denſity, becomes more or leſs attenuated, and a ſpirituous fluid, of leſs denſity than water, is produced; ſo that when the liquor is again in a ſtate of reſt, it is ſo much ſpecifically lighter than it was before, as the action of fermentation has been capable of attenuating the liquid of its acquired denſity; and if the whole were affected in like manner, the liquor would become lighter, or of leſs ſpecific gravity than water, becauſe the quantity of ſpirit produced from the fermentable matter, and occupying its place, would diminiſh the denſity of the water in ſome ſort of proportion to that in which the latter was increaſed. Such is the account given of the ſaccharometer, and the theory of its action. On this ſubject it has been aſked if the ſaccharometer is an inſtrument which truly indicates the ſtrength of malt-liquor; and are the conſtituents of malt always diſſolved in the ſame proportions to each other? becauſe unleſs this be the caſe, there can be but little dependence placed upon it. To this it has been anſwered, by a very modern writer, that the ſaccharometer indicates correctly the ſpecific gravity of the wort before it begins to ferment. The value of the beer or ale, ſuppoſing the proceſs properly conducted, always depends upon the ſtrength, that is, the ſpecific gravity, becauſe the ſame ſubſtances are always taken up from good malt; and the real value of beer, to ſay nothing of the market price, is always proportional to the ſpecific gravity of the wort. See Hydrometer.

Another writer on the ſubject (ſee Dr. Thompſon's Annals) obſerves, that according to the common acceptation of the word *ſtrength*, in beer or ale, the ſaccharometer foretels it ſufficiently near the truth, for *ſimilar* proceſſes in the *ſame* brewhouſe, but it is by no means a ſure guide for any diſſimilarity in the mode of brewing, or of drawing the extract; for then the conſtituents of malt are *not* often diſſolved in the ſame proportion to each other, and in all caſes the extracts are ſuperior in value according to their priority. For, let the firſt, from the ſame parcel of malt, be reduced to the ſpecific gravity of the laſt, and an equal quantity of each will give a beer very different in quality.

The quantity of alcohol increaſes during fermentation, as the ſpecific gravity of the fermenting fluid diminiſhes, but in what ratio no correct experiments have as yet aſcertained. The term deſignated *ſtrength*, in malt liquors, depends, however, on many inexplicable circumſtances. It is nevertheleſs certain that the common ſaccharometer does not give the quantity of ſolid matter contained in a given quantity of wort, it ſhews merely the difference of weight between that and the ſame quantity of water.

SACCHARUM, in *Botany*, an ancient Latin word, ſaid to be derived from the Arabic *Sukkar*, which De Theis is pleaſed to give, as from Forſkall, *Soukar*, though the latter has it as above. The origin of this word is, however, to be found in the Hebrew; and hence the Greeks took their σακχαρ, σακχαρι, or σακχαρον, the Latins *Saccharum*, and modern nations Sucker, Sucre, and Sugar.—Linn. Gen. 32. Schreb. 45. Willd. Sp. Pl. v. 1. 320. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 1. 136. Sm. Prodr. Fl. Græc. Sibth. v. 1. 36. Brown Prodr. Nov. Holl. v. 1. 203. Purſh v. 1. 73. Juſſ. 30. Lamarck Illuſtr. t. 40. Dict. v. 1. 592. Gærtn. t. 82.—Claſs and order, *Triandria Digynia*. Nat. Ord. *Gramina*.

Gen. Ch. *Cal.* Glume ſingle-flowered, of two oblong-lanceolate, pointed, erect, concave, nearly equal, beardleſs valves, enveloped in long hairs from the baſe. *Corolla*, if preſent, ſhorter than the calyx, of two valves, the innermoſt very ſlender. Nectary of two very minute ſcales. Sometimes a rudiment of a ſecond flower is preſent. *Stam.* Filaments three, capillary, longer than the corolla; anthers oblong, pendulous. *Piſt.* Germen ſuperior, oblong; ſtyles two, capillary; ſtigmas cylindrical, feathery. *Peric.* none, the corolla inveſting the ſeed. *Seed* ſolitary, oblong, narrow, pointed.

Eſſ. Ch. Calyx of two valves, almoſt ſingle-flowered, ſurrounded externally with long woolly hairs. Corolla of two valves, or wanting.

1. S. *Teneriffæ*. Dwarf Teneriffe Sugar-cane. Linn. Suppl. 106. Willd. n. 1. Sm. Fl. Græc. Sibth. t. 53.—Panicle ſpreading, zigzag. Flower-ſtalks ſmooth. Calyx ovate, hairy all over. Corolla ſomewhat awned.—Gathered by Mr. Maſſon, in the iſland of Teneriffe. Dr. Sibthorp

met with it in Sicily only, on hills near Meſſina; it being one of thoſe plants which, having never been figured, and but little known, he admitted into his *Flora Græca*, though he did not gather them in Greece itſelf. *Root* perennial, woody, creeping, with long, ſmooth, ſimple, very tough fibres, and throwing up ſeveral upright *ſtems*, about a foot high, ſimple, leafy, round, ſmooth, occaſionally bent and decumbent at the baſe. *Leaves* ſpreading, linear-lanceolate, pointed, involute, rather rigid; downy above; ſtriated, and moſtly ſmooth, beneath; their ſheaths a little ſwelling, crowned with a *ſtipula* of numerous briſtly hairs. *Panicle* terminal, erect, two or three inches long, generally purpliſh. *Calyx* more or leſs purple. Outer valve of the *corolla*, in Dr. Sibthorp's ſpecimens, ſhort, abrupt, with a ſtraight, ſmooth, terminal awn, extending rather beyond the calyx; but this is wanting in thoſe of Maſſon. There appear ſome traces of a ſecond floret in the *calyx*, and Mr. Brown deſcribes ſuch an one, conſiſting of a ſolitary valve, without any organs of impregnation; but we cannot find this in every ſpecies.

2. S. *ſpontaneum*. Wild Sugar-cane. Linn. Mant. 183. Suppl. 106. (Kerpa; Rheede Malab. v. 12. 85. t. 46.)—Leaves convolute. Panicle looſe; with ſimple capillary ſpikes. Flowers in diſtant pairs; one of them ſtalked. Calyx naked, except at the very baſe.—Native of watery ſituations, on the coaſt of Malabar. The *ſtems* are twelve feet high, the thickneſs of a gooſe-quill, ſmooth, hollow, inveſted with the long ſmooth ſheaths of the long, narrow, taper-pointed, involute, ſmooth *leaves*. *Stipula* a ſhort abrupt membrane, clothed at the back with long hairs. *Panicle* large, and of a delicate ſilky aſpect, white, except the purple *anthers*. The hairs ſpring rather from the ſtalk, immediately below the *calyx*, than from any part of its ſurface; hence they bear the name of an *involucrum* in the Linnæan *Supplementum*. There are no *awns*.

3. S. *japonicum*. Japan Sugar-cane. Thunb. Tr. of Linn. Soc. v. 2. 328. Willd. n. 3. (S. polydactylon; Thunb. Jap. 42; excluding the ſynonym of Linnæus. Fuku, and Boo; Kæmpf. Am. Exot. 899. *Thunb.*)—“Leaves ſerrated. Panicle looſe; with very long, capillary, zigzag ſpikes. Partial flower-ſtalks unequal. Petals fringed; the outermoſt awned.”—Found by Thunberg about Nagaſaki, in Japan, flowering in July and September. He deſcribes two varieties, one ſix feet, the other (later flowering) only three, in height. *Stem* ſhrubby, ſimple, round, ſmooth. *Leaves* linear-ſword-ſhaped, ſerrated, ſmooth, with a thick rib. *Panicle* compoſed of ſimple, very ſlender, ſmooth ſpikes, each a ſpan long. *Flowers* all ſtalked, though unequally. Thunberg could find no *ſtamens* in the larger and earlier variety. *Stigmas* purple. This author deſcribes the *calyx* as ſmooth, without any mention of hairs around it; ſo that we cannot be quite certain of the genus, having ſeen no ſpecimen.

4. S. *officinarum*. Common Sugar-cane. Linn. Sp. Pl. 79. Willd. n. 4. Ait. n. 1. (Arundo ſaccharifera; Sloane Jam. v. 1. 108. t. 66. Rumph. Amboin. v. 5. 186. t. 74. f. 1.)—Leaves flat, entire, ſmooth. Panicle looſe; with long, ſimple, ſlightly zigzag, ſpikes. Flowers in pairs; one of them ſtalked. Calyx lanceolate, naked, except at the baſe. Corolla awned.—Native of both Indies, perhaps originally of Africa, in watery places. Its uſe, and extenſive cultivation, are ſufficiently known. Weſt Indians commonly aſſert that the ſugar-cane never bloſſoms; their obſervations being made on plants cultivated in a moſt luxuriant ſoil, where they increaſe much by root, and are uſually cut before they ſhoot up into flowers. A perfectly formed *panicle* of the Sugar-cane is one of the moſt elegant objects in nature, its innumerable, capillary, feathery branches ſpreading every way, more than a foot, and drooping at the ends. The *ſtem*, or cane, is one or two inches in diameter, with frequent joints. *Leaves* from one to three inches broad, ſmooth, entire. See Sugar.

5. S. *polyſtachyon*. Many-ſpiked Sugar-cane. Swartz Ind. Occ. 127. Willd. n. 5.—“Leaves entire, ſmooth. Spikes thread-ſhaped, very long, level-topped. Flowers rather diſtant, without awns.”—Gathered by Maſſon, in the iſland of St. Chriſtopher. *Stem* three or four feet high, round, jointed, ſmooth. *Leaves* ſheathing, broadiſh, keeled, linear, acute, entire, ſmooth; their ſheaths ſmooth, crowned with a hairy *ſtipula*. *Spikes* near a foot long, forming a level-topped *panicle*, rather lax, and ſomewhat whorled; the *ſtalk* of each thread-ſhaped, ſlightly zigzag. *Flowers* diſtant, ſmall, rather leaning one way, on very ſhort ſtalks. *Calyx* lanceolate, inveſted with ſhining white hairs, thrice its own length, ſpringing in tufts from the bottom of the ſides of its valves. *Corolla* thin, yellowiſh, without awns. Very like *S. japonicum*, (ſee n. 3.) but that has faſciculated *ſpikes*, and fringed glumes to the *corolla*, the outermoſt of which is awned. *Swartz.*

6. S. *giganteum*. Gigantic North American Sugar-cane. Purſh n. 1. (Erianthus ſaccharoides; Michaux Boreali-Amer. v. 1. 55. Anthoxanthum giganteum; Walt. Carol. 65. Andropogon culmo paniculato; Gron. Virg. ed. 1. 133. *Purſh.*)—“Sheaths of the leaves very woolly at the top. Panicle cloſe. Spikes thread-ſhaped. Calyx fringed with long hairs. Corolla awned.”—In low places, generally among rocks, from Virginia to Florida, but rare; flowering in July and Auguſt. *Purſh.* From five to nine feet high, with a perennial *root*. *Panicles* very large and handſome, like *S. officinarum*, but more denſe.

7. S. *breviberbe*. Short-bearded Sugar-cane. Purſh n. 2. (Erianthus brevibarbis; Michaux Boreali-Amer. v. 1. 55.)—“Sheaths of the leaves ſomewhat villous at the top. Panicle cloſe. Calyx very acute, ſmooth at the margin, longer than its ſurrounding hairs.”—On dry hills, in the mountains of Virginia, Tenaſſee, Carolina, &c. flowering in July. Perennial. Not above two feet high. *Purſh.* We preſume the wool, or hairineſs, at the top of the ſheaths of the *leaves* of this ſpecies and the laſt, ſtands in the place of a membranous *ſtipula*, but we have ſeen no ſpecimens of theſe two plants.

8. S. *arundinaceum*. Reed-like Sugar-cane. Retz. Obſ. faſc. 4. 14. Willd. n. 6.—Leaves ſharply ſerrated; their ſheaths denſely bearded at the top. Panicle cloſe, whorled; its branches capillary, ſubdivided. Flowers in pairs; one of them ſtalked. Calyx hairy all over.—Native of the Eaſt Indies. Cultivated about hedges, and the borders of ponds, at Tranquebar, from whence we have received ſpecimens. The natives call it *Pee-Carumbo*, or Devil's Sugar. The reedy ſtems are uſed frequently for the firſt layer of thatch, as being more durable than any thing elſe of the kind; but, according to Koenig, they afford too much accommodation for ſerpents, lizards, and other vermin. Theſe *ſtems* are often ten feet in height, thick, leafy, partly hollow. *Leaves* whorled, above an inch wide, ſmooth, with a ſtrong mid-rib, and many fine lateral ribs; the edges finely ſerrated, with extremely ſharp teeth. *Panicle* erect, denſe, two feet long, of innumerable whorled branches, ſubdivided into very ſlender lax ſpikes. *Calyx* lanceolate, clothed with long ſlender hairs, ſcarcely more abundant at the baſe than elſewhere. Retzius deſcribes the *corolla* as often of three valves; one of them, we preſume, being the rudiment of a ſecond floret, as in *S. Teneriffæ*. *Stigmas* blackiſh.

9. S. *benghalenſe*. Bengal Sugar-cane. Retz. Obſ. faſc. 5. 16. Willd. n. 7.—“Panicle cloſe; its branches divided. Flowers in pairs, ſeſſile and ſtalked, all perfect. Corolla

of only two valves."—Native of Bengal. This is ſaid by Retzius to accord with the laſt ſo exactly in ſize, and other reſpects, that it might readily be taken for the ſame, differing only in having all the *flowers*, that he examined, furniſhed with *ſtamens* and *piſtils*; the *corolla* of two valves only; and the *ſtigmas* of a browniſh-yellow. He doubts whether theſe characters be ſufficient for a ſpecific diſtinction. If we may judge without ſeeing the plant, and comparing its *leaves*, ſerratures, ſheaths, &c. we ſhould, without the leaſt ſcruple, conſider it as a variety. The reader will obſerve that our ſpecific character, being copied from Retzius, is deficient in ſome points of compariſon with other ſpecies, which, without ſpecimens, we dare not ſupply.

10. S. *repens*. Creeping Sugar-cane. Willd. n. 8.—"Panicle ſpreading. Flowers ſeſſile, in pairs. Corolla awned. Leaves flat, with hairy ſheaths."—Native of Guinea.—*Stem* a foot high, ſimple, aſcending. *Leaves* ſmooth, ſhort, graſſy; their ſheaths fringed with whitiſh hairs. *Panicle* the ſize of *Holcus lanatus*; its branches clothed with ſcattered white hairs. *Flowers* encompaſſed with hairs of a brilliant white. *Calyx* ſmooth. *Willdenow*.

11. S. *Ravennæ*. Ravenna Sugar-cane. Linn. Syſt. Veg. ed. 13. 88. Willd. n. 9. Desfont. Atlant. v. 1. 53. Sm. Fl. Græc. Sibth. t. 52. (Andropogon Ravennæ; Linn. Sp. Pl. 1481. Mant. 2. 500. Canna piena delle valli di Ravenna; Zanon. Iſt. 64. t. 24. f. 2.)—Leaves rough-edged, linear; bearded at the baſe. Panicle cloſe, with denſe, repeatedly compound, cylindrical ſpikes. Flower-ſtalks woolly. Calyx naked upwards. Corolla awned.—Obſerved by Zannoni in the neighbourhood of Ravenna. Dr. Sibthorp met with it on the ſhores of the Euxine, near Fanar, as well as in the Peloponneſus, in great plenty, and judged it to be the Καλαμος συριγγιας of Dioſcorides. The *ſtems* are four feet high, erect, ſimple, leafy, ſmooth, full of white pith. *Leaves* narrow, very long, with a broad firm mid-rib; their edges not ſerrated, but rough with minute prickles, as well as the fine ribs on both ſides; the baſe clothed with denſe ſilky rigid hairs, for an inch or more, on the upper ſide, above the ribbed and hairy ſheath. *Panicle* large, erect, of a beautiful ſilky or ſilvery aſpect, compoſed of innumerable compound cylindrical branches, much thicker than in any of the foregoing that we have ſeen. Theſe *branches* are angular and ſmooth; but the *flower-ſtalks* in which they terminate are hairy, or woolly. *Flowers* alternate, ſtalked, erect. *Calyx* taper-pointed, clothed with long hairs at the baſe, and half-way up. *Florets* ſolitary, all perfect. *Corolla* of two valves; the outermoſt ending in a rough awn.

12. S. *irritans*. Pricking Sugar-cane. Brown. n. 1.—"Spikes digitate; their ſtalks bearded and ſilky. Calyx downy; one of its valves awned. Awn of the corolla elongated, bearded in the lower part. Leaves ſomewhat involute, with ſmooth ſheaths. Joints of the ſtem naked."—Gathered by Mr. Brown in the tropical part of New Holland.

13. S. *fulvum*. Tawny Sugar-cane. Brown. n. 2.—"Spikes digitate; their ſtalks bearded and ſilky. Calyx villous, without awns. Awn of the corolla naked. Leaves flat; involute at the extremity, with ſmooth ſheaths. Joints of the ſtem bearded.—From the ſame country as the laſt. We have ſeen no ſpecimens of either.

14. S. *jaculatorium*. Dart Sugar-cane. Loureir. Cochinch. 53.—"Stem hollow, ſimple. Leaves very long, keeled. Panicle ſpiked, oblong."—Native of Cochinchina, where it ſerves to make darts. The *ſtem* is ten feet high, perennial, ſtraight, round, hollow, perfectly ſimple, with diſtant knots, or joints. *Leaves* awl-ſhaped, very long, ſmooth, with a large dorſal rib, or keel. *Panicle* terminal, oblong, compoſed of long ſpikes. Hairs of the *calyx* ſtraight, very ſlender, rather longer than the *corolla*, which conſiſts of two equal, beardleſs valves. Such is Loureiro's account, which we have no means of verifying.

15. S. *cylindricum*. Cylindrical-ſpiked Sugar-cane. Lamarck Dict. v. 1. 594. Illuſtr. t. 40. f. 2. Willd. n. 10. Sm. Fl. Græc. Sibth. t. 54. (Lagurus cylindricus; Linn. Sp. Pl. 120. Imperata arundinacea; Cyrill. Ic. faſc. 2. t. 11. Brown Prodr. v. 1. 204. Gramen pratenſe alopecurum, ſericeâ paniculâ; Barrel. Ic. t. 11.)—Panicle ſpiked, cylindrical, cloſe. Flower-ſtalks ſmooth. Calyx lanceolate, hairy all over. Corolla without awns. Stamens two.—Native of moiſt ſituations in the ſouth of Europe and north of Africa; found alſo by Mr. Brown in every part of New Holland, that he viſited. The *ſtems* form tufts, like thoſe of *Arundo arenaria*, and are two or three feet high, erect, ſtraight, ſimple, leafy, round and ſmooth, with two or three knots. *Leaves* narrow, linear, ſtraight, pointed, channelled, bluntly keeled, rough-edged, involute in drying; their ſheaths long and cloſe. *Stipula* ſhort, crowned with many briſtly hairs at its back. *Panicle* about a ſpan long, erect, cloſe, even and cylindrical, of a beautiful ſilvery aſpect; its branches very ſhort, ſmooth, as well as the flower-ſtalks. *Calyx* lanceolate, clothed all over with long ſilky hairs. *Corolla* of two thin pellucid valves, ſhorter than the calyx; one broader than the other; without any awn. *Stamens* two, as far as we can diſcover, though Mr. Ferdinand Bauer, uſually ſo accurate, has repreſented three in the *Flora Græca*. Lamarck has done the ſame. *Styles* very ſhort, with long, ſlender, downy *ſtigmas*. *Seed* long and narrow, gibbous at one ſide.

Mr. Brown adopts Cyrillo's genus of *Imperata*, becauſe of there being only two *ſtamens*, and no nectariferous *ſcales*. He deſcribes an acceſſory *glume*, or rudiment of a neuter floret, which we have not found, at the back of the broadeſt valve of the corolla. The habit of the ſpike certainly ſtrengthens the idea of its being a diſtinct genus from *Saccharum*.

16. S. *paniceum*. Panic Sugar-cane. Lamarck Dict. v. 1. 595. Illuſtr. t. 40. f. 3. (Perotis polyſtachya; Willd. Sp. Pl. v. 1. 324.)—"Panicle ſpiked, cylindrical, cloſe. Calyx hairy at the baſe. Corolla awned. Stamen ſolitary."—Gathered by Sonnerat in the Eaſt Indies. Mr. Brown, who appears to have examined the plant, ſays it is very nearly related to the laſt; but differs in having *awns*, no inner valve to the perfect *floret*, and only one *ſtamen*. Lamarck's figure and deſcription therefore are by no means correct, as to the parts of fructification. With regard to the reſt of the plant, the *ſtem* is only ſeven or eight inches high, very ſlender, ſmooth, leafy, branched, and jointed. *Leaves* an inch long, narrow, ſharp, roughiſh beneath and at the edges; the *ſtipulas* bearded. *Panicles* cylindrical, an inch in length.

Mr. Brown's genus *Dimeria*, Prodr. Nov. Holl. v. 1. 204, appears nearly akin to theſe two laſt-deſcribed ſpecies, and differs from *Saccharum* chiefly in having all the flowers ſeſſile. One ſpecies is found in the tropical regions of New Holland, another in the Eaſt Indies. We have ſeen neither, and therefore cannot preſume to give an opinion.

17. S. *ſpicatum*. Spiked Sugar-cane. Linn. Sp. Pl. ed. 1. 54, excluding the ſynonym of Rheede. Burm. Ind. 23. t. 9. f. 3. (Gramen indicum alopecuroides holoſericeum majus, ſpicâ longâ pappeſcente; Pluk. Almag. 177. t. 92. f. 5.)—Panicle ſpiked, linear, very cloſe. Flower-ſtalks ſmooth. Calyx lanceolate, ribbed, moſt hairy at the baſe. Corolla without awns. Stem branched. Leaves lanceolate, flat.—Native of the Eaſt Indies. The *roots* are creeping and knotty. *Stem* from ſix to twelve inches high;

branched, and moſt leafy, at the baſe. *Leaves* nearly as tall as the ſtem, lanceolate, flat, ribbed, acute, almoſt ſmooth. *Stipulas* bearded. *Panicle* erect, very cloſe and ſlender. *Calyx* taper-pointed, clothed at the baſe very denſely, and more looſely all the way up, with long ſilky hairs, as in *S. cylindricum*, but the latter has them moſt numerous and crowded at the ſummit of each valve.

18. S. *Thunbergii*. Thunbergian Sugar-cane. Retz. Obſ. faſc. 5. 17. Willd. n. 11.—" Panicle ſpiked, cylindrical. Corolla without awns. Knots of the ſtem ſmooth. Leaves convolute. Stamens two."—Native of the Eaſt Indies; given to Retzius by Thunberg. A taller and more ſlender graſs than *S. Koenigii* of Retzius, which is believed to be our *cylindricum*, n. 15. The *panicle* is more contracted, and twice as long; the hairs of the *calyx* more of a yellowiſh hue. *Flowers* twice as large, with two *ſtamens*, and two *ſtyles*. *Leaves* rigid. *Corolla* half the ſize of the calyx, thin, white, and ſhining. *Retzius.*

We have two Cape ſpecimens from Thunberg, which are probably *S. ſpicatum* of his *Prodromus*, p. 20, but do not preciſely accord with that of Linnæus, having thicker ſhorter *panicles*, or rather *ſpikes*, with longer hair, and leſs bearded *ſtipulas*. The knots of their *ſtems* are hairy, nor do they otherwiſe agree with the above account of *S. Thunbergii*. We are not indeed ſatisfied of their being one and the ſame ſpecies. The whole genus wants to be accurately ſtudied, with better materials than we can at preſent command.

Saccharum, in *Gardening*, contains plants of the tender, perennial, reed kind, of which the ſpecies cultivated are, the common ſugar-cane (S. officinarum); and the ſpiked ſugar-cane (S. ſpicatum).

There are three remarkable varieties of the firſt ſpecies mentioned by Loureiro, differing in the culm, not in the flower; the white ſugar-cane, with the culm long, white, of a middling ſize, very ſweet, the knots diſtant; the red ſugar-cane, with the culm ſhort, thicker, red, very juicy, the knots approximate; the elephantine ſugar-cane, with the culm very thick, red, long, leſs ſweet, the knots approximate: and there are, probably, others in a plant ſo much cultivated.

Each of theſe ſorts is perennial in the root; the ſtalks riſing in numbers from the ſeparate roots; they reſemble in their growth the common reed of the marſhes, only they are conſiderably larger, and inſtead of being hollow like theſe plants, they are filled with a whitiſh coloured pith, containing the ſweet juice, or liquid matter, which renders them ſo extremely valuable. The ſtems are ſtrong but brittle, commonly growing to perfection in from ſix to twelve or fourteen months, when they become of a pale yellowiſh colour.

But it is only the firſt ſort which is cultivated with a view to ſugar, for which purpoſe prodigious quantities are raiſed and provided in the Weſt India iſlands, and other hot countries, which are there planted out in the fields and other places, in rows four or five feet apart, and ſoon ſhoot up into ſtems as above, and become fit for cutting over for uſe. When cut they are taken to a mill and ſqueezed between iron-caſed rollers, in order to expreſs the juice from them, which is then properly boiled, refined, and formed into a due conſiſtence for becoming ſugar. See Sugar.

From the ſkimmings of the ſugar in the different boilings, and the molaſſes, which are the laſt drainings of the ſugar, when mixed with a proper proportion of water, and the whole fermented, is drawn or extracted the ſpirituous liquor called rum, which abounds with a fine oily material, that is ſuppoſed by ſome to conſtitute the great excellence and ſuperiority of this ſpirit in compariſon to that of brandy. See Rum.

Method of Culture.—Theſe plants are capable of being increaſed by ſlips or ſuckers from the root, and by cuttings of the main ſtalks; but here generally by ſlips from the bottom; or any ſide-ſhoots ariſing from the ſtems near the root, having earth raiſed about the bottom part, will ſoon emit fibres, and be fit for ſeparation; the ſlips or offsets may be taken off at any ſeaſon in which they appear fit for the purpoſe, being careful to detach them with ſome fibres to each, and plant them ſeparately in pots of rich earth, plunging them in the bark-bed, watering and occaſionally ſhading them till they have got root, retaining them always in the bark-bed in the ſtove, treating them as other exotics of that ſort.

Theſe afford variety among other ſtove plants. They can only be grown in this manner in this country.

Saccharum *Saturni*, *ſugar of lead*, in the *Materia Medica*, a name given to the ſuperacetate of lead of the London pharmacopeia, or acetite of lead of that of Edinburgh, or acetate of lead of that of Dublin. The ſuperacetate of lead, " plumbi ſuperacetas," is prepared, according to the Lond. Phar., by boiling a pound of carbonate of lead in 1½ gallon of acetic acid (diſtilled vinegar) until this is ſaturated, and then ſtraining the ſolution through paper; and having evaporated the water until a pellicle begins to appear upon the ſurface, ſetting it aſide that cryſtals may form; then pouring off the fluid, and drying the cryſtals upon bibulous paper. The acetite of lead, " acetis plumbi," is prepared by the directions of the Edinb. Pharm. in the following manner. Take of white oxyd of lead, any quantity. Put it into a cucurbit, and pour over it ten times its weight of diſtilled acetous acid. Let the mixture ſtand upon a warm ſand-bath until the acid becomes ſweet; then pouring this off, add freſh portions of acid ſucceſſively, until no more ſweetneſs is communicated. Evaporate all the fluid, freed from impurities, in a glaſs veſſel, to the conſiſtence of thin honey, and ſet it aſide in a cold place that cryſtals may form, which are to be dried in the ſhade. Evaporate again the reſiduary liquor, that new cryſtals may be obtained; and repeat the operation until no more are formed. The acetate of lead, " acetas plumbi," of the Dubl. Pharm. is formed by taking any quantity of ſubacetate of lead, called ceruſſe, and ten times its weight of diſtilled vinegar; digeſting them in a glaſs veſſel until the vinegar becomes ſweet; and having poured this off, adding more, until it ceaſes to become ſweet; filtering the ſolution, and cryſtallizing by alternate ſlow evaporation and cooling; and laſtly, drying the cryſtals in the ſhade.

In theſe ſeveral proceſſes the acetic acid of the diſtilled vinegar unites with the oxyd of lead of the carbonate; and by the ſubſequent evaporations the ſalt cryſtallizes with an exceſs of acid, as in the form of a ſuperacetate. But the expence of the proceſs, and the difficulty of obtaining the white lead perfectly free from any adulteration of carbonate of lime (whitening), which is not unfrequent, have deterred the apothecary from undertaking the preparation of this ſalt; and therefore the ſuperacetate commonly found in the ſhops is the ſalt which is manufactured on a large ſcale for the uſe of the calico-printers, purified. In Holland it is prepared in the following manner. Sheets of lead, coiled up, are put into pots, in which they are half immerſed in diſtilled vinegar, and digeſted a ſufficient time. The part that is not immerſed is ſoon covered with an efflореſcence of ceruſſe; after which it is immerſed in the vinegar; and the part which was before immerſed is now brought up to be converted into ceruſſe as before, when the plate is again turned; and this is repeated two or three times a-day, until the vinegar becomes milky.

This ſolution is next boiled in tinned veſſels down to about one-third of the original quantity, then ſtrained, and the ſalt cryſtallized by ſlow cooling. The cryſtals obtained by a ſecond evaporation of the mother-water are browner, and deliqueſcent; and as theſe are generally mixed with the others, the whole requires to be again diſſolved in rain or diſtilled water, and re-cryſtallized, before they are fit for medicinal purpoſes. See Ceruse.

This ſalt, when pure, is inodorous; its taſte is ſweet and aſtringent; and it cryſtallizes in white, gloſſy, acicular, flat, four-ſided priſms, terminated by dihedral ſummits, which are generally aggregated into irregular maſſes that have the appearance of lumps of ſugar. From this circumſtance, and from its ſweetiſh taſte, it derives one of its trivial names, *viz.* ſugar of lead. Its ſpecific gravity is 2.35. Superacetate of lead ſlightly effloreſces, is ſoluble in 25 parts of diſtilled water at 60°; and after ſtanding ſome time, a ſmall portion of white powder is depoſited. It is alſo ſoluble in alcohol. In pump or hard water it is inſtantly decompoſed, forming a milky ſolution, and a copious precipitate falls. It reddens the vegetable blues; and is decompoſed by the alkalis and their carbonates, moſt of the acids, and neutral ſalts, lime, and magneſia; but it does not affect a ſolution of gum. According to the analyſis of Thenard, the conſtituents of 100 parts are 58 of oxyd of lead, 26 of acid, and 16 of water. Dr. Boſtock (Nicholſon's Journal, vol. ii.) gives the following relation between a ſaturated ſolution of this ſalt, and the ſolution of ſubacetate of lead. Of the former, oxyd 16.8, acid 7.5, water 75.7; and of the latter, oxyd 23.1, acid 5, water 71.9. The conſtituent parts of the two ſalts in a cryſtallized ſtate, according to Mr. Thomſon, are as follow; of the ſuperacetate, oxyd 58, acid 26, water 16 = 100: of the acetate, oxyd 78, acid 17, water 5 = 100. See *Extract of* Lead.

Superacetate of lead, with regard to its medical properties, when taken internally, is a very powerful aſtringent and ſedative: great caution ſhould be uſed in adminiſtering it, and it is admiſſible only in caſes of very urgent danger, as in violent pulmonary and inteſtinal hæmorrhages. Opium, combined with it, prevents, in a conſiderable degree, the deleterious effects which ſalts of lead are apt to produce when taken into the ſtomach; but even thus combined, the ſmalleſt doſe, in certain habits, produces ſerious miſchief. Diſſolved in a large proportion of water, it forms an excellent collyrium in ophthalmia; and leſs diluted, its ſolution is in common uſe as an external application in ſuperficial inflammation. To the objections that have been urged againſt the long continued external uſe of the preparations of lead, it may be replied, that the daily extenſive employment of them in this form, without injury, affords a ſufficient proof, that though they may have occaſionally done harm, this is rather to be attributed to ſome peculiar ſtate of habit than to the nature of the remedy.

The doſe of ſuperacetate of lead, internally exhibited, ſhould not exceed gr. ſs. given every ſix or eight hours. It may be made into a pill with crumb of bread, and a portion of opium, according to the circumſtances of the caſe. As a collyrium or lotion, the proportions may be from gr. x to ℈j of the ſalt in f℥viij of diſtilled water.

The officinal preparations are "Ceratum plumbi ſuperacetatis," L. E. D. "Acidum acetoſum forte," E. "Solutio acetitis zinci," E. The "cerate" is prepared, according to the Lond. Pharm. by taking of the powder of ſuperacetate of lead two drachms, two ounces of white wax, and half a pint of olive oil; melting the wax in ſeven fluid-ounces of the oil; then adding gradually the ſuperacetate of lead ſeparately rubbed down with the remaining oil, and ſtirring with a wooden ſpatula, until they be thoroughly incorporated. This is an excellent cooling cerate for burns, excoriations, and other inflamed ſores. The "compound cerate" is formed by taking two fluid-ounces and a half of ſolution of acetate of lead, four ounces of yellow wax, nine fluid-ounces of olive oil, and half a drachm of camphor. Melt the wax and mix it with eight fluid-ounces of the oil; then remove them from the fire, and as ſoon as they begin to thicken, add gradually the ſolution of acetate of lead, and ſtir aſſiduouſly with a wooden ſpatula till they be cold. Finally, mix with theſe the camphor diſſolved in the remainder of the oil. This compoſition is ſimilar to that which was recommended by Goulard, and which has been long known under the name of "Goulard's cerate." (See *Extract of* Lead.) It is applicable to the ſame purpoſes as the preceding.

The "acidum acetoſum forte," or ſtrong acetous acid, of the Edinb. Pharm. is prepared by rubbing together one pound of dried ſulphate of iron and ten ounces of acetite (ſuperacetate) of lead; then putting them into a retort, and diſtilling in a ſand-bath with a moderate heat, as long as any acid comes over. See Acetic *Acid*, and Acetous *Acid*.

For the ſolution of "acetite of zinc," ſee Zinc. Lond. Pharm. Thomſon's Diſpenſatory.

Saccharum *Lactis*. See Milk.

SACCHETTI, Franco, in *Biography*, a poet and noveliſt, was born at Florence in or about the year 1335, of the noble family of the *Benci*. After paſſing his youth in commercial affairs, he roſe by different gradations of office in his republic, till at length he was appointed commander of the Florentine troops in Romagna. During his travels and employments he became acquainted with ſeveral men of high rank, and with ſome petty ſovereigns in the Italian ſtates, with whom he held an epiſtolary correſpondence, and who greatly eſteemed him on account of his extenſive knowledge and various accompliſhments. He ſpent the latter years of his life at Florence, amuſing himſelf with literary compoſition. He died ſome time after the year 1400, and left behind him the reputation of being one of the principal Italian poets of his time. He was author of a great number of pieces in different kinds of verſe, of which there have been printed only ſome lines following the Bella Mano of Giuſto de Conti. He alſo collected, from the ſtories which he had heard, and the adventures he had witneſſed, a number of tales, or "Novelles," of which 258 remaining in MS. in the Laurentian library, were printed at Florence in 1725. Theſe, though not in ſuch high repute as thoſe of Boccaccio, are pleaſing from their natural and ſimple ſtyle of narration. They are reckoned as of ſtandard authority with regard to purity of language.

SACCHI, Andrea. This celebrated artiſt was born at Rome in 1594. He was the ſon of Benedetto, a painter of little note, by whom he was inſtructed in the rudiments of deſign; but he had afterwards the advantage of ſtudying under Franceſco Albano, of whom he was the moſt diſtinguiſhed diſciple. On leaving the ſchool of that painter, he improved his ſtyle, by an attentive ſtudy of the works of Raffaelle, Polidoro da Caravaggio, and the antique marbles, by which means he acquired a correctneſs and ſeverity of deſign, for which his works are remarkable. He was favoured with the protection of the cardinal Barberini, who employed him in ornamenting his palace with ſeveral allegorical works, painted in freſco, which were greatly admired. Several of the public edifices at Rome are embelliſhed with his works, ſome of which have been ranked among the moſt admired productions of art in that capital. Such are his celebrated picture of the death of St. Anne, in the church of S. Carlo à Catinari; the angel appearing to St. Joſeph, the principal altar-piece in S. Guiſeppe à Capo le Caſe; and his St. Andrea, in the Quirinal. But his moſt diſtinguiſhed performance is his famous picture of S. Romualdo, formerly in the church dedicated to that ſaint, now in the gallery of the Louvre. This admirable production was conſidered one of the four fineſt pictures at Rome. The compoſition is extremely ſimple; it repreſents the ſaint ſeated in a ſolitary valley of the Apennines, ſurrounded by ſome of his order, explaining to them his reaſons for retiring from the world. Every thing in the picture breathes tranquillity and repoſe. The expreſſion in the head of St. Romualdo is admirable, as is the attention with which the monks are liſtening to his diſcourſe. The ſurpriſing effect that he has given to a group of ſix figures, all habited in white drapery, without the appearance of monotony, is the wonder and admiration of the artiſt.

The admirers of Andrea Sacchi regard him as the greateſt colouriſt the Roman ſchool can boaſt, and he ranked among the moſt correct of its deſigners.

Though profound in the theory of the art, he was ſlow and deliberate in his works, and he was accuſtomed to remark, that the fame of a painter depended more upon the quality than the quantity of his productions. To this we may attribute the paucity of his pictures, which are in general but ſlightly finiſhed. His compoſitions are not often abundant in figures, but they are ſufficiently numerous to give a juſt repreſentation of his ſubjects. Mengs eſtimates his talents nearly on a level with thoſe of Pietro da Cortona, which, without raiſing him to the elevation of the great luminaries of the art, aſſigns him an honourable ſtation among its able profeſſors. He died at Rome in 1661, aged 62. Bryan's Dictionary of Painters.

Sacchi, Padre Giovenale, of Milan, a learned and ſcientific writer on the theory of muſic, publiſhed in 1761, a tract entitled "Del numero e delle miſure del corde muſiche e loro corriſpondenze;" "Of the length, thickneſs, and tenſion of muſical ſtrings, and their relation." In 1770, "III Diſſertationi: dell diviſione del tempo in muſica;" "Of the diviſion of time in muſic." In 1780, "Delle quinte ſucceſſive nel contrappunto, e delle rigole degl' accompagnamenti;" "Of the ſucceſſion of fifths in counterpoint, and of the rules of accompaniment."

As to this author's Diſſertation, publiſhed in 1761, on the ratio of muſical ſtrings, he is of opinion that the ſcale of our minor mode is vicious, in making the 2d of the key a whole tone, whereas it ſhould only be a ſemi-tone, *all' antica;* ſo that the gamut or ſcale of A minor ought to be A B♭ C D, &c. inſtead of A B C D; that of E ſhould be E F G A, &c. inſtead of E F♯ G A. And thus of other minor keys in proportion. And according to this worthy eccleſiaſtic's minor mode, it is the ſame ſcale as Blainville's pretended third mode in 1751, different from the major and minor in common uſe. But he muſt be a ſhallow practical muſician who does not ſee that the ſcale E F G A B C D e belongs to the key of A minor, beginning and ending at the fifth inſtead of the key-note; and that it is one of the ſpecies of octave in the eccleſiaſtical modes. See Blainville, and *Troiſieme Mode* in Rouſſeau.

P. Sacchi died at Milan in 1789, aged ſixty-four. He wrote the life of Farinelli in Italian.

SACCHINI, Antonio, born near Naples in 1727, and educated in the conſervatorio of St. Onofrio, under Durante, at the ſame time as Piccini, Traetta, and Guglielmi. A gentle, tranquil, and affectionate diſpoſition, perhaps, rendered him too ſuſceptible of *la belle paſſion,* which however impreſſed his ſlow movements with all that grace, tenderneſs, and pathos, which have never been exceeded, if equalled, by any other vocal compoſer. And even when *energy* was neceſſary, he might ſay, with the abbé de Chaulica,

"Au cœur beaucoup de tendreſſe,
De la force quand il faut."

"A tenderneſs of heart
Which nature kind had never ſcanted,
Nor force ſufficient, when 'twas wanted."

All his operas are replete with elegant airs, beautiful accompanied recitatives, and orcheſtral effects, without the appearance of labour or ſtudy. His propenſity to the fair ſex ſometimes impeded his profeſſional activity. Being called to Milan to compoſe his firſt opera, the charms of *la prima donna* made him wholly forget the buſineſs of his journey, and beſtow that time on the object of his paſſion, which belonged to the Impreſario; who, a few days before the opening of the theatre, calling upon Sacchini to fix a time for the firſt rehearſal of his opera, the compoſer in confuſion perceiving his fault, was obliged to confeſs that not a note of the opera was written which was expected from him. The fury and deſpair of the Impreſario may be eaſily imagined, who ſaw nothing but ruin before his eyes. Happily *la prima donna,* of a more firm and active character than her adorer, aſſured the manager, if he would ſhut them up together, with two copyiſts, ſhe would be anſwerable for the compoſer not quitting his bed till the opera was finiſhed, and accordingly Sacchini, without quitting his bed even to eat, went to work with ſuch a determined ſpirit of diſpatch, and advanced with ſuch rapidity, that the two copyiſts could ſcarcely keep pace with him; ſo that in four days the muſic was compoſed, copied, learned, rehearſed, and brought on the ſtage. It had very great ſucceſs, and has been thought one of his beſt.

Sacchini was one of the few modern maſters who kept his ſacred and ſecular ſtyle of compoſition ſeparate and diſtinct. In his theatrical compoſitions, to look at the ſcore, there ſeemed ſo much ſimplicity, that a mere contrapuntiſt would have imagined him to have been a feeble harmoniſt; it was, ſeemingly, by ſmall means that he produced the greateſt effects. He intereſted the audience more by a happy, graceful, and touching melody, than by a laboured and extraneous modulation. His accompaniments always brilliant and ingenious, without being loaded and confuſed, aſſiſt the expreſſion of the vocal part, and are often pictureſque. But his eccleſiaſtical compoſitions are not only learned, ſolemn, and abounding with fine effects, but clothed in the richeſt and moſt pure harmony. He remained at Rome eight years, at Venice four, where he was appointed maſter of the conſervatorio of the Oſpidaletto; and after having compoſed for all the great theatres in Italy and Germany with increaſing ſucceſs, in 1772 he came to England, and here he not only ſupported the high reputation he had acquired on the continent, but vanquiſhed the natural enemies of his talents in England. His operas of the Cid and Tamerlano were equal, if not ſuperior, to any muſical dramas we have heard in any part of Europe. The airs of Millico, the firſt man, were wholly written in the delicate and pathetic ſtyle of that ſinger; as the firſt woman's part was in the ſpirited and nervous ſtyle of Girelli. And he cheriſhed the talents of the inferior ſingers in ſo judicious a manner, that all their defects were conſtantly diſguiſed or concealed. Savoi, notwithſtanding his fine voice, had been worſe than unnoticed before this period, for he was almoſt inſulted; yet ſo excellent was the muſic he had to execute in Sacchini's operas, and ſo favourably did it call him into notice, that inſtead of going off the ſtage in ſilence, he was applauded and even encored, nearly as much and as frequently as the firſt ſingers. The Carrara, too, a young ſinger, whoſe voice was naturally drowſy, childiſh, and inſipid, from the beauty of her ſongs was well received. Indeed, each of theſe dramas was ſo entire, ſo maſterly, yet ſo new and natural, that there was nothing left for criticiſm to cenſure, though innumerable beauties to point out and admire. It is evident that this compoſer had a taſte ſo exquiſite, and ſo totally free from pedantry, that he was frequently new without effort; never thinking of himſelf or his fame for any particular excellence, but totally occupied with the ideas of the poet, and the propriety, conſiſtency, and effect of the whole drama. His accompaniments, though always rich and ingenious, never call off attention from the voice, but by a conſtant *tranſparency*, the principal melody is rendered diſtinguiſhable through all the contrivance of imitative and picturesque deſign in the inſtruments.

In the year 1770, when we ſaw Sacchini at Venice, he told us that he had compoſed near forty ſerious, and ten comic operas; and in 1778, upon enquiring of him to what number his dramatic works then amounted, he ſaid to ſeventy-eight, of which he had forgot even the names of two. Sacchini, while he remained at Venice in the character of maeſtro dell' Oſpidaletto conſervatorio, by the number of maſſes and motets he had compoſed, manifeſted himſelf to be as able to write for the church as ſtage. He remained too long in England for his fame and fortune. The firſt was injured by cabals, and by what ought to have increaſed it, the number of his works; and the ſecond by inactivity and want of economy.

He refuſed ſeveral engagements which were offered him from Ruſſia, Portugal, and even France, where it was much wiſhed that he would exerciſe his talents long before his firſt viſit thither; but his ſedentary humour, and averſion to activity, would not allow him to accept of the offers that were made to him, till he was tempted by the hopes of an eſtabliſhment at Paris for life. When he arrived in London, in 1772, his firſt opera was the "Cid," which was followed by "Tamerlano," and "Lucio Vero," a paſticcio, the ſame ſeaſon. In 1774 and 1775, "Nitteti" and "Perſeo;" in 1776, "L'Iſola d'Amore;" in 1777, "Creſo;" in 1778, "Erifile;" in 1779, "Enea e Lavinia," and "La Contadina in Certe," a comic opera; in 1780, "Rinaldo," and "L'Amore Soldato," another burletta; and laſtly, in 1781, "Mitridate."

It is manifeſt in the operas that he compoſed for Paris, that he worked for ſingers of mean abilities; which, beſides the airs being ſet to French words, prevented their circulation in the reſt of Europe, which his other vocal productions in his own language had conſtantly done.

In the ſummer of 1781 he went firſt to Paris, where he was almoſt adored, but after increaſing his reputation there, by new productions, he returned the following year to London, where he only augmented his debts and embarraſſments; ſo that, in 1784, he took a final leave of this country, and ſettled at Paris, where he not only obtained a penſion from the queen of France, but the theatrical penſion, in conſequence of three ſucceſsful pieces. This graceful, elegant, and judicious compoſer died, at Paris in September 1786, where he was honoured with a public funeral, and every mark of reſpect and diſtinction which ſenſibility and gratitude could beſtow on an artiſt, though a foreigner, who had contributed ſo largely to their moſt elegant pleaſures.

SACCHOLACTIC Acid. See Saclactic *Acid*.

SACCINI, in our *Old Writers*, monks ſo called, becauſe they wore a garment of goat's hair next to their ſkins.

Saccus is applied to coarſe cloth made of ſuch hair.

SACCO Beneditto. See Sanbenito.

SACCOPHORA, in *Botany*, from σακκος, *a bag*, and φερω, *to bear*, a name given by Paliſot Beauvois to the *Buxbaumia*. *De Theis*.

SACCOPHORI, Σακκοφοροι, formed of σακκος, *a ſack*, and φερω, *I bear*, in *Eccleſiaſtical Hiſtory*, a ſect of ancient heretics, thus called, becauſe they always went clothed in ſackloth, and affected a great deal of auſterity and penance.

We know but little of their tenets: in all probability they were the ſame with the Maſſalians.

The emperor Theodoſius made a law againſt the Saccophori and Manichees.

SACCULUS, in *Anatomy*, a technical term applied to different ſmall cavities in the body.

Sacculi *adipoſi* are the cells of the cellular membrane, containing fat, ſee Cellular *Subſtance*; and ſacculi *mucoſi*, the membranous receptacles into which mucous fluids are ſecreted in ſome inſtances. See Gland.

The ſacculus *chyliferus* is the large portion of the great abſorbent trunk, called alſo receptaculum chyli. See Absorbents.

The ſacculus *cordis* is the pericardium. See Heart.

The ſacculus *lacrymalis* is the membranous bag in the corner of the eye, receiving the tears. See Eye.

Sacculus *Medicinalis* denotes a topical medicine, applied to the ſide, ſtomach, or other pained part; conſiſting of herbs, or drugs incloſed in a linen bag.

Sacculus *Medicinalis* is alſo a name given to a bag of ingredients ſuſpended in a liquor, in making diet-drinks; called alſo *nodule*.

SACCUS *cum Brochia*, in our *Old Writers*, a ſervice or tenure of finding a *ſack* and a *broach* to the king, for the uſe of his army.

Saccus *Lacteus*, a name given by ſome anatomiſts to the receptaculum chyli.

SACE′, in *Geography*, a town of France, in the department of the Channel; 6 miles S.E. of Pontorſon.

SACELLUM, in *Roman Antiquity*, denoted a place ſacred to the gods, without a roof.

SACER, in *Ichthyology*, a name given by Gaza and ſome others to that ſpecies of the labrus, diſtinguiſhed by Artedi by the name of the red forked-tail labrus, and called by the generality of other authors the *anthias piſcis*. See Labrus.

Sacer *Ignis*, in *Medicine*. See Ignis *Sacer*, and Ergot.

Sacer *Morbus*. See Epilepsy.

Sacer *Muſculus*, in *Anatomy*, an old name applied to the great extenſors of the ſpine, which ariſe from the back of the ſacrum.

Sacer *Ager*, in *Ancient Geography*, a place of Aſia Minor, in Ionia, in the vicinity of Clazomenes. Livy.

Sacer *Lucus*, a foreſt of Italy, at the mouth of the Liris, near Minturnæ. Strabo.

Sacer *Mons*, a mountain of Thrace, between the town of Byzantium and the Thracian Cherſoneſus, according to Xenophon.—Alſo, a mountain of Italy, to which the Roman people retired at two different periods. It was ſituated near Rome, and according to Livy on the other ſide of the Anio, and three miles from the city.

Sacer *Portus*, a port of Aſiatic Sarmatia, upon the Euxine ſea, 30 ſtadia from port Pagræ. Arrian.

Sacer *Sinus*, a gulf of Arabia Felix, upon the Perſian gulf, in the country of the people called Abucæi. Ptolemy.

SACERDOTAL, Sacerdotalis, formed from *ſacerdos*, *prieſt*, of *ſacer*, *holy*, ſomething belonging to the prieſthood.

Sacerdotal *Benefices*, are ſuch as cannot be legally held by any but perſons in holy orders: ſuch are all cures of ſouls, biſhoprics, &c.

Sacerdotal *Ornaments*, *The*, are thoſe with which the prieſts are clothed when they officiate, &c.

SACHACHA, in *Ancient Geography*, a town of Paleſtine, in the tribe of Juda. Joſhua, ch. xv. v. 16.

SACHETTO, in *Geography*, a town of Italy, in the department of the Mincio; 13 miles S.E. of Mantua.

SACHETTUS, in *Ichthyology*, the name of a ſea-fiſh, much reſembling the common river perch in ſhape and colour, and having the ſame black obliquely tranſverſe lines on its ſides, and ſeeming the ſame with the channadella of Bellonius, Rondeletius, and other authors. It is common in the Mediterranean, and is brought to market at Rome, Venice, and elſewhere, and accounted a very delicate and well-taſted fiſh. See Chane, and Labrus *Hepatus*.

SACHLA, in *Ancient Geography*, a town of Arabia Felix. Ptolemy.

SACHSA, in *Geography*, a town of Weſtphalia, in the lordſhip of Klettenberg, ſituated in the Hartz foreſt, where are found ſome quarries of green, brown, and red marble; 24 miles N.E. of Gottingen. N. lat. 51° 38′. E. long. 10° 30′.

SACHSENBERG, a town of Germany, in the county of Waldeck; 12 miles W. of Waldeck. N. lat. 51° 8′. E. long. 8° 50′.

SACHSENBURG, a town of Germany, in the county of Witgenſtein, on the S. ſide of the Rhine, oppoſite to Francfort on the Maine.—Alſo, a town of Saxony, in Thuringia, on the Unſtrutt; 8 miles N.N.E. of Weiſenſee.

SACHSENDORF, a town of the Middle Mark of Brandenburg; 4 miles E. of Seelow.

SACHSENHAGEN, a town of Weſtphalia, in the county of Schauenburg, on the Aue; 6 miles W.S.W. of Hagenburg.

SACHSENHAUSEN, a town of Germany, in the county of Waldeck; 6 miles N.W. of Waldeck.

SACHSENHEIM, Gros, a town of Wurtemberg; 3 miles N. of Mark Groningen.

SACHSGRUN, a town of Saxony, in the Vogtland; 7 miles S.W. of Oelſnitz.

SACI, a mountain of Naples, in Calabria Ultra; 10 miles N. of Bova.

SACILE, a town of Italy, in the Treviſan, on the Livenza, anciently, as ſome ſay, the ſee of a biſhop, the honour of which others aſcribe to Saciletto; 10 miles E. of Ceneda.

SACILETO, a town of Italy, in the Friuli; 6 miles S.E. of Palma Nuova.

SACILI Martialum, in *Ancient Geography*, a town of Hiſpania, in the interior of Bœtica, in the country of the Turduli. Pliny.

SACK, in *Commerce*, a corn meaſure in many parts of the continent. See Measures, Tab. XXXI.

Sack *of Coals* contains three buſhels, or one-third part of a *Chaldron*; which ſee.

Sack *of Wool* is a determinate quantity, containing juſt twenty-ſix ſtones; and every ſtone fourteen pounds. 14 Edw. III. ſtat. 1. cap. 2.

In Scotland a ſack is twenty-four ſtones; each ſtone containing ſixteen pounds.

A Sack *of Cotton Wool* is a quantity from a hundred and an half to four hundred weight.

Sacks *of Earth*, *Sacs à Terre*, in *Fortification*, are canvas bags full of earth, the largeſt about a cubic foot wide, and the leſſer ſomewhat more than half a foot.

They are alſo called *earth bags*, and *canvas bags*, and are uſed on ſeveral occaſions; particularly for making retrenchments in haſte to place on parapets, or the heads of the breaches, &c. or to repair them when beaten down.

They are of good uſe alſo where the ground is rocky, and affords not earth to carry on the approaches, becauſe they can eaſily be brought on, and carried off. See Sand-*Bags*.

The ſame bags, on occaſion, are uſed to carry powder in, of which they hold about fifty pounds a-piece.

SACKAROW, in *Geography*, a town of Pruſſia, in the palatinate of Culm; 8 miles N. of Culm.

SACKENHAUSEN, a town of the duchy of Courland; on a river which runs into the Baltic; 16 miles W.S.W. of Goldingen.

SACKERIGURRY, a town of Hindooſtan; 36 miles S. of Coimbetore.

SACKO, a town of Sweden, in Eaſt Bothnia; 36 miles S.E. of Braheſtad.

SACKVILLE, Thomas, lord Buckhurſt, and earl of Dorſet, in *Biography*, one of the earlieſt cultivators of Engliſh poetry, was the ſon of ſir Richard Sackville of Buckhurſt, in the pariſh of Withiam, in Suſſex. It is not at all certain at what time he was born. Dr. Abbot, in his funeral ſermon, ſays it was in the year 1536; but Mr. Wharton aſſumes it to have been in or about the year 1530. Having probably attained the elements of learning at home, he was ſent to Hart-hall, Oxford, whence he removed to Cambridge, where he took his degree of M. A. He was diſtinguiſhed at both the univerſities for his performances in Engliſh and Latin poetry, in which he alſo excelled in after-life. From Oxford he went to the Inner Temple, to ſtudy the law, but probably without any intention of practiſing it, for he was born to the expectation of an ample fortune. He was a repreſentative in parliament for the county of Weſtmoreland in the reign of queen Mary, and in 1557 he formed the plan of a poem, intended to comprehend a view of all the illuſtrious but unfortunate characters of Engliſh hiſtory from the conqueſt, by way of moral example, under the title of the "Mirror of Magiſtrates." Of this work he finiſhed a poetical preface, and one part only on the life of Henry Stafford, duke of Buckingham. The other parts were conſigned to different hands. In 1561, his tragedy of "Gorboduc" was exhibited before queen Elizabeth with great applauſe. It was quite calculated to ingratiate the writer with the ſovereign, on account of the maxims of high loyalty which he put into the mouth of Eubulus, the good counſellor, who condemns reſiſtance to kings upon any account whatever. Mr. Sackville married about the year 1557, after which he ſat in two parliaments for the counties of Suſſex and Bucks, when he travelled into foreign parts, on account, it is thought, of ſome embarraſſment in his circumſtances. At the time of his father's death, in 1566, he was a priſoner in Rome, but he ſoon obtained his releaſe, and returned to take poſſeſſion of his eſtates. In the following year he was knighted, and raiſed to the peerage by the title of baron of Buckhurſt. In 1570 he was ſelected by the queen to go out at the head of a complimentary embaſſy to Charles IX. of France, on account of his marriage, on which occaſion he indulged his taſte for magnificence to the injury of his fortune. In 1587 he was ſent ambaſſador to the United Provinces, for the purpoſe of inquiring into their complaints againſt the earl of Leiceſter, and his report of the matter was ſo diſpleaſing to the favourite, that he influenced the queen, on lord Buckhurſt's return, to confine him ſeveral months to his own houſe; and he did not obtain his liberty till the earl of Leiceſter's death. After this event the queen teſtified her regard to lord Buckhurſt by conferring upon him, in the year 1589, the order of the Garter, and by interfering to obtain for him, in 1591, the chancellorſhip of the univerſity of Oxford. In 1598 he was joined with the treaſurer, lord Burleigh, in negociations for a peace with Spain; and when the States-General, taking the alarm, ſent over deputies to renew their own treaty with England, lord Buckhurſt was appointed to confer with them, and he at length ſigned a new treaty, on terms very advantageous to the queen. In 1599, on the death of lord Burleigh, he was nominated to the vacant poſt of lord high treaſurer. In this ſituation he was very inſtrumental in diſcovering and defeating the projects of the earl of Eſſex, and at the trial of that nobleman he acted as high ſteward, in which office he conducted himſelf with prudence and humanity. He did not join any of the factions by which the court was divided in that reign, but, warmly attached to the glory of the queen, he lived in her confidence till her death. On the acceſſion of James, his poſt of treaſurer was confirmed to him for life, and in 1604 he was created earl of Dorſet. Four years after this he died.

Although the earl of Dorſet can ſcarcely be ranked among the more eminent ſtateſmen in Elizabeth's reign, yet he filled all the high offices entruſted to him with honour and integrity. He was a good ſpeaker, and a better writer. As a poet he claims high praiſe, for having brought Engliſh heroic verſe almoſt to a ſtate of perfection, and for having given the firſt ſpecimen of regular tragedy in blank verſe. The following critique, or account of his merits as a poet, may, for its accuracy, be juſtly quoted. "The *Induction* to the *Mirror of Magiſtrates*, contains an imaginary deſcent to the infernal regions, under the guidance of Sorrow, introductory to the ſtories afterwards told by the perſons themſelves, whoſe misfortunes are the ſubject of the *Mirror*. It is written in ſtanzas, of lines in heroic meaſure, the verſification of which is for the moſt part as pure and regular as that of any modern, while the ſtrength of deſcription, and the force of imagination, diſplayed in inventing allegorical characters, are ſcarcely ſurpaſſed by Spenſer. His tragedy of 'Gorboduc,' or, as it was entitled when printed in 1571, 'The Tragidie of Ferrex and Porrex,' is a bloody tale from Engliſh hiſtory, compoſed without attention to dramatic rules, and without intereſt or pathos, but with conſiderable force of poetical conception and moral ſentiment, and in pure and perſpicuous language." This tragedy has been ſeveral times printed, the laſt edition being undertaken by Spence in 1736, at the ſuggeſtion of Pope.

From this nobleman have deſcended the dukes of Dorſet, of whom the firſt was advanced to that high dignity in June 1720, by his majeſty king George I. John George Frederic, the fourth duke, was born in November 1793, and ſucceeded to the title at the death of his father, in July 1799. This young nobleman, one of the moſt accompliſhed and amiable gentlemen of the age, was unfortunately killed by a fall from his horſe, on the 22d of February 1815, and was ſucceeded in his titles by a couſin, viſcount Sackville. Biog. Brit. Peerage.

SACKVILLE, in *Geography*, a townſhip of Nova Scotia, in Cumberland county, on Chegnecto Baſon, called by the French Beau Baſin and Tintamare, and the N. ſide of the river Au Lac.

SACKWITZ, a town of Saxony; 3 miles W.N.W. of Schmiedeberg.

SACKYLA, a town of Sweden, in North Finland; 32 miles S.S.E. of Biorneborg.

SACKYMUNY, a town of Hindooſtan, in the circar of Cuddapa; 18 miles N.E. of Gandicotta.

SACLACTIC ACID, in *Chemiſtry*, is one of the vegetable acids, firſt diſcovered by Scheele in treating the ſugar of milk with nitric acid, in the way that ſugar is treated by the ſame to procure the oxalic acid.

The object of Scheele, in this experiment, was to ſee whether the ſugar of milk, which, in other reſpects, ſeemed ſo much to reſemble ſugar, had alſo the property of affording oxalic acid with nitric acid. After many times diſtilling nitric acid from it, as directed in forming oxalic acid, he obtained a ſmall portion of the cryſtals of the latter, mixed with a white powder. Continuing to add freſh nitre to the white powder, and repeating the diſtillation, he at length converted the whole into oxalic acid. He repeated this experiment, for the purpoſe of examining the white powder which he had obſerved before. He found it to poſſeſs peculiar properties as an acid, and gave it the name of *acid of the ſugar of milk*.

Humboldt, about the ſame time, made ſimilar experiments upon the ſame ſubſtance. He, however, concluded the white powder to be a ſuper-oxalat of lime, and not a peculiar acid. After due inveſtigation and repeated experiments, the opinion of Scheele was confirmed, and the ſubſtance was claſſed among the acids. The French chemiſts afterwards gave it the name of ſaclactic acid, which it ſtill retains.

The ſame ſubſtance has been produced from gum arabic, and other mucilaginous bodies with nitric acid, from which Fourcroy gave it the name of *mucous acid*.

This acid is obtained by the following proceſs: to one part of gum arabic, or other mucilaginous ſubſtance in a retort, pour two parts, by weight, of nitric acid. Apply a gradual heat to the retort. When red fumes begin to appear, let the heat be ſlackened, and allow the retort to cool. A white powder falls to the bottom, which, when ſeparated, is the acid in queſtion.

Saclactic acid, thus procured, is a white powder, rather gritty to the feel, and ſlightly acid to the taſte.

When heated in a retort, with a view to its diſtillation, it is decompoſed, and a liquor comes over, which cryſtallizes on cooling. This is accompanied with a reddiſh oil, and with carbonic acid and carburetted hydrogen gaſes. According to Scheele, it diſſolves in ſixty parts of boiling water; and according to Morveau in eighty, depoſiting one-fourth in cryſtals on cooling. The ſolution reddens tincture of turnſole.

It combines with the different baſes forming ſalts; but theſe properties are little known. It forms with potaſh a ſalt ſoluble in eight parts of water; and with ſoda a ſalt ſoluble in five parts. The ſaccholat of ammonia is eaſily decompoſed by heat. With the earths it moſtly forms inſoluble ſalts, and the ſame with the metallic oxyds.

SACLAS, in *Geography*, a town of France, in the department of the Seine and Oiſe; 5 miles S. of Eſtampes.

SACO, a river of America, which runs into the ſea, 11 miles S.S.W. of Portland, in the diſtrict of Maine, and forms a large bay, called “Saco Bay,” at its mouth, four miles E. of cape Porpoiſe. N. lat. 43° 27′. W. long. 70° 20′. The ſource of this river is found on the S. ſide of the White mountains, in New Hampſhire. Having croſſed into Maine, it makes a large bend N.E. and S.W. embracing the fine townſhip of Frejeburg, and purſuing a S.E. courſe to the ſea. Great and Little Oſſapee rivers fall into it from the W. It is navigable for ſhips to Saco falls, about ſix miles from the ſea; and here it is broken by Indian iſland, over which is the poſt-road. A bridge is thrown over each of the branches. A number of mills are erected here, to which logs are floated from forty to fifty miles above; and veſſels can come up to the mills to take in the lumber. Four millions feet of pine boards were annually ſawed at theſe mills before the war. Without the bar, near the mouth, and between Fletcher's peak and the main land, is a pool, in which veſſels of any ſize may lie at all ſeaſons of the year, and take in their ladings at pleaſure. Indian river, which divides the river at the falls, conſiſts of about thirty acres of land. Salmon falls are ten miles above the iſland.

SACOLCHA, in *Ancient Geography*, a town of Ethiopia, in the iſland of Meroe. Ptolemy.

SACOMOTO, in *Geography*, a town of Japan, in the iſland of Niphon; 30 miles E.N.E. of Meaco.

SACORA, in *Ancient Geography*, a town of Aſia, in Galatia. Ptolemy.

SACOTTAY, in *Geography*, a town of Siam, on the river Menon, near the mountains which ſeparate Siam from Pegu.

SACRA MEDIA, and SACRÆ *Laterales*, in *Anatomy*, ſmall arteries diſtributed about the ſacrum. The former is a branch of the aorta; the latter are produced from the internal iliac artery. See ARTERY.

SACRA *Fiſtula*, a name given by ſome to the cavity in which the ſpinal marrow is lodged, and by others to the ſpinal marrow itſelf.

SACRA *Gentilitia*, among the Romans. Beſide the public feſtivals obſerved by the whole Roman people, and beſide the holidays kept on birth-days, marriages, or any other perſonal account, there were likewiſe family feaſts celebrated annually by the deſcendants only of particular families.

They thought themſelves obliged to keep theſe with the utmoſt exactneſs and regularity, on pain of divine vengeance. Livy tells us, that a young man of the Fabian family, when the Capitol was beſieged by the Gauls, made his way through the enemy's army, in order to celebrate the yearly feſtival of his family, to the no ſmall aſtoniſhment both of the beſiegers and beſieged. Mem. Acad. Inſcript. vol. viii. p. 310.

SACRA *Solis*, in *Ancient Geography*, a promontory of Arabia Felix, in the Perſian gulf, and in the country of the Nerites. Ptolemy.

SACRALES NERVI, in *Anatomy*, the five laſt pairs of nerves produced by the medulla ſpinalis, and going out of the vertebral canal through the foramina of the ſacrum. See NERVE.

SACRAMENT, SACRAMENTUM, in the general, denotes a ſign of a holy or ſacred thing.

The word is formed from the Latin *ſacramentum*, which ſignified an oath, particularly that which the ſoldiers took, to be true to their commanders; the words of which, according to Polybius, were “obtemperaturus ſum et facturus quicquid mandabitur ab imperatoribus juxta vires.”

In this ſenſe, the word includes both the ſacraments of the law of nature, as ſound morality, the manner of offering the bread and wine practiſed by Melchiſedech, &c. and thoſe of the law of Moſes, as the circumciſion, the paſchal lamb, purifications, order of prieſthood, &c.

SACRAMENT, with regard to the Chriſtian church, is defined, an outward and viſible ſign of an inward and ſpiritual grace annexed to the uſe of it.

But ſome have objected againſt this definition, as obſcure; unleſs it ſuppoſes ſome divine influence of an extraordinary nature inſeparably annexed to the outward ſign; and if this be the meaning of it, they apprehend there is reaſon to queſtion, whether there be any ſacrament at all. Accordingly they have choſen to define ſacraments to be ordinances inſtituted by Chriſt, to be uſed by all Chriſtians as ſeals of the covenant of grace; or as tokens of their accepting the goſpel covenant as well as of the divine acceptance. Or, the term ſacrament, originally ſignifying the oath which the Roman ſoldiers took to be faithful to their general (though it be no ſcripture term), is properly enough transferred to denote the affectionate zeal, and inviolable fidelity, which the followers of Jeſus, in baptiſm and the Lord's ſupper, profeſs and promiſe to the captain of their ſalvation.

There are two objects in a ſacrament: the one a material ſign, the object of their ſenſes; the other the thing ſignified, which is the object of faith. Thus it has pleaſed God to give as it were a body or ſubſtance to ſpiritual acts, that our faith might have the aſſiſtance of ſenſible ſigns.

From the nature of this inſtitution, as well as the expreſs words by which it is enjoined, it is inferred that it was intended to be a perpetual memorial of Chriſt, and particularly of his death, as the completion of his miniſtry and undertaking on earth, and alſo as introductory to his reſurrection, and to his ſubſequent authority, and to the office of final judge. It ſerves the purpoſe likewiſe of being a token of the engagements to him, which Chriſtians thus voluntarily avow, a pledge of the bleſſings of his covenant to be imparted to them, and a badge of their mutual affection to each other. But the various religious and moral uſes to which it is ſubſervient ought to be diſtinguiſhed from that which is its primary object, *viz.* the commemoration of Chriſt, in doing which Chriſtians implicitly avow that they are his diſciples, and publicly profeſs their reſpect for his perſon, character, and undertaking, their relation to him as his voluntary diſciples, and their reſolution to conform to his precepts, and to maintain and promote his cauſe in the world. (See Matt. xxvi. 26—28. Mark, xiv. 22—26. Luke, xxii. 14—20. 1 Cor. x. 16, 17. 1 Cor. xi. 20, &c. compared with Acts, ii. 42—46.) From the nature and deſign of this ordinance as a commemoration of Chriſt, it has been inferred that no change takes place, at the adminiſtration of it, of the elements of bread and wine into the ſubſtance of Chriſt's body and blood, as the Catholics maintain; becauſe many inſtances occur in which a thing is ſaid to *be*, what it is only intended to *repreſent*; (ſee Gen. xvii. 10. xli. 26. Ezek. v. 5. Dan. vii. 23. John, x. 9. xv. 1. 1 Cor. x. 4. Rev. xvii. 9.) and beſides, if theſe elements were the very body and blood of Chriſt, they could not be the *commemoration* of them. Moreover, no propitiatory ſacrifice is offered to God in this ordinance; becauſe it is the commemoration of that ſacrifice, which is frequently ſaid to be offered *once for all*, Heb. ix. 26—28. x. 10. 14. (See TRANSUBSTANTIATION.) Solitary maſſes, that is, the celebration of the Lord's ſupper in ſecret by the prieſt alone, are evidently inconſiſtent with one part of the deſign of this ordinance, which is to be regarded as a pledge of mutual love among Chriſtians. That this rite was intended for *continued* uſe in the church of Chriſt, appears from the early teſtimonies of Pliny, Juſtin Martyr, Ignatius, and all the oldeſt writers, which aſſure us, that it was in fact practiſed even from the time of the apoſtles; as alſo from St. Paul's declaring, that "hereby we ſhew forth the Lord's death till he come," 1 Cor. xi. 26. This may be alſo farther argued from the ends of the ordinance already ſpecified. Some have attributed a peculiar ſolemnity to this inſtitution, and a degree of criminality to the unworthy participation of it, which have deterred many upright, humble, and diffident Chriſtians from the uſe of it. Perhaps this has been owing partly to the adminiſtration of it to dying perſons, and to its having been thus conſidered as a ſeal or pledge of abſolution, and a kind of "viaticum," a notion of it which is not warranted by the New Teſtament; partly to a miſinterpretation of 1 Cor. xi. 29: the unworthineſs to which that paſſage refers, and the puniſhment annexed to it, referring to a particular caſe, which is not likely ever to occur in modern times: partly to a miſtaken notion of the ſacredneſs of the elements, after prieſtly conſecration; partly to an idea exploded among Proteſtants, that Chriſt is materially preſent in theſe elements; and to the practice, ſtill enjoined in ſome eſtabliſhed churches, of kneeling in the participation of them. All acts of religious worſhip are ſolemn and important, and ſhould be performed with a humble and ſerious mind; nor does there ſeem to be any reaſon for imagining that improper conduct in this inſtance is more culpable and dangerous in its conſequences, than in offering our addreſſes to the Deity, or receiving inſtruction from his word. Some have laid great ſtreſs on the previous preparation that is neceſſary for this ſervice; and it undoubtedly is neceſſary and uſeful, that the mind ſhould be in a fit ſtate for the diſcharge of every private and public duty, and no leſs ſo in other caſes than in this. The infrequency of communicating has perhaps been one occaſion of a greater ſolemnity aſcribed to this inſtitution than to any other act of religion which more commonly occurs; whereas it plainly appears, from the moſt credible account of the primitive church, that the Lord's ſupper was uſed much more frequently in ancient than in modern times, and that it made a part of their public worſhip every Lord's day. Having above-mentioned the "conſecration" of the elements, we ſhall here obſerve, that ſome have maintained that this has no foundation in the original inſtitution. Accordingly they object to our tranſlation of Matt. xxvi. 26. (compare Mark, xiv. 22.) where we render ευλογησας, *bleſſed it;* whereas they ſuppoſe it ſignifies Chriſt's *giving thanks* to God, when he brake the bread. (See alſo Luke, xvii. 22. 1 Cor. xi. 24.) The apoſtle ſpeaks of "bleſſing the ſacramental cup," which biſhop Hoadley (Plain Account, &c.) interprets, "the cup over which we bleſs or adore God." However *that* may with great propriety, in the language of Scripture, be ſaid "to be bleſſed," which is in a ſolemn manner ſet apart from a common to a ſacred uſe (Gen. ii. 3.), and we may be ſaid "to bleſs it," when we ſolemnly pray, that God may attend it with ſuch influences from above, as may make it effectual to our ſpiritual edification. See Mark, xi. 9, 10, 11.

We obſerve that there is no foundation for the great ſtreſs that has been laid on the *manner* in which this ordinance is adminiſtered, or the *poſture* in which it is received. A *table*-poſture, ſome have ſaid, ſeems moſt eligible, as having been uſed by Chriſt and his apoſtles, and being peculiarly ſuitable to the notion of a ſacred feaſt; and *kneeling*, which they ſay was never introduced into the church till tranſubſtantiation was received, may prove an occaſion of ſuperſtition. Nevertheleſs, as long as either poſture is not abſolutely impoſed as a form of communion, it will appear to be the part of Chriſtian candour to acquieſce in the uſe of either by thoſe who prefer it. Standing was frequently uſed in the Chriſtian church, *viz.* always on the Lord's day, and between Eaſter and Whitſuntide. (King's Enq. pt. ii. c. vi. § 7. Pierce's Vind. of Diſſ. pt. ii. ch. 10. Hooker's Ecclef. Polity, § 68.) Whether this inſtitution ſhould be adminiſtered at noon, or in the evening, is a queſtion of very ſmall importance, and not worthy of particular diſcuſſion in this place: nor ſhall we here introduce the ſubject of infant communion, for which Mr. Pierce and ſome others have pleaded, but refer to *Infant* COMMUNION.

The uſe of this ordinance, as a qualification for civil offices, is a perverſion of its deſign, not to ſay a profanation of it, which has been much lamented by perſons of every party and profeſſion: we ſhall ſay nothing here of the objections, urged by ſome on the foundation of juſtice, againſt excluding peaceable and loyal ſubjects from places of truſt and profit, merely on account of their religious opinions. See TEST.

The cuſtom of adminiſtering the Lord's ſupper to condemned criminals juſt before their execution, is both abſurd and dangerous: it is natural for ſuch to conſider it as a token that they are already in a ſtate of pardon and acceptance, which may prevent their employing their few remaining moments of life in a manner ſuited to their circumſtances, and may harden others in vain and preſumptuous hopes.

The ſacrament is unqueſtionably a ſolemn act of worſhip, whatever may be our opinion of its relative importance; and the Rubric requires three at leaſt to communicate, and directs, that no one be admitted to the holy communion until he be confirmed, or be ready and deſirous to be confirmed; and a miniſter is not without lawful cauſe to deny it to any who ſhall devoutly and humbly deſire it; but notorious ſinners are not to be admitted to it till they have repented; nor thoſe who maliciouſly contend, until they are reconciled, &c. Alſo the ſacrament is not to be adminiſtered to ſuch who refuſe to kneel, or to be preſent at the prayers of the church, or to ſtrangers; for a miniſter is not obliged to give it to any but thoſe of his own pariſh; and the partakers of the holy ſacrament ought to ſignify their names to the curate at leaſt a day before it is adminiſtered. (Can. 27, 28. Rubric.) If a miniſter refuſes to give the ſacrament to any one, being required by the biſhop, he is to certify the cauſe of ſuch refuſal; and a parſon refuſing to adminiſter the ſacrament to any, without juſt cauſe, is liable to be ſued in action of the caſe; becauſe a man may ſuſtain a temporal loſs by ſuch refuſal. By ſtatute, no perſons ſhall be choſen into any office of magiſtracy, or place of truſt, &c. unleſs they have, within one year before ſuch elevation, received the ſacrament according to the rites of the church of England, and deliver a certificate of it to the court of king's bench, or quarter ſeſſions, under the hand of the miniſter, and prove it by witneſſes. (13, 14, and 25 Car. II.) In every pariſh church the ſacrament is to be adminiſtered three times in the year (of which the feaſt of Eaſter to be one), and every layman is bound to receive it thrice every year, &c. In colleges, and the halls of the univerſities, the ſacraments are to be adminiſtered the firſt and ſecond Sunday of every month; and in cathedral churches every Sunday, and upon all principal feaſt days. (Canon 21, 22, 23.) The churchwardens, as well as the miniſter, are to take notice whether the pariſhioners come ſo often to the ſacrament as they ought; and on a churchwarden's preſenting a man for not receiving the ſacrament, he may be libelled in the eccleſiaſtical court and excommunicated, &c. Reviling the ſacrament of the Lord's ſupper is puniſhable by fine and impriſonment. 1 Edw. VI. c. 1. 1 Eliz. c. 1.

Roman Catholics own ſeven ſacraments; *viz.* baptiſm, confirmation, the euchariſt, penance, extreme unction, ordination, and marriage. See each under its proper article. See Popery.

The Proteſtants admit of only two; *viz.* baptiſm and the euchariſt, or Lord's ſupper.

The Romaniſts, however, call the euchariſt, by way of eminence, the "Holy Sacrament." Thus, to expoſe the Holy Sacrament, is to lay a conſecrated hoſt on the altar to be adored. (See Host.) The proceſſion of the Holy Sacrament is that wherein this hoſt is carried about the church, or about the town. See Procession.

In a like ſenſe they ſay, the Feaſt of the Holy Sacrament, the Congregation of the Holy Sacrament.

Sacrament, *Congregation of the Holy*, a religious eſtabliſhment formed in France, whoſe founder was Autherius, biſhop of Bethlehem, and which, in 1644, received an order from Urban VIII. to have always a number of eccleſiaſtics ready to exerciſe their miniſtry among pagan nations, wherever the pope, or congregation *de propaganda*, ſhould appoint.

Sacrament, *Feſtival of the Holy*, or of the body of Chriſt, a feſtival obſerved in the Romiſh church, and eſtabliſhed in the following manner. A certain devout woman of Liege, whoſe name was Juliana, declared that ſhe had received a revelation from heaven, intimating to her, that it was the will of God that a peculiar feſtival ſhould be annually obſerved in honour of the Holy Sacrament, or rather of the real preſence of Chriſt's body in that ſacred inſtitution. This pretended viſion was ſupported by the biſhop of Liege, who, in 1246, publiſhed an order for the celebration of this feſtival through the whole province. Eve, one of Juliana's companions, after her death, prevailed with Urban IV. to publiſh, in 1264, a ſolemn edict, impoſing the obſervance of this feaſt on all Chriſtian churches; which was confirmed, in the pontificate of Clement V. by a council held at Vienne, in France, in 1311; and this contributed more to render the doctrine of tranſubſtantiation agreeable to the people than the decree of the council of the Lateran under Innocent III. or than all the exhortations of his ſucceſſors.

Sacrament was alſo uſed, in the Roman law, for a pledge or gage of money, which both the plaintiff and defendant, in a real action, laid down in court to be forfeited by him who ſhould loſe the cauſe. This was particularly called, *ſacramento provocare, rogare, ſtipulari*, &c.

Sacrament, *St.*, in *Geography*, the ſouth-weſternmoſt Portugueſe ſettlement in Brazil, oppoſite to Buenos Ayres. It is alſo called the "Sacramenti Colonia." It was taken by the Spaniards in 1762, after a month's ſiege, but reſtored by the treaty of peace.

SACRAMENTARIANS, a general name given to all ſuch as have publiſhed, or held erroneous doctrines of the ſacrament of the Lord's ſupper.

The term is chiefly applied among Roman Catholics, by way of reproach, to the Lutherans, Calviniſts, and other Proteſtants.

The appellation is alſo applied, by the Lutherans, to thoſe who denied the preſence of the Lord's body in the euchariſt.

SACRAMENTARY, Sacramentarium, an ancient church book, comprehending all the prayers and ceremonies practiſed at the celebration of the ſacraments.

Pope Gelaſius was the firſt author of the ſacramentarium: it was afterwards reviſed, corrected, and abridged, by St. Gregory. It was the ſame with what the Greeks now call *Euchologium*.

SACRAMENTUM Altaris, denotes the ſacrifice of the maſs in Popiſh countries; and with us the Lord's ſupper.

Sacramentum *Deciſionis*, denotes the voluntary and deciſive oath of the civil law; where one of the parties to the ſuit, not being able to prove his charge, offers to refer the deciſion of the cauſe to the oath of his adverſary; which the adverſary was bound to accept, or tender the ſame propoſal back again; otherwiſe the whole was taken as confeſſed by him.

SACRANUS Color, a name given by ſome authors to purple, or very deep red.

SACRAPATAM, in *Geography*, a town of Hindooſtan, in Myſore; 67 miles N.W. of Seringapatam. N. lat. 13° 5′. E. long. 75° 52′.

SACRAPOUR, a town of Hindooſtan, in the Carnatic; 15 miles N.N.W. of Tiagar.

SACRARIUM, among the Romans, a chapel in a private family. It differed from *lararium*, as being dedicated to ſome particular deity, and the lararium to the houſehold gods in general.

SACRATA, in *Ancient Geography*, a town of Italy, in Picenum, S. of Potentia.

SACRATAIN Mountains, in *Geography*, a mountainous ridge of Africa, which extends from Tremecen to Sahara.

SACRE, or Saker, in *Ornithology*, the name of a ſpecies of falcon, called by authors Falco *ſacer* (which ſee), and differently deſcribed by different authors, but by all agreed to be an extremely bold and active bird. The deſcription Mr. Ray has ſelected of it is this: it is a larger bird than the common falcon; its head is flat and of a greyiſh colour; its eyes large, and its beak blueiſh; its back and wings are brown; its breaſt white, and variegated with brown ſpots; its thighs are white within, and its tail is variegated with ſpots of the ſhape of a kidney; its wings are very long, and its legs and feet of a blueiſh colour. The yearling birds of this ſpecies are called *ſori*, and differ conſiderably in their plumage from thoſe of a more advanced age, having their legs paler, and their breaſts leſs ſpotted. It will ſeize upon the largeſt birds, and on young goats, &c. for food. Ray. See Hawking.

SACRED, Sacer, ſomething holy, or that is ſolemnly offered, and conſecrated to God with ceremonies, benedictions, unctions, &c.

Kings, prelates, and prieſts, are held ſacred perſons; abbots are only bleſſed. The deaconhood, ſubdeaconhood, and prieſthood, are all ſacred orders, and are ſaid to impreſs a ſacred indelible character.

The cuſtom of conſecrating kings with holy oil is derived, according to Gutlingius, from the Hebrews; among whom, he agrees with Grotius, it was never uſed but to kings who had not an evident right by ſucceſſion. He adds, that the Chriſtian emperors never uſed it before Juſtin the younger; from whom he takes it to have paſſed to the Goths, &c.

Sacred is alſo applied to things belonging to God, and the church.

Church lands, ornaments, &c. are held ſacred. The ſacred college is that of the cardinals.

Sacred *Majeſty*, is applied to the emperor, and to the king of England; yet Loyſeau ſays it is blaſphemy. See Majesty.

The ancients held a place ſtruck with thunder as ſacred. In the civil law, ſacred place chiefly denotes that, where a perſon deceaſed has been interred.

Sacred *Elixir*. See Elixir.

SACRIFICE, Sacrificium, an offering made to God on an altar, by means of a regular miniſter, as an acknowledgment of his power, and a payment of homage.

Sacrifices (though the term is ſometimes uſed to comprehend all the offerings made to God, or in any way devoted to his ſervice and honour) differ from mere oblations in this, that in a ſacrifice there is a real deſtruction or change of the thing offered; whereas an oblation is only a ſimple offering or gift, without any ſuch change at all: thus, all ſorts of tythes, and firſt-fruits, and whatever of men's worldly ſubſtance is conſecrated to God, for the ſupport of his worſhip and the maintenance of his miniſters, are offerings or oblations; and theſe, under the Jewiſh law, were either of living creatures or other things; but ſacrifices, in the more peculiar ſenſe of the term, were of living creatures, of which five ſorts were preſcribed as allowed by the law, *viz.* bullocks, ſheep, goats, doves, and turtles; beaſts only were allowed in public ſacrifices, and birds in private ones.

Divines divide ſacrifices into *bloody*, ſuch as thoſe of the old law; and *bloodleſs*, ſuch as thoſe of the new law.

They alſo divide them again into *impetratory*, which are thoſe offered to obtain ſome favour of God, or to thank him for ſome already received; and *propitiatory*, which are thoſe offered to obtain forgiveneſs of ſins.

The Phœnicians are uſually held to have been the firſt authors of ſacrifices; Porphyry, indeed, attributes the invention to the Egyptians; who, he ſays, firſt offered the firſt-fruits of their grounds to the gods; burning them upon an altar of turf. At length they came to burn perfumes; and, at laſt, he ſays, they ſacrificed animals; obſerving, that they firſt eat ſome herbs or fruits regularly offered on the altars. He adds, that libations were very frequent, before the ſacrifice of beaſts was introduced.

Ovid obſerves, that the very names *victim* and *hoſtia* import, that they were not ſlain till ſuch time as victories were obtained over enemies; indeed, while men lived on herbs and pulſe, it is no wonder they abſtained from ſacrifices of beaſts; ſince the law of ſacrifices required, that they ſhould eat ſome part of them. In effect, it is ſuppoſed to be this that firſt introduced fleſh as a food, and made man a carnivorous animal.

The truth is, in all antiquity, both ſacred and profane, ſacrifices were ordinarily nothing elſe but holy banquets.

The ſcriptures furniſh us with a ſomewhat different account; Noah certainly ſacrificed animals at his coming out of the ark; and it is even ſuggeſted that Abel himſelf ſacrificed the beſt and fatteſt of his flocks; though Grotius thinks it more probable, he contented himſelf with making a mere oblation of his lambs, &c. to God, without ſacrificing them.

The *origin* of ſacrifices hath been a ſubject of conſiderable controverſy both among Jews and Chriſtians. Maimonides, R. Levi Ben Gerſon, and Abarbanel, among the former, Juſtin Martyr, Irenæus, Tertullian, Chryſoſtom, Theodoret, Cyril of Alexandria, &c. among the early Chriſtians, and Spencer, Grotius, and Warburton, of later date, maintain, that ſacrifices were at firſt an human inſtitution; and it is ſaid, that, in order to prevent their being offered to idols, God introduced them into his ſervice, not that he approved them as good in themſelves, or as proper rites of worſhip. This was done by way of accommodation to the prejudices of the Jewiſh people, who had been trained up in the practice of ſacrifice among the Egyptians, to whom, as we have already ſuggeſted, Porphyry attributes the invention of ſacrificing, whilſt others aſcribe its origin to the Phœnicians. But it has been alleged that it is unreaſonable to ſuppoſe that theſe moſt ſolemn rites of worſhip ſhould have been ordained by a God of infinite wiſdom and purity, who preſented himſelf to the Jews under the character of a ſovereign, jealous of his glory, merely in compliance with the abſurdities of Pagan ſuperſtition; and that to imagine that the ſacrifices of the patriarchs could have received the divine approbation, without the authority of divine inſtitution, is to contradict the general tenor and expreſs language of ſcripture; which ſupplies various inſtances in which God reſented, and ſeverely puniſhed, every ſpecies of will-worſhip (as *e. g.* in the caſe of Nadab and Abihu, who were ſtruck dead for burning incenſe with ſtrange fire), and which expreſsly condemns in Matt. xv. 9. and Coloſſ. ii. 22, 23, that εθελοθρησκεια, which ſprung from the devices and inventions of men.

Dr. Geddes, indeed, (Pref. to Geneſis,) has carried this point yet further; for he contends not only for the human invention of ſacrifice, but for its mere human adoption into the Jewiſh ritual without any ſanction or authority whatever.

On the other hand, it has been maintained that ſacrificing was a mode of worſhip more ancient than idolatry or the inſtitutions of Moſes, and that though various ſuperſtitious cuſtoms were introduced reſpecting it among the Heathens, they were all excluded from the religion of the Hebrews. Moreover, as Moſes did not adopt any of the heathen cuſtoms, it is equally evident that they borrowed nothing from him with reſpect to ſacrifices. With them we find no ſuch diſtinction of ſacrifices as is made in the books of Moſes, ſuch as "burnt-offerings, ſin-offerings, treſpaſs-offerings, and peace-offerings, or of the burning or waving of the ſacrifices." Theſe particulars either had their origin in the time of Moſes, or, as is moſt probably the caſe, were prior to his time, and to the exiſtence of idolatry. From a general view of the ſubject it has been concluded, that the two ſyſtems, *viz.* that of Moſes and that of the Heathens, were not derived from each other; and the ſuperiority of that of Moſes is ſo great, that conſidering his circumſtances and thoſe of his nation at the time, we cannot err in pronouncing that ſacrifices could not have had any human, but muſt have had a divine origin. Accordingly, thoſe who apprehend that ſacrifices were originally of divine inſtitution, allege, that Abel offered his ſacrifice by faith (Heb. xi. 4.), which muſt imply a divine promiſe connected with that rite, and a divine direction for the performance of it (ſee alſo Gen. iv. 4.); that the paſchal lamb, which was a real ſacrifice, was expreſsly inſtituted by God himſelf; and that the deity, who reſented and puniſhed will-worſhip in other caſes (Lev. x. 1, 2.), would not have approved of the patriarch's ſacrificing as he actually did, if he had not commanded it. The advocates for this opinion, therefore, ſuppoſe, that ſacrifices were firſt inſtituted by God himſelf, and enjoined our firſt parents ſoon after the fall; from whom, and afterwards from Noah, they ſay, all nations received them by tradition. Thoſe who apprehend that animal food was not uſed till after the flood, derive from hence an additional argument in favour of the very ancient uſe and probably divine inſtitution of ſacrifices; for the ſkins uſed for cloathing (Gen. iii. 21.), they ſuppoſe muſt have been from beaſts ſlain for this purpoſe.

The divine inſtitution of ſacrifices may, in the firſt inſtance, be reaſonably inferred from the ſtrong and ſenſible atteſtation of the divine acceptance of ſacrifice in the caſe of Abel (above-mentioned), again in that of Noah, afterwards in that of Abraham, and alſo from the ſyſtematic eſtabliſhment of it by the ſame divine authority, in the diſpenſation of Moſes; and whether we conſider the book of Job as the production of Moſes, or of that pious worſhipper of the true God, among the deſcendants of Abraham, whoſe name it bears; or of ſome other perſon who lived a ſhort time after, and compoſed it from the materials left by Job himſelf, the repreſentation there made of God, as *preſcribing* ſacrifices to the friends of Job, on every ſuppoſition, exhibits a ſtrong authority, and of high antiquity, upon this queſtion. The ingenious Mr. Hallet (on Heb. xi. 4.) conſiders the ſingle fact of Abel's ſacrifice as affording ſo ſtrong an argument, that he does not heſitate to pronounce it a *demonſtration* of a divine inſtitution. For, he ſays, Abel's ſacrifice could not have been acceptable, if it had not been of divine appointment, according to that obvious maxim of all true religion, "In vain do they worſhip God, teaching for doctrines the commandments of men." (Mark, vii. 7.) Thus, ſays he, Abel muſt have worſhipped God in vain, if his ſacrificing had been merely a commandment of his father Adam, or an invention of his own. And to make this matter more evident, he aſks, why we do not now offer up a bullock, a ſheep, or a pigeon, as a thank-offering, after any remarkable deliverance, or as an evidence of our apprehenſions of the demerit of ſin. The ſure reaſon is, becauſe we cannot know that God will accept ſuch "will-worſhip," and ſo conclude that we ſhould herein worſhip God in vain. As Abel did not then ſacrifice in vain, it was not "will-worſhip," but a divine appointment. To this he adds, the want of a *right* to ſlay animals before the flood, unleſs conferred by God for this very purpoſe of ſacrifice, gives yet farther confirmation. Dr. Richie remarks, that the divine acceptance is not confined to the ſacrifice of Abel, but we find it alſo extended to other ſacrifices offered under the patriarchal diſpenſation. Such was the caſe in regard to Noah's burnt-offering, and that of Job, (ch. i.) Moreover, the honourable mention which is made of the ſacrifices offered by other pious men in this period of the world, leaves no room to doubt of their having been likewiſe graciouſly accepted by God. We may alſo obſerve, that the oblation of ſome of thoſe early ſacrifices was expreſsly ordered by God himſelf; as the burnt-offering of Abraham (Gen. xxii.), and thoſe which were offered by the three friends of Job (Job, xlii.) Now that it is more natural to think that God would *order* and *accept* of the performance of a mode of worſhip which had been inſtituted by himſelf, than that he would thus countenance one, which had been the product of mere human invention, is a thing which will not bear much diſpute. Thoſe who wiſh to ſee this ſubject farther diſcuſſed, may conſult Outram de Sacrificiis, lib. i. cap. 1. § 3, 4. Richie's Pec. Doctr. vol. i. pp. 149, 150. Barrington's Miſc. Sac. vol. iii. p. 67—71. Heidegg. Hiſt. Patr. Exercit. iii. § 52, 53. tom. i. The laſt-cited writer conſiders the εμπυρισμος, or the burning of the ſacrifice by fire from heaven, a deciſive proof of a divine inſtitution; and that the patriarchs were favoured with this infallible ſign of the divine acceptance of their ſacrifices, the language of ſcripture, as he thinks, leaves us no room to doubt. That the acceptance of Abel's ſacrifice was thus teſtified, is the almoſt unanimous opinion of the fathers. In this the Jewiſh doctors concur; ſee Aben Ezra and Jarchi on Gen. iv. 4. Theodotion tranſlates the verb in this verſe ενεπυρισεν. This manifeſtation of the divine power was undoubtedly vouchſafed in later times. (See Gen. xv. 17. Pſ. xx. 3.) The reliques of this practice are to be found even in the heathen traditions. Thus Servius, in Æn. xii. 200, ſays, "Amongſt the ancients fire was not lighted upon the altar, but by prayer they called down fire from heaven which conſumed the offering."

The principal objections to the divine inſtitution of ſacrifices are founded on the two following conſiderations: 1. The ſilence of the ſacred hiſtorians on this head; which, in a matter of ſo great importance, it is ſaid, is irreconcileable with the ſuppoſition of a divine command: 2. Thoſe paſſages in the Old Teſtament in which God ſeems openly to diſown the inſtitution of ſacrifice. The former objection is thus urged by biſhop Warburton, (Div. Leg. b. ix. ch. ii. vol. iv. pp. 661, 662. ed. Hurd.) "The two capital obſervances in the Jewiſh ritual were the Sabbath and Sacrifices. To impreſs the higheſt veneration on the Sabbath, the ſacred hiſtorian is careful to record its divine original, and can we ſuppoſe that if ſacrifices had the ſame original, he would have neglected to eſtabliſh this truth, at the time that he recorded the other, ſince it is of equal uſe and of equal importance; I ſhould have ſaid, indeed, of much greater?" To this objection it has been replied, that the Hebrews, during their reſidence in Egypt, were in danger of neglecting the obſervance of the Sabbath, and therefore it was neceſſary to enforce their religious obſervance of it by a particular information of the time and occaſion of its firſt inſtitution; but in a country, like Egypt, they were in little danger of loſing their veneration for ſacrifices, and therefore the ſame neceſſity for directing their attention to their inſtitution did not exiſt. Beſides, the rite of ſacrifice, as Delaney obſerves, (Rev. Exam. Diſſ. viii. vol. i. p. 94.) was loaded, at its revival under Moſes, with many additional ceremonies, in order to guard the Jews from the infections of the Heathens, ſo that the law-giver might wiſely deſign, not to recall their attention to its original ſimplicity, leſt they ſhould be tempted to murmur and rebel againſt their own multifarious ritual. Beſides, we ought to take into conſideration the rapid manner in which the ſacred penman has ſketched out the hiſtory of the firſt ages of the world, and which conſtrained him to avoid a circumſtantial detail; and this was the leſs neceſſary on account of the notoriety of the cuſtom, and the circumſtances recited in the hiſtory, from which the practice might be inferred. As to the ſecond objection, we ſhall merely cite the appropriate obſervation relating to it, made by the learned Mede; who ſums up his entire argument in theſe words: "According to one of theſe three ſenſes, are all paſſages in the Old Teſtament diſparaging and rejecting ſacrifices literally to be underſtood; namely, when men preferred them before the greater things of the law;—valued them out of their degree, as an antecedent duty;—or placed their efficacy in the naked rite, as if aught accrued to God thereby; God would no longer own them for any ordinance of his; nor, indeed, in that diſguiſe put upon them, were they."

The univerſality of ſacrifice has been urged by Delaney and Dr. Kennicot in proof of its divine origin. Whatever practice, it is ſaid, has obtained univerſally in the world, muſt have obtained from ſome dictate of *reaſon*, or ſome demand of *nature*, or ſome principle of *intereſt*, or elſe from ſome powerful influence or injunction of ſome Being of *univerſal authority*. The practice of animal ſacrifice did not obtain from *reaſon*; for no reaſonable notions of God could teach men, that he could delight in blood, or in the fat of ſlain beaſts. Now will any man ſay, that we have any *natural inſtinct* to gratify in ſpilling the blood of an innocent creature. Nor could there be any temptation from appetite to do this in thoſe ages, when the whole ſacrifice was conſumed by fire; or when, if it was not, yet men wholly abſtained from fleſh; and conſequently this practice did not owe its origin to any principle of *intereſt*. Nay, ſo far from any thing of this, that the deſtruction of innocent and uſeful creatures is evidently *againſt nature*, *againſt reaſon*, and *againſt intereſt*; and therefore muſt be founded in an *authority*, whoſe influence was as powerful as the practice was univerſal; and that could be no other but the authority of God, the ſovereign of the world; or of Adam, the founder of the human race. If it be ſaid of Adam, the queſtion ſtill recurs, what motive determined *him* to the practice? It could not be nature, reaſon, or intereſt; it muſt therefore be the authority of his ſovereign; and if Adam had enjoined it on his poſterity, it is not to be imagined that they would have obeyed him in ſo extraordinary and expenſive a rite, from any other motive than the command of God. If it be urged, that ſuperſtitions prevail unaccountably in the world; it may be anſwered, that all ſuperſtition has its origin in true religion; all ſuperſtition is an abuſe; and all abuſe ſuppoſes a right and proper uſe. And if this be the caſe in ſuperſtitious practices that are of leſſer moment and extent, what ſhall be ſaid of a practice, exiſting through all ages, and pervading every nation? See Kenn. Two Diſſ. pp. 210. 21. Del. Rev. Exam. Diſſ. 8. p. 85—89.

It is natural, in the diſcuſſion of this ſubject, to advert to the *time* and *occaſion* of the inſtitution of ſacrifice. Admitting that the commiſſion of ſin and the promiſe of a redeemer were the grand objects to which this rite referred, no period ſeems more fit for its appointment than that, at which ſin firſt entered and the promiſe was firſt delivered; that is, the period immediately ſucceeding the Fall. If then ſacrifice be allowed to have been coeval with the fall, every argument which has been adduced to prove that Abel offered ſacrifices in obedience to the *divine injunction*, will apply with increaſed force to ſhew, that Adam muſt have done the ſame. Scripture alſo ſupplies additional confirmation by the fact, which it relates, of the firſt pair having been, by the expreſs command of God, clothed with the ſkins of beaſts. There were no purpoſes for which animals could have been ſlain, unleſs for thoſe of food, ſacrifice, or covering. They were not ſlain for food, as thoſe ſuppoſe who conceive, that in the antediluvian world animal food was not uſed; nor could they have been ſlain merely for covering, ſince it cannot be imagined that Adam would, immediately after the ſentence of the divine diſpleaſure, have dared to kill God's creatures without his permiſſion; nor is it likely that God ſhould order them to be ſlain ſolely for their ſkins, when man could have been ſupplied with ſufficient covering from the hair and wool; and when, the fleſh of the animal not being permitted for food, there muſt have been an unneceſſary waſte of the creatures. It muſt follow, then, that they had been ſlain with a view to ſacrifice. This alone ſupplies an adequate reaſon.

The whole of the animal (if the offering be ſuppoſed an holocauſt, as there is reaſon for ſuppoſing all ſacrifices to have been until the Moſaic inſtitution) would have been devoted to the uſes of religion, except the ſkin, which would be employed for the purpoſe of cloathing. It has been maintained, that from the time of Abel's ſacrifice to the giving of the law, the ſacrificial offering is deſcribed by no other appellation than that of חלה or זבח, the *holocauſt*, or burnt-offering, and the *Zabach*, or immolated victim. See Gen. viii. 20. ch. xxii. Exod. x. 25. xviii. 12. Job, i. 5. xlii. 7, 8. Numb. xxiii.

Dr. Richie is of opinion, that all the oblations prior to the law, excepting that of Cain, were holocauſts: however this be, it muſt be allowed, as others have conceived, that they were animal ſacrifices.

The next ſubject of enquiry reſpects the *nature* and *deſign* of ſacrifices. Some have maintained that ſacrifices ſhould be conſidered as *gifts*, intended to ſooth and appeaſe the Supreme Being, in like manner as they are found to conciliate the favour of men. Spencer propoſes this theory; and the author of the "Scripture Account of Sacrifices" adopts the ſame, under certain modifications, repreſenting ſacrifices as ſacred gifts, of things firſt received from God, and preſented back to him for an external expreſſion of gratitude, acknowledgment, faith, and every pious ſentiment. Dr. Prieſtley has adopted a ſimilar theory, aſſerting that ſacrifices aroſe from anthropomorphitical notions of God, and that they are to be conſidered originally as gifts of gratitude; and, like the author laſt cited, he regards of courſe an offering for ſin, as differing in no reſpect from any other ſort of oblation. Mr. H. Taylor, better known under the aſſumed appellation of "Ben Mordecai," alſo deduces ſacrifices from the notion of gifts; pronouncing them to have been nothing but free-will offerings of the firſt fruits of the earth, or fold; and he expreſsly defines "ſacrifice to be a ſacred gift, ſet apart to God, whereby the ſacrificer ſhewed his readineſs to part with his property to religious uſes, and thereby openly and publicly manifeſted his worſhip of God." He thus totally excludes the generally received notion of atonement, and accordingly he ſubjoins, that "atonement and propitiation had *no* other meaning or deſign than to *purify*, or *ſanctify*, or *ſet apart*, any perſon or thing to the ſervice of God, by ſeparating them from common uſe." Dr. Sykes, in his "Eſſay on Sacrifices," explains them as "federal rites," and as "implying the entering into friendſhip with God, or the renewal of that friendſhip, when broken by the violation of former ſtipulations;" and he ſays, that the origin of ſacrifices may be accounted for on the ſuppoſition, "that eating and drinking together were the known ordinary ſymbols of friendſhip, and were the uſual rites of engaging in covenants and leagues;" this mode of entering into friendſhip and forming leagues with each other being transferred by the ancients to their gods: and in confirmation of this he adduces inſtances from Homer, Virgil, Max. Tyr. and others, to ſhew that they imagined that their gods did actually eat with them, as they ate with their gods. The learned Mede and Cudworth, in the courſe of their reſpective arguments to eſtabliſh the euchariſt as a federal rite, had, long before the age of Sykes, maintained the doctrine for which he contends; and in this they were followed by Dr. Waterland, who has repeated their reaſonings in his "Nature, Obligation, and Efficacy of the Chriſtian Sacrament conſidered." Biſhop Warburton (Div. Leg. b. ix. c. 2.) repreſents the whole of ſacrifice as "ſymbolical." The offerings of firſt-fruits he holds to be an action expreſſive of gratitude and homage; and thus he accounts for the origin of ſuch ſacrifices as were euchariſtic; and in thoſe that are expiatory denoting the acknowledgment of and contrition for ſin; ſtrongly expreſſed by the death of the animal, repreſenting *that* death, which the offerer confeſſed to be his own deſert. To theſe different hypotheſes, it may *generally* be replied (ſays Dr. Magee, ubi infra), that the *fact* of Abel's ſacrifice ſeems inconſiſtent with them all:—with the firſt, inaſmuch as it muſt have been antecedent to thoſe diſtinctions of property, on which alone experience of the effects of gifts upon men could have been founded; the introduction of property, or excluſive right among mankind being fixed by Dr. Rutherforth (from Gen. iv. 20.) no higher than the time of Jubal, the eighth from Adam; beſides, no being, as Kennicot remarks, has a right to the lives of other beings, but the Creator, or thoſe on whom he confers that right; ſo that if God had not given Abel ſuch a right, even the exiſtence of the notion of property, and the familiar uſe and experience of gifts, could not have led him to take away the life of the animal as a gift to the Almighty; nor, if they could have done ſo, can we conceive, that ſuch an offering would have been graciouſly accepted.—With the ſecond hypotheſis the above-mentioned fact is inconſiſtent, inaſmuch as it took place ſeveral ages prior to that period, at which both the words of Scripture, and the opinions of the wiſeſt commentators, have fixed the permiſſion of animal food to man, which is ſaid to take its date from the age of Noah.—With the third hypotheſis it is, according to the author now cited, inconſiſtent, as the language, which Scripture expreſsly ſtates to have been derived to our firſt parents from divine inſtruction, cannot be ſuppoſed ſo defective, in thoſe terms that related to the worſhip of God, as to have rendered it neceſſary for Abel to call in the aid of actions, to expreſs the ſentiment of gratitude or ſorrow; and ſtill leſs likely is it, that he would have reſorted to that *ſpecies* of action, which in the eye of reaſon muſt have appeared diſpleaſing to God,—the ſlaughter of an unoffending animal. A late ingenious writer, no leſs reſpected and eſteemed for his liberality and candour than for his biblical learning, even by thoſe who differ from him in his theological creed, conceives the rite of ſacrificing to have been a "ſymbolical action," adapted and intended to convey important inſtruction. This opinion he ſupports by an appeal to the nature and form of ſacrifices, to their origin, and to the ſentiments of thoſe who practiſed them. The inſtruction thus conveyed, as he ſuppoſes, comprehended the following principles:—that ſin is an offence againſt the bleſſed God, moſt heinous in its evil nature, aggravated in its inſeparable though varying circumſtances, and abſolutely inſufferable before his holy preſence:—that the eſſential righteouſneſs of Jehovah renders it neceſſary and inevitable that ſin ſhould be puniſhed:—that death, in all its tremendous meaning and extent, is the proper puniſhment of ſin:—that the ſinner is totally unable, by any powers or reſources of his own, to eſcape the puniſhment due to his offence:—yet that God is full of mercy, and graciouſly willing to pardon the guilty offender:—that the way of pardon is through the ſubſtitution and ſufferings of a piacular victim: and that, on the part of the ſuitor for pardoning mercy, there muſt be ſuch a proprietorſhip in the victim as to create a beneficiary intereſt; and ſuch a moral diſpoſition as cordially acquieſces in the punitive acts of divine juſtice.

In this ſolemn and affecting manner was it declared to ages and generations, that "God is the righteous Judge, of purer eyes than to behold evil, and who cannot countenance iniquity; that his wrath is revealed from heaven againſt all ungodlineſs and unrighteouſneſs of men; that the wages of ſin is death; that there is forgiveneſs with the Lord, and plenteous redemption; but that without the ſhedding of blood there is no remiſſion."

This writer further proceeds to ſhew, that the ancient ſacrifices were deſigned repreſentations of the work and office of Chriſt as a ſuffering mediator; and, moreover, that what they could only repreſent and teach, his ſacrifice did truly and actually effect. The truth of the firſt of theſe propoſitions he labours to evince from explicit declarations of the O. T. (ſee Pſ. xl. 6. 8. Lev. vi. 2. 7. Pſ. cx. 4. Zech. vi. 13. Dan. ix. 24—27. Iſ. liii. 4, &c.), and alſo from the authority of the N. T. which, as he apprehends, repreſents the ſufferings of Chriſt as partaking of the nature of a ſacrifice for ſin. (See John, i. 29. 1 Cor. v. 7. Eph. v. 2. Rom. iii. 25. 1 Pet. i. 19. 1 John, ii. 2. Heb. vii. ix. x. Luke, xxiv. 46. Rev. v. 12.) To the plain evidence of Scripture he ſubjoins the conſideration, that within a few years after the death of Chriſt, the offering of the daily ſacrifice in the temple of Jeruſalem utterly ceaſed, and has never been reſtored. Our author likewiſe ſtates, that all the objects which the typical ſacrifices repreſented or declared, are really effected by the ſacrifice of Chriſt. See Dr. Pye Smith's "Diſcourſe on the Sacrifice of Chriſt, its Nature, Value, and Efficacy." London. 1813.

Dr. Magee concurs in ſomewhat ſimilar repreſentations of the nature and intention of animal ſacrifices under the Jewiſh diſpenſation. The ſacrifice of Abel, and the patriarchal ſacrifices down to the giving of the law, ſays this writer, record and exemplify thoſe momentous events in the hiſtory of man,—the death incurred by ſin, and that inflicted on our Redeemer. When this expreſſive act of primeval worſhip was corrupted and perverted, in proceſs of time, it pleaſed God to ſelect a peculiar people, to whom, by expreſs revelation, the knowledge of the one God was reſtored, and the ſpecies of worſhip ordained by him from the beginning, particularly enjoined. Accordingly we find, that the principal part of the Jewiſh ſervice conſiſted of ſacrifice, to which the virtue of expiation and atonement is expreſsly annexed. The Jewiſh ſacrifices, therefore, ſeem to have been deſigned, in our author's opinion, as thoſe from the beginning had been, to prefigure that *one*, which was to make atonement for all mankind. And as *in* this all were to receive their conſummation, ſo *with* this they all conclude; and the inſtitution cloſes with the completion of its object. The ſacrifices under the temporal and ceremonial diſpenſation of the law, ſays this writer, had a real efficacy in releaſing thoſe who were ſubjected to it from its temporal penalties and ceremonial diſqualifications; in like manner as the one great ſacrifice under the goſpel poſſeſſes the power to releaſe mankind at large from the everlaſting penalties of that ſpiritual law under which all men are bound, and to cleanſe the conſcience from thoſe moral impurities, which forbid all acceſs to that Holy Being, who is to be worſhipped only in ſpirit and in truth. The expiation then, under the old law, was no leſs real than that which is prefigured under the new, whilſt it bore to the diſpenſation of which it was a part, the ſame proportion which that more perfect expiation by the death of Chriſt bears to the more perfect diſpenſation to which it appertains; the wiſdom of the divine contrivance, in this as in the other branches of providential arrangement, rendering that which was complete and effectual for its own immediate purpoſe, at the ſame time introductory and ſubſervient to other and more important objects. As the ſacrifices under the law were preparatory to that of Chriſt, the ſacred writers in the N. T. naturally adopt the ſacrificial terms of the ceremonial ſervice, and by their reference to the uſe of them as employed under the law, clearly point out the ſenſe in which they are to be underſtood in their application under the goſpel. In examining then the meaning of ſuch terms, when they occur in the *New* Teſtament, we are clearly directed to the explanation that is circumſtantially given of them in the *Old*. Thus, when we find the virtue of atonement attributed to the ſacrifice of Chriſt, in like manner as it had been to thoſe under the law; by attending to the repreſentation ſo minutely given in the latter, we are enabled to comprehend its true import in the former. If it be allowed that the ſacrifice of Chriſt was the great object held to view in the appointment of all preceding ſacrifices, it muſt follow, that the writers of the N. T. were ſo far from employing the ſacrificial terms in mere accommodation to Jewiſh notions, as Mr. H. Taylor, Dr. Prieſtley, and others imagine, that they muſt have uſed them as *primarily* belonging to the death of Chriſt; and as in ſtrict accuracy more aptly characterizing the Chriſtian ſacrifice, than thoſe ſacrifices of typical import to which they had been applied under the law. It is obſerved by the excellent archbiſhop Tillotſon (vol. i. p. 440.), that the notion of the expiation of ſin by ſacrifices of one kind or other ſeems to have obtained very early in the world ; and to have had an univerſal reception in all times and places. He adds, that a great part of the Jewiſh religion and worſhip was a plain condeſcenſion to the general apprehenſions of men, concerning this way of appeaſing the Deity by ſacrifice ; and the greateſt part of the Pagan religion and worſhip was likewiſe founded upon the ſame notion and opinion, which, becauſe it was ſo univerſal, ſeems to have had its original from the firſt parents of mankind, either immediately after the creation, or after the flood, and thence, as to the ſubſtance of this notion, to have been derived and propagated to all their poſterity. With this general notion of mankind, whatever the ground or foundation of it might be, God was pleaſed ſo far to comply, as once for all to have a general atonement made for the ſins of all mankind, by the ſacrifice of his only Son. The ſame author elſewhere obſerves, that God was pleaſed to comply with thoſe notions that had generally poſſeſſed mankind ſo far, as, in the frame of the Jewiſh religion, (deſigned for a type of the more perfect inſtitution of the Chriſtian religion, and a preparation for it,) to appoint ſacrifices to be ſlain and offered up for the ſinner ; and that afterwards, in the diſpenſation of the goſpel, the ſame condeſcenſion to the apprehenſions of mankind was likewiſe obſerved. Tillotſon's idea correſponds with that which was afterwards adopted by Spencer, and which has been already mentioned.

It has been maintained by many writers on this ſubject, that expiatory ſacrifice, in the ſtrict and proper ſenſe of the word, was a part of the Moſaic inſtitution ; and that propitiatory ſacrifices not only exiſted through the Gentile world, but had place under the law of Moſes. It has alſo been alleged, that the Moſaic ſacrifice had a vicarious import ; or, in other words, that it expreſſed an acknowledgment of what the ſinner had deſerved : this, it has been aſſerted, not only ſeems directly ſet forth in the account of the firſt offering in Leviticus (xix. 20. 22.), where it is ſaid of the perſon who brought a free-will offering, " he ſhall lay his hand upon the head of the burnt-offering, and it ſhall be *accepted for* him, to make atonement for him ;" but the ceremony of the *ſcape-goat* (which ſee), on the day of expiation, is thought to place this matter beyond doubt.

Dr. Magee, a writer to whom we have already referred, uſes the expreſſion vicarious *import* rather than *vicarious*, to avoid the charge made againſt the doctrine of atonement, of ſuppoſing a real ſubſtitution in the room of the offender, and a literal tranſlation of his guilt and puniſhment to the immolated victim ; a thing utterly incomprehenſible, as neither *guilt* nor *puniſhment* can be conceived, but with reference to *conſciouſneſs*, which cannot be transferred. But, he ſays, that to be expoſed to *ſuffering* in conſequence of another's guilt ; and thereby, at the ſame time, to *repreſent* to the offender, and to releaſe him from, the puniſhment due to his tranſgreſſion, involves no contradiction whatever. In this ſenſe, the ſuffering of the animal may be conceived a ſubſtitute for the puniſhment of the offender ; inaſmuch as it is in virtue of that ſuffering the ſinner is releaſed. The offering of the animal, ſays this writer, ſlain in ſacrifice may be conſidered vicarious in *ſymbol* (or, as repreſenting the penal effects of the offerer's demerits, and his releaſe from the deſerved puniſhment, in conſequence of the death of the victim), and ſeems to require little proof, beyond the paſſages of Scripture to which we have already referred. On the other hand, the vicarious nature of the Moſaic ſacrifices has been objected to by Dr. Sykes, Mr. H. Taylor, and many others. The objections againſt this theory have been claſſed by the writers now mentioned, under the following heads :—1. It is no where *ſaid* in the O. T. that the life of the victim was given *as a vicarious ſubſtitute* for the life of him who offered it. 2. The atonement was not made by the *death* of the animal, but by the ſprinkling of the blood at the altar. 3. No atonement *could* be made, where *life* was forfeited. 4. Atonements were made by the ſacrifice of animals in ſome caſes where *no guilt was involved.* And, 5. Atonements were ſometimes made *without the death* of an animal, or any bloodſhedding whatever. This, ſays Dr. Magee, is the ſum total of the arguments collected by the induſtry of theſe writers, againſt the notion of the vicarious nature of ſacrifice. To the firſt it may be anſwered, that it is repeatedly aſſerted in the O. T. that, in caſes where puniſhment had been incurred, and even where life itſelf was forfeited, the due oblation of an animal in ſacrifice was effectual to procure the reverſal of the forfeiture, and the pardon of the offender : that is, the death of the animal was ſo far repreſented, as ſtanding in place of the offender's puniſhment, and in ſome caſes, even of his death, that through it, whatever might be the mode of its operation, the offerer was enabled to eſcape. But, as Dr. Magee does not contend for a ſtrict vicarious ſubſtitution, or literal equivalent, no ſuch notion belonging to the doctrine of atonement, it is not neceſſary that any preciſe and appropriate caſe expreſſing it ſhould be produced. The words כפר and נשא, in their ſacrificial application, he ſays, ſufficiently admit the *vicarious import :* and the deſcription of the ſacrificial ceremony, and its conſequences, eſpecially in the inſtance of the ſcape-goat, poſitively *prove* it : and beyond this nothing further can be required.

To the ſecond objection it is replied, that it was by the ſprinkling of the blood before the altar, according to the preſcribed rites of ſacrifice, the life of the animal was offered ; the law expreſsly declaring the life to be in the blood. See on Lev. xvii. 11. Ainſworth and Patrick ; and for the opinion of the Jewiſh doctors, Outram de Sacrif. l. i. c. 22. § 11.

To the third objection Dr. Magee replies, that it is untrue, in point of fact, ſophiſtical in point of reaſoning, and impertinent in point of application.

We ſhall here only ſelect what our author has urged on the laſt of theſe points, *viz.* that the whole argument is inapplicable : becauſe, as he ſays, they who held the doctrine of a vicarious *puniſhment* do not find it neceſſary to contend, that the evil inflicted on the victim ſhould be exactly the ſame in quality and degree with that denounced againſt the offender ; it depending upon the will of the legiſlator, what ſatisfaction he will accept in place of the puniſhment of the offender. (See Outram de Sac. l. i. c. 21. § 1, 2. 9.) But ſtill leſs will this argument apply, where vicarious *puniſhment* is not contended for, but merely an emblematic ſubſtitute, the reſult of inſtitution, and which in no reſpect involves the notion of an equivalent.

To the fourth objection it is anſwered, that ſome ſacrifices were not vicarious, inaſmuch as there were ſome that were not for ſin ; it does not follow that, where moral guilt was involved, the ſacrifice was not vicarious. To the fifth and laſt objection Dr. Magee replies, that, although no vicarious ſubſtitution of a life could be conceived, where life was not given at all ; yet it does not from hence follow, that where a life *was* given, it might not admit a vicarious import. The offering of *flour* was made *only* where the offerer was ſo poor that he could not poſſibly procure an animal for ſacrifice.

In connection with the ſubject of ſacrifices in general, we cannot forbear adverting to the opinions of different writers with regard to the ſacrifice of Chriſt. The texts to which we are referred, that deſcribe Chriſt's death as a ſacrifice for ſin, are as follow : *viz.* Iſ. liii. 5—8. Matt.

xx. 28. xxvi. 28. Mark, x. 45. Acts, viii. 32, 33. Rom. iii. 24, 25. iv. 25. v. 6—10. 1 Cor. v. 7. xv. 3. 2 Cor. v. 21. Eph. i. 7. Col. i. 14. 1 Tim. ii. 6. Heb. i. 3. ii. 17. ix. 12—28. x. 10. 14. 18. 1 Pet. i. 18, 19. 1 John, iv. 10. Rev. v. 9—12. xiii. 8. All theſe, it is alleged by ſome authors, and ſeveral other paſſages, ſpeak of the death of Chriſt, in the ſame ſacrificial terms, that had been applied to the ſin-offerings of old; ſo that they who would reject the notion of Chriſt's death, as a true and real ſacrifice for ſin, muſt refine away the natural and direct meaning of all theſe paſſages; or, in other words, they muſt new-model the entire tenor of the Scripture language, before they can accompliſh their point. Some writers of this claſs aſſert, that, by the ſacrifice of himſelf, Jeſus Chriſt voluntarily ſuſtained the guilt and puniſhment of ſin;—that the idea of ſubſtitution or vicarious ſuffering was eſſential to the theory of ſacrifices, as underſtood and practiſed by profane and ſacred antiquity, and originally inſtituted by God himſelf;—that in virtue of the union conſtituted by the wiſdom and grace of God, between the Saviour and mankind, he voluntarily *put himſelf in their place*, and ſuffered as if he had been a tranſgreſſor, in order that they might be delivered from the guilt, or legal condemnation, of their ſins, and by conſequence from the pollution and practical power of ſin;—and that the divine wiſdom formed a moral conſtitution by which the guilt and puniſhment of ſin, ſo far as was neceſſary for the purpoſes of ſacrificial atonement, were aſſumed by the ſinleſs victim, and the worth of his obedience and ſufferings became imputable, on grounds of right and reaſon, to the ſinner who is brought to a cordial acquieſcence in this plan of holineſs and grace, &c. &c. (Smith's Diſc. *ubi ſupra.*) Others have been of opinion, that, in alluſion and accommodation to the ancient and almoſt univerſal practice of ſacrificing, and with a view to facilitate the reception of Chriſtianity by gratifying the prejudices of the Jews, the New Teſtament repreſents Jeſus Chriſt as having offered a ſacrifice to God; though, in a real and proper ſenſe, he did no ſuch thing. Perſons belonging to this claſs affirm, that as the Jews had a profound veneration for their temple, their prieſthood, and their altar, the firſt Chriſtian teachers endeavoured to ingratiate themſelves, and procure acceptance to their ſyſtem, by finding in it likewiſe a prieſt, a ſacrifice, and an altar. Terms, it has been ſaid, were borrowed from the ſacrifices of the law to expreſs the death and ſufferings of Chriſt, in a manner more lively and impreſſive. As a proof that the application of theſe terms is but figurative, it is contended, 1ſt, that the death of Chriſt did not correſpond *literally* and exactly to the ceremonies of the Moſaic ſacrifice; 2dly, that being in different places, compared to different kinds of ſacrifices, to *all* of which it could not poſſibly correſpond, it cannot be conſidered as exactly of the nature of any; and, laſtly, that there was no ſuch thing as a ſacrifice of *propitiation* or *expiation of ſin*, under the Moſaic diſpenſation at all; this notion having been entirely of heathen origin. Hence they have been led to entertain a different notion of atonement from that which has been above ſtated.

For a ſummary of the different opinions that have been entertained with regard to the doctrine of *Atonement*, we refer to that article; and for a fuller diſcuſſion of the ſubject, the reader may conſult Dr. Magee's "Diſcourſes and Diſſertations on the Scriptural Doctrine of Atonement and Sacrifice," in 2 vols. 8vo. ed. 3. London, 1812.

We ſhall now return to the conſideration of ſacrifices in general, and more particularly of the prevalence of human ſacrifices in the Gentile world. Of this ſavage cuſtom, M. de Paauw (Rech. Phil. ſur les Amer. v. i. p. 211.) aſſerts, that there is no nation mentioned in hiſtory, which we cannot reproach with having more than once made the blood of its citizens ſtream forth, in holy and pious ceremonies, to appeaſe the divinity when he appeared to be angry, or to move him when he appeared indolent. Of this poſition, ſays Dr. Magee (*ubi ſupra*), both ancient and modern hiſtorians ſupply the fulleſt confirmation. Heliodorus informs us, that the Ethiopians were required by their laws to ſacrifice boys to the ſun, and girls to the moon. Among the Phœnicians, it was cuſtomary in great and public calamities, for princes and magiſtrates to offer up in ſacrifice to the avenging demons the deareſt of their offspring. Herodotus deſcribes it as a cuſtom with the Scythians to ſacrifice every 100dth man of their priſoners to their god Mars. Keys repreſents the ſpreading oaks under which they were uſed to perform their ſanguinary rites, as being always profuſely ſprinkled with the blood of the expiring victims. The Egyptians, as we learn from Diodorus Siculus, ſacrificed red-haired men at the tomb of Oſiris, from which, as he ſays, miſunderſtood by the Greeks, aroſe the fable of the bloody rites of Buſiris. With theſe people it was cuſtomary to ſacrifice to the river Nile a young and beautiful virgin, by throwing her, decked in the richeſt attire, into the ſtream; and this cuſtom is ſaid to remain to the preſent day. (See Nile.) The ſame cruel practice prevailed among the Chineſe, with a view to pacify their offended deity, and to avert from the nation dreadful calamities. The Perſians alſo were addicted to the ſame uſage; as appears by the teſtimonies of Herodotus, Xenophon, Arrian, Ovid, Strabo, Suidas, &c.: and Herodotus ſays it was the Perſian cuſtom to offer human victims by inhumation. The ancient Indians, likewiſe, are repreſented, both by ſir W. Jones (Aſiat. Reſ. vol. i.) and Mr. Wilkins, as having been polluted by the blood of human victims: the practice ſeems to have been enjoined by the very code of Brahma. (See Maurice's Ind. Antiq. p. 164—166.) Of the ſame horrid nature were the rites of the early Druids. (See Druid.) It is ſaid to have been the cuſtom of the Gallic Druids, to ſet up an immenſe gigantic figure of a wicker man, in the texture of which they entwined above 100 human victims, and then conſumed the whole as an offering to their gods. (See Clarke's Cæſar.) The Druids of Mona were no leſs cruel in their religious ceremonies than their brethren of Gaul. Tacitus repreſents it as their conſtant uſage to ſacrifice to their gods the priſoners taken in war. In the northern nations, theſe tremendous myſteries were uſually buried in the gloom of the thickeſt woods. We learn from Porphyry, that it was anciently a rule with every Grecian ſtate, before they marched againſt an enemy, to ſupplicate their gods by human victims; and accordingly we find human ſacrifices attributed to the Thebans, Corinthians, Meſſenians, and Temmeſenſes, by Pauſanias; to the Lacedæmonians, by Fulgentius, Theodoret, and Apollodorus; and to the Athenians, by Plutarch; and with the Athenians, as well as the Maſſilians, it was a cuſtom of ſacrificing a man every year, after loading him with dreadful curſes, that the wrath of the gods might fall upon his head, and be turned away from the reſt of the citizens. The practice prevailed alſo among the Romans, as we learn from Livy, Plutarch, and Pliny. The ſame cruel mode of appeaſing their offended gods is aſcribed to all the other heathen nations; to the Getæ, by Herodotus; to the Leucadians, by Strabo; to the Goths, by Jornandes; to the Gauls, by Cicero and by Cæſar; to the Heruli, by Procopius; to the Britons, by Tacitus and by Pliny; to the Germans, by Tacitus; to the Carthaginians, by Sanchoniathon, by Plato, by Pliny, by Silius Italicus, by Juſtin, by Ennius, and by Diodorus. The latter writer reports, that they offered 200 victims at once, and that this horrid ſuperſtition was carried to ſuch an extreme, as that it was uſual for the parent himſelf to ſlaughter the deareſt and moſt beautiful of his offspring at the altars of their bloody deities. We learn from Scripture, that the practice exiſted in Canaan, before the Iſraelites came thither. Of the Arabians, the Cretans, the Cyprians, the Rhodians, the Phoceans, thoſe of Chios, Leſbos, and Tenedos, the ſame fact may be affirmed. (See Porphyr. apud Euſeb. P. Evang. lib. iv. c. 16.) The ſame is charged upon the inhabitants of Pella. The univerſality of the practice in the ancient Heathen world cannot be diſputed. Upon the whole, it is evident that the Gentile religion, in early ages, appears to have been in a high degree, to ſay the leaſt of it, a religion of fear; and the ſame principle has very much and too generally actuated it to the preſent day. Slaves have been very commonly ſacrificed in later times, eſpecially among the northern nations; and we are informed by Mallet (North. Antiq. vol. i.), that the practice was not aboliſhed in thoſe regions until the 9th century; and in the iſland of Rugia, as Jortin ſays, on the authority of Fleury, this cuſtom ſubſiſted ſo late as the cloſe of the 12th century. The ſame dreadful practice is found, even now, to exiſt in Africa, where captives, taken in war, are ſacrificed to their fetiches; and among the iſlanders of the South ſeas, as we learn from captain Cook and other voyagers, human ſacrifices are very frequent. Beſides, the annual ſacrifices of the Mexicans have required many thouſands of victims; and in Peru, 200 children have been devoted for the health of the Inca. Mr. Maurice alſo informs us, that at this day, among certain tribes of the Mahrattas, human victims, diſtinguiſhed by their beauty and youthful bloom, are fattened like oxen for the altar; nor is the notion of the efficacy of human ſacrifice extinct in India at the preſent time. For various inſtances of this kind, we refer to Dr. Magee, *ubi ſupra;* Dr. Smith's Diſc.; Grotius de Satisf. Chriſti; Dr. Owen, De Natura, &c. Veræ Theol. &c. &c.

Macrobius tells us, that the Egyptians, long accuſtomed to bloodleſs ſacrifices, being at length obliged to admit the worſhip of Serapis and Saturn, to whom *victims* were to be ſacrificed, would not allow their temples to be built in the cities. Theſe victims, however, or bloody ſacrifices, at length obtained, in excluſion of almoſt all the reſt: the moſt uſual of theſe among the ancients, were bulls, oxen, cows, ſheep, and lambs, becauſe theſe were the moſt ordinary food of man.

The *manner* of ſacrificing among the ancient Hebrews is amply deſcribed in the books of Moſes. That in uſe among the Romans is as follows. In the choice of the victim, care was taken it were without blemiſh or imperfection; its tail not too ſmall at the end; the tongue not black, nor the ears cleft; and the bull, ſuch as had never been yoked. The victim being pitched upon, they gilded his forehead and horns, eſpecially if a bull, heifer, or cow. The head they alſo adorned with a woollen infula, whence hung two rows of chaplets with twiſted ribbands; and on the middle of the body a kind of ſtole, pretty large, hung down on both ſides: the leſſer victims were only adorned with bundles of flowers and garlands, together with white tufts or wreaths.

The victims, thus made ready, were brought before the altar: the leſſer were not led in a ſtring, but driven to the place: the greater were conducted in a halter: if they made any ſtruggle, or refuſed to go, the reſiſtance was taken for an ill augury, and the ſacrifice was often ſet aſide. The victim, thus brought before the altar, was examined very circumſpectly, to ſee if there were no defect in it; then the prieſt, being clad in his ſacerdotal habit, and accompanied with the ſacrificers and other attendants, and being waſhed and purified according to the ceremonies preſcribed, began the ſacrifice, with making a loud confeſſion of his unworthineſs, acknowledging himſelf guilty of divers ſins; for which he begged pardon of the gods, hoping they would be pleaſed to grant his requeſts. The confeſſions were like thoſe of the Hebrews; with this difference, that the Pagans confeſſed the frailty of mankind, and owned their faults; the Jews confeſſed chiefly the greatneſs of God, accompanying it with hymns and muſical inſtruments.

The confeſſion being finiſhed, the prieſt cried aloud, *Hoc age!* i. e. compoſe yourſelves, and mind your buſineſs; and preſently an uſher, holding a rod in his hand, called *commentaculum*, went through the temple, and made all thoſe withdraw who were not initiated in the myſteries of religion, or ſuch as were excommunicated.

Sacrifices among the Greeks were of four kinds, *viz.* 1. Free-will offerings, or ſuch as were paid in conſequence of a vow, χαριϛηρια and ευκταια; for a victory obtained, the firſt-fruits offered by huſbandmen for a plentiful harveſt, and the like. 2. Propitiatory offerings, ιλαϛικα, to avert the anger of ſome offended deity, and ſuch were all ſacrifices uſed in expiation. 3. Petitionary ſacrifices, αιτητικα, for ſucceſs in any enterpriſe. 4. Sacrifices expreſsly commanded by ſome oracle or prophet, τα απο μαντειας.

The cuſtom of the Greeks, from whom the Romans borrowed theirs, was, that the prieſt coming to the altar, ſhould aſk aloud, Τις τι δε? Who is here? The people anſwered, Πολλοι και αγαθοι, Many good perſons: then the uſher went through the temple, crying, Εκας εκας εϛε, βεϐηλοι, that is, Out with the wicked. The Romans commonly uſed the words, *Nocentes, Profani, abſcedite.* All thoſe who were driven out of the temples among the Greeks, were comprehended under theſe general words, βεϐηλοι, αμυητοι, ακαθαρτοι. The profane being withdrawn, they cried, *Favete linguis*, or *animis*, and *Paſcite linguam*, to require ſilence and attention during the ſacrifice.

Theſe ceremonies ended, the chief ſacrificer being ſat down, and the reſt of them ſtanding, the magiſtrates or private perſon, who offered ſacrifice, came before him, and preſented him with the firſt-fruits and victim, and ſometimes made a ſhort diſcourſe, by way of compliment, as we find Homer makes Ulyſſes do, when he preſented the high prieſt with Iphigenia to be ſacrificed. As any perſon came to preſent his offering, he waſhed his hands in a place appointed in the temple for that purpoſe.

Laſtly, when the offering was made, the prieſt that officiated perfumed the victim with incenſe, and ſprinkled it with the luſtral water; and having waſhed his hands, and got up again to the altar, he prayed to the god to whom he preſented the ſacrifice, with a loud voice, that he would accept of thoſe offerings, and be pleaſed with the victim he ſacrificed to him for the public good, and for ſuch and ſuch things in particular. In the cloſe of the offertory and prayer, made by the prieſt to the god, he came down the ſteps of the altar, and from the hand of one of his aſſiſtants, received the ſacred paſte, called *mola ſalſa*, made of barley or wheat flour, mixed with ſalt and water, which he threw upon the head of the victim, ſprinkling a little wine upon it, which was called *immolatio.* Servius ſays, the prieſt ſcattered little bits of this paſte upon the head of the victim, and alſo on the altar where the ſacred fire burned, and on the knives, by way of conſecration.

He then took wine in a veſſel called *ſimpulum*, and having taſted it himſelf firſt, and made his aſſiſtants do the ſame, to ſhew that they partook of the ſacrifice, he poured it between the horns of the victim, pronouncing theſe words of the conſecration, *Mactus hoc vino inferis eſto.* This done, he pulled off the hairs from between the horns, and threw them into the fire; and commanded the victimarius (who aſked him, *Agon?* Shall I ſtrike?) to knock down the victim with a blow on the head with a hammer or axe; upon which another aſſiſtant, named *popa*, preſently thruſt a knife into its throat; whilſt a third received the blood, with which the prieſt ſprinkled the altar.

When the victim was ſlain, they flayed him, if it was not a burnt-offering (for they then burned ſkin and all); they then took the fleſh of the head, and adorning it with garlands and flowers, faſtened it to the pillars of the temples, as well as the ſkins, as enſigns of religion; carrying them about in proceſſion in public calamities. Not but that the prieſts oft wore the ſkins, and others went to ſleep upon them in the temple of Æſculapius and Faunus, that they might receive favourable reſponſes in their dreams, or be cured of their maladies. They then opened the victim's entrails, and after circumſpectly viewing them, to draw preſages therefrom, according to the art of the aruſpices, they floured them with meal, and ſprinkled them with wine, and made a preſent of them to the gods, *reddebant exta diis*, by throwing them into the fire in ſmall bits, boiled or parboiled; and hence the entrails were called *porricæ*.

The entrails being burned, and the other ceremonies finiſhed, they believed the gods to be ſatisfied; and that they could not fail to find the vows accompliſhed, which they expreſſed by the word *litare*, *q. d.* all is finiſhed, and well done; whereas *non litare*, on the contrary, intimated there was ſomething wanting to the perfection of the ſacrifice, and that the gods were not appeaſed. The prieſt afterwards diſmiſſed the people with this form, *Ilicet*.

Hence it may be obſerved, that the ſacrifices conſiſted of four principal parts; the firſt called *libatio*, or the pouring a little wine upon the victim; the ſecond *immolatio*, when, after they had ſcattered the crumbs of ſalted paſte thereon, they killed it; the third *redditio*, when they offered the entrails to the gods; and the fourth *litatio*, when the ſacrifice was perfected, and accompliſhed without any fault. For a more particular account of the materials and rites of ſacrifice, ſee Potter's Archæol. Græc. tom. i. p. 200, &c.

SACRIFICE *Rock*, in *Geography*, a rocky iſlet in the Indian ſea, near the coaſt of Malabar; ſo called, becauſe when the Portugueſe firſt ſettled in India, the whole crew of one of their veſſels, which the natives had ſeized, were ſacrificed upon it; 18 miles S. of Telicherry. N. lat. 11° 43′. E. long. 75° 27′.

SACRIFICES, *Iſland of*, a ſmall iſland in the Pacific ocean, near the weſt coaſt of New Mexico. N. lat. 15° 40′. W. long. 98° 6′.—Alſo, a ſmall iſland in the gulf of Mexico; 8 miles S. of St. Jean de Ulua.

SACRILEGE, SACRILEGIUM, the crime of profaning ſacred things, or things devoted to God; or of alienating to laymen, or common purpoſes, what was given to religious perſons, and pious uſes.

Our foreſathers were ſo tender in this caſe, that, when the order of knights Templars was diſſolved, their lands, &c. were all given to the knights Hoſpitallers of Jeruſalem, for this reaſon, "Ne in pios uſus erogata, contra donatorum voluntatem, in alios uſus diſtraherentur."

Church robbery, or a taking of things out of a holy place, is ſacrilege; as where a perſon ſteals any veſſels, ornaments, or goods of the church: and it is ſaid to be a robbery of God, at leaſt of what was dedicated to his ſervice. If any thing belonging to private perſons, left in a church, be ſtolen, it is only common theft, not ſacrilege: but the canon law determines that alſo to be ſacrilege; as likewiſe the ſtealing of a thing known to be conſecrated, in a place not conſecrated. By the civil law, ſacrilege is puniſhed with greater ſeverity than any other thefts; and the common law diſtinguiſhed this crime from other robberies, for it denied the benefit of the clergy to the offenders, which it did not do to other felons: but by ſtatute it is put upon a footing with other felonies, by making it felony excluded of clergy, as moſt other felonies are.

All perſons not in holy orders, who ſhall be indicted, whether in the ſame county where the ſact was committed, or in a different county, of robbing any church, chapel, or other holy place, are excluded from their clergy, by 23 H. VIII. c. 1. 25 H. VIII. c. 3. 5 & 6 Ed. VI. c. 10. And all perſons in general are ouſted of their clergy for their felonious taking of any goods out of any pariſh church, or other church or chapel, by the 1 Ed. VI. c. 12. But the word *robbing* being always taken to carry with it ſome force, it ſeems no ſacrilege is within theſe ſtatutes, which is not accompanied with the actual breaking of a church, &c. And the ſtatute 23 Hen. VIII. is the only ſtatute which extends to acceſſaries to theſe robberies, except the offence amount to burglary; in which caſe acceſſaries before are ouſted of clergy, by 3 & 4 W. & M. c. 9.

SACRIMA, among the *Romans*, the new wine which was offered to Bacchus, as an acknowledgment of his protecting and preſerving every thing that belonged to wine.

SACRISTA, or SACRISTAN, a church-officer, otherwiſe called ſexton.

SACRISTY, SACRISTIA, a place or apartment in the church, where the veſſels, and other utenſils and ornaments of the church, are preſerved; and where the miniſters dreſs and undreſs themſelves before and after the ſervice.

The ſacriſty is alſo called in ancient authors, *ſecretarium:* among us the veſtry.

SACROBOSCO, JOHN DE, in *Biography*, an eminent mathematician in the 13th century, has been claimed for a countryman by writers of the Engliſh, Scotch, and Iriſh nations. According to Leland and Pitts, he was born at Halifax, in Yorkſhire, whence they derive his ſurname. According to Stainhurſt, he was a native of Holywood, near Dublin; but according to Dempſter and Mackenzie, he was born at Nithſdale, in Scotland. His Engliſh biographers ſtate, that he received his academical education at Oxford; and by Mackenzie it is ſaid, that, after finiſhing his ſtudies, he took holy orders, and became a canon-regular of the order of St. Auguſtine, in the monaſtery of Holywood, in Nithſdale. He ſpent the greater part of his life at Paris, where, in 1221, he was admitted a member of the univerſity, under the ſyndics of the Scotch nation. Here he diſtinguiſhed himſelf by his proficiency in polite literature and philoſophy, and more particularly by the ardour and ſucceſs with which he cultivated the mathematical ſciences. Being appointed profeſſor of mathematics, he diſcharged the duties of his high office with great reputation for many years, and became one of the ableſt mathematicians of his time. He died in 1256. He was author of a learned treatiſe, "De Sphæra Mundi," which has been frequently reprinted, and illuſtrated with the commentaries of Clavius, Valerian, Venetus, Nonius, and other learned mathematicians. His other works are, "De Anni Ratione ſeu de computo Eccleſiaſtico;" "De Algoriſmo;" "De Aſtrolabis;" "Breviarium Juris."

SACRO-COCCYGÆUS, in *Anatomy*, a name given by Winſlow to a muſcle now generally called ſimply the *coccygæus*; he calls it alſo *coccygæus poſterior*.

SACRO-LUMBALIS, a muſcle of the back, of an elongated figure; thick and triangular below, where it is cloſely connected to the longiſſimus dorſi; flattened and thin above, where it ends in a point; extending from the ſacrum and os innominatum to the ribs, and to the tranſverſe proceſſes of the four or five loweſt cervical vertebræ. Thus it fills the outer part of that hollow which is left at the ſide of the ſpinous proceſſes: below, this muſcle and the longiſſimus dorſi form a large and common maſs of muſcular and tendinous fibres, which fills up the ſpace between the ſacral ſpine and the back of the os innominatum. Oppoſite to the laſt rib, the two muſcles become diſtinct. We may diſtinguiſh, in the ſacro-lumbalis, an anterior and a poſterior ſurface, an inner and an outer edge.

The poſterior ſurface, which is broad below and narrower above, is covered by the aponeuroſes of the obliquus internus, and tranſverſus abdominis of the ſerratus inferior poſticus and latiſſimus dorſi: above the latter it is covered by the trapezius, the rhomboideus, the ſerratus ſuperior poſticus, and the levator ſcapulæ. A thin aponeuroſis, continued from the ſerratus ſuperior to the ſerratus inferior poſticus, covers the ſacro-lumbalis and the longiſſimus dorſi. The outer edge of this aponeuroſis is fixed to the angles of the ribs, the inner to the ſpinous proceſſes of the dorſal vertebræ.

The anterior ſurface of the ſacro-lumbalis covers, below, the poſterior ſurface of the ſacrum, to which it is attached; above this bone, it covers the middle layer of the aponeuroſis of the tranſverſus abdominis, and the tranſverſe proceſſes of the lumbar vertebræ, to the extremities of which it is attached; laſtly, it covers the ribs, the external intercoſtal muſcles, the longiſſimus dorſi, and the tranverſalis colli, to which it is connected.

The internal edge of the muſcle is united to the longiſſimus dorſi, from its lower part to the laſt falſe rib; then it lies on this muſcle, from which it is ſeparated by a line of cellular tiſſue, and by the filaments of the poſterior branches of the dorſal nerves. The upper part of this edge adheres to the tranſverſalis colli. The outer margin is attached below to the poſterior end of the criſta of the os innominatum, to the neighbouring part of the internal ſurface of this bone, and to the ſacro-iliac ligaments. From the criſta of the ilium to the laſt rib, it lies between the poſterior and middle layers of the aponeuroſis of the tranſverſus abdominis; then it is fixed to the angles of the eleven lower ribs, and to the tubercle of the firſt. It then is inclined forwards, and attached to the tranſverſe proceſſes of the four or five lower cervical vertebræ.

The ſacro-lumbaris conſiſts of aponeuroſes, tendons, and muſcular fibres. At its lower and back part we find a thick and ſtrong aponeuroſis, common to it with the longiſſimus dorſi, ariſing from the back of the ſacrum, and of the criſta of the ilium, and from the ſpinous proceſſes of the lumbar vertebræ, and terminating on the ſacro-lumbalis, midway between the criſta and the laſt rib. The portion of this aponeuroſis, belonging to the longiſſimus dorſi, aſcends high on that muſcle, and is not ſeparated from that of the ſacro-lumbalis. The latter affords attachment, below, to the gluteus magnus. On the outer edge of the muſcle we find fifteen or ſixteen tendons, of which the eleven loweſt are attached to the angles of the eleven loweſt ribs, the twelfth to the tubercle of the firſt rib, and the three or four others to the tranſverſe proceſſes of the inferior cervical vertebræ. The lower tendons are broad and ſhort; the middle narrower and longer; the upper ones narroweſt and longeſt. Each tendon terminates in an aponeuroſis, which is extended over the back of the muſcle: often ſeveral of theſe unite together at their edges, and form a ſingle more or leſs extenſive aponeurotic plane. When the ſacro-lumbalis is ſeparated from the longiſſimus dorſi, and turned outwards, a ſeries of muſcular faſciculi, terminating in tendons, is ſeen on its anterior ſurface. There are twelve of theſe: they are thick and ſhort below, longer and ſlenderer above. The tendons ariſe from the upper edges of the ribs at their angles, aſcend obliquely from without inwards, and terminate in the muſcular faſciculi, which join the front ſurface of the ſacro-lumbalis. Theſe are called by ſome anatomiſts, muſculi acceſſorii ad ſacro-lumbalem.

The muſcular fibres run obliquely from the great poſterior aponeuroſis, the criſta ilii, and the tranſverſe proceſſes of the lumbar vertebræ, to the tendons at the outer edge of the muſcle: the inner ones are the longeſt.

The portion fixed above to the tranſverſe proceſſes of the cervical vertebræ is often deſcribed as a particular muſcle, under the name of cervicalis deſcendens; and thoſe portions, which are fixed to the upper edges of the ribs, are alſo ſeparately deſcribed as the muſculi acceſſorii.

When the cheſt has been inclined forwards on the pelvis, the ſacro-lumbalis, extending the vertebral column, reſtores the trunk to the erect poſition, and inclines it backwards, as much as the ſtructure of the ſpine will admit. This and the longiſſimus dorſi are the great extenſors of the ſpine, and hence have been included together under the common term of erector dorſi. The upper portion, fixed to the cervical vertebræ, extends the neck upon the back, and inclines it backwards. The muſcle of one ſide, acting ſeparately, inclines the trunk or neck to its own ſide; but if the right and left act together, they move the ſpine directly backwards. Their conſtant action is neceſſary to maintain the trunk in its perpendicular attitude; becauſe the weight of the head and of the abdominal viſcera would carry the trunk forwards, if the parts were left to themſelves.

SACRO-SCIATIC, or Sacro-ischiatic, a name given to the two notches (the greater and the leſs) in the poſterior and lower part of the os innominatum. The ſame name is alſo given to the two large ligaments, which extend from the os innominatum to the ſide of the ſacrum and coccyx, and which are diſtinguiſhed as the great and ſmall ſacro-ſciatic ligaments. Theſe ligaments convert the notches of the bone into foramina, which are alſo called ſacro-ſciatic foramina. See Extremities and Pelvis.

SACRUM, the bone which forms the lower end of the vertebral column, and the middle poſterior part of the pelvis. It is ſaid to have been ſo called, becauſe this portion of the animal was particularly ſelected for burning in ſacrifices. It is deſcribed under Spine.

Sacrum *Promontorium*, in *Ancient Geography*, a promontory of Luſitania, now cape St. Vincent.—Alſo, a promontory of Aſia Minor, in Lycia, between the mouth of the river Lymiros and the town of Olympe. Ptolemy.—Alſo, a promontory of European Sarmatia. Ptolemy.—Alſo, a promontory in the north of the eaſtern part of the iſland of Corſica. Ptolemy.—Alſo, a promontory at the entrance of the Euxine ſea, 200 ſtadia from Chalcedon.

SACSAHUANA, in *Geography*, a town of Peru, in the dioceſe of Cuſco; 15 miles W. of Cuſco.

SACTA. See Sakta.

SACTAGONG, in *Geography*, a town of Hindooſtan, in the circar of Aurungabad; 18 miles S.W. of Aurungabad.

SACTI. See Sakti.

SACTIM, a word uſed by ſome of the chemical writers to expreſs vitriol.

SACUDA, in *Geography*, a town of Hindooſtan, in Candeiſh; 21 miles S.W. of Burhampour.

SACUMBA, an inland country of Africa, north of Monomotapa, about S. lat. 16°. E. long. 27°.

SACY, Louis de, in *Biography*, an advocate and an eſtimable man of letters, was born at Paris in 1654. He was educated for the bar, and became diſtinguiſhed for the eloquence and ſoundneſs of his pleadings, as he was for the probity of his conduct, and the poliſh and amenity of his manners. He employed all his time in the purſuits of literature; and in 1699 and 1701 he publiſhed "A Tranſlation of Pliny's Epiſtles," which was well received by the public, and obtained for him a ſeat in the French academy. It is ſpoken of in very high terms by d'Alembert, who ſays it is as agreeable to read as the original, and at the ſame time it is leſs fatiguing; becauſe the tranſlator, while he enters into all the refinement of Pliny's thoughts, expreſſes it with more ſimplicity; ſo that the author's wit appears with more advantage, by being freed from the ſtudied dreſs which too frequently impairs its beauty in the Latin. The author prefixed to his work an elegant life of Pliny the younger, which he followed with a tranſlation of his "Panegyric of Trajan." The reputation of this writer, and the amiable qualities of his heart, gave him admiſſion into a ſelect ſociety, of which the celebrated marchioneſs de Lambert was the centre, and he became her moſt confidential friend. It was in the boſom of this ſociety that he wrote his "Traitè de l'Amitie," a work which diſplayed the influence of friendſhip on his own mind. Soon after he publiſhed a "Traitè de la Gloire." In theſe, and in ſome other works, he kept in view the imitation of the great Roman orator, whom, however, he followed in very diſtant ſteps. He was never ſurpaſſed in the generous manner in which he exerciſed his profeſſion. The eulogium paſſed on him by the preſident Monteſquieu, who ſucceeded him in the academy, was, that "all who wanted his aſſiſtance became his friends. At the cloſe of every day, he found ſcarcely any other recompence than the conſciouſneſs of ſome additional good actions; and growing continually leſs rich, but much more diſintereſted, he left to his children only the honour of having had ſo reſpectable a father." M. de Sacy died at Paris in 1727, at the age of 74. Gen. Biog.

Sacy *le Grand*, in *Geography*, a town of France, in the department of the Oiſe; 6 miles E.S.E. of Clermont.

SADA, Sedoa, in *Ancient Geography*, a maritime town of India, on the weſtern ſide of the Ganges, north of Berabonna. Ptolemy.

SADACORA, a town of Aſia, in Armenia Minor, on the route from Garſaura to Mazaca. Strabo.

SADAF, in the *Materia Medica*, a name given by the Arabian writers, ſometimes to the purpura or purple fiſh, and ſometimes to the purple fucus, with which the ancient Greek women uſed to ſtain their cheeks. This was the original of all painting, and the ſubſtance was the common purple ſea-wracks. After this every thing was called fucus that was uſed by the women to paint their faces; and they had a fucus metallica made of white lead or ceruſs; and the purple roots of alcanet, &c. were called fuci.

SADAFERIN, in *Geography*, a town of Perſia, in the province of Irak; 35 miles N.W. of Schiras, or Shirauz.

SADALL, a town of Scotland, in the county of Argyle, and peninſula of Kintyre; 7 miles N.N.E. of Campbeltown.

SADAMRACH, a town of Arabia, in the province of Hedsjas; 216 miles S.S.E. of Mecca.

SADAR, or Alsadar, the Arabian name of the medicinal lotus, deſcribed by Dioſcorides, and many others of the ancients. The fruit of this tree, called by Virgil the berries of the acanthus, is the *nabac* of the Arabian writers, though ſome would have it to be a kind of fig. Serapion evidently declares the ſadar and acanthus of Virgil, that is, the lotus cyrenaica of Herodotus, and the lotus of Dioſcorides, to be one and the ſame plant. Bellonius has alſo deſcribed it under the name of *nabeca*, a name probably derived from *nabac*, the appellation uſually given its fruit: he ſays it is an ever-green ſhrub, and was called by ſome of the Greek writers *ænoplia*. Proſper Alpinus, in his account of the Egyptian plants, alſo deſcribes the *nabeca* as a thorny ſhrub; though authors have obſerved that there are two ſpecies of it, the one thorny and the other not. Leo Africanus, in his third book, mentions alſo the ſame tree; but he miſtakes the name, writing it *rabech* inſtead of *nabech*. He ſays it is a prickly tree, producing a fruit reſembling a cherry, but ſmaller, and of the taſte of the zizyphus.

SADARU, in *Geography*, a town of Perſia, in the province of Irak; 45 miles N.E. of Hirabad.

SADARUS, in *Ancient Geography*, a river of Aſia, in Aria; being one of the three navigable rivers which diſcharged themſelves into the Cephas. Pliny.

SADAS, a river of India, on the other ſide of the Ganges.

SADAVA, in *Geography*, a town of Spain, in Arragon; 17 miles S. of Sangueſa.

SADBERGE, a townſhip and chapelry in the pariſh of Haughton-le-Skerne, ſouth-weſt diviſion of Stockton ward, county palatine of Durham, England, is ſituated at the diſtance of four miles E.N.E. from the town of Darlington. Though now an inſignificant village, it was anciently a place of very conſiderable importance; enjoying not merely the ordinary rights and immunities of a borough, but being alſo a county of itſelf, governed by its proper ſheriff, coroner, and other civil officers. Here the ſheriff held his tourn, and here alſo the juſtices itinerant, commiſſioned by the biſhop of Durham, held their aſſizes. Sadberge was alſo, in remote times, a local earldom, and had the privileges of a wapentake. In the pleas of *quo warranto*, in the reign of Edward I., it was certified that the biſhop had his coroner at this town. A court of pleas was alſo held at Sadberge, and fines were regularly levied there of lands within that liberty. In the time of biſhop Langley, it was maintained that Barnard Caſtle, Marwood, Cleatlam, Egleſton, Langton, Middleton in Teeſdale, Newbigging, Stainton, and other places in the weſtern extremity of the county of Durham, were members of Sadberge wapentake. Here was formerly a gaol for the confinement of criminals and debtors; and ſundry manors and lands were held, by the ſpecial ſervice of keeping the ſame in repair, and for ſupporting the priſoners.

The preſent village of Sadberge occupies a fine eminence, which riſes with an eaſy aſcent from every ſide to ſuch a height, that it commands an extenſive proſpect over the ſouth-eaſt part of the county of Durham, and up Teeſdale, as far as the high lands above Barnard Caſtle. The ground on which the chapel ſtands is more elevated than any other ſpot within the townſhip; and from the circumſtance of its being trenched round, it is preſumed to have conſtituted the ſcite of the caſtle, gaol, and court-houſe, in ancient times. The ſtones of which the chapel is built were moſt probably taken from the ruins of theſe ſtructures, as ſuch materials are ſo difficult to be obtained in this part of the country, that it ſeems unlikely the founders of the church would have employed them, had they not found them on the ſpot.

The Hiſtory and Antiquities of the County Palatine of Durham, by William Hutchiſon, F.S.A. vol. iii. with enlargements, 4to. Carliſle, 1794. Beauties of England and Wales, vol. v. by E. W. Brayley and John Britton, 8vo. 1803.

SADDAMOL, a town of Bengal; 10 miles W.N.W. of Dinagepour.

SADDER, in *Modern Hiſtory*, a portion or compendium of the Zend in modern Perſian, containing an abſtract of the religious ſyſtem of the Perſees. This is read to the people, on every ſacred day, by their prieſts. See a Latin verſion of it in Hyde's Rel. Perſ. p. 431, &c.

SADDLE, in the *Manege*, a kind of ſtuffed ſeat, laid on the back of a horſe, for the convenience of the rider.

The origin of the ſaddle is not well known. Gorop. Becanus attributes its invention to the Salii, a people among the ancient Franks; and hence, ſays he, came the Latin *ſella*, ſaddle.

The Greeks, inſtead of ſaddles, uſed cloths or houſings; and thoſe of the lower claſs often rode without any. Arrian, ſpeaking of the manner of riding among the Indians, ſays, that ſaddles were not in uſe among them, and that they had no bridles made after the faſhion of the Greeks and Celts; but inſtead of them, they governed and guided their horſes with a thong or ſtrop, cut from the raw hide of a bull, which they bound acroſs their noſes. On the inſide of this noſe-band they fixed certain little pointed pieces of iron or braſs, moderately ſharp: the richer ſort uſed ivory.

Athenæus (lib. xii. 4.) ſays, that the Perſians covered their horſes with many ſoft and thick houſings, or cloths; being more deſirous of ſitting at their eaſe, than of approving themſelves dextrous and bold horſemen.

The inhabitants of Numidia, Mauritania, Naſamonia, Maſſilia, and other adjacent tracts of the ſame region, rode their horſes, which were very fleet and vigorous, without a bridle or ſaddle; uſing merely a wand or ſwitch to guide and command them.

Saddles were unknown to ancient Greece. Inſtead of theſe, certain cloths or houſings were thrown upon the horſe, and faſtened by a girth or ſurcingle. Upon theſe the rider ſat. They were known by the general name of "ephippia;" and the trappings or horſe-furniture, known and uſed in every part of the modern world, may be ſuppoſed to owe their origin to them. They were compoſed of different materials, leather, cloth, and the ſkins of wild beaſts, and ſometimes adorned with gold, ſilver, and precious ſtones; the horſes, beſides theſe ornaments, being decked with bells, rich collars, and richer devices.

It is certain the ancient Romans were unacquainted with the uſe either of ſaddle or ſtirrups; whence Galen obſerves in ſeveral places, that the Roman cavalry, in his time, were ſubject to ſeveral diſeaſes of the hips and legs, for want of having their feet ſuſtained on horſeback. And long before him, Hippocrates had noted, that the Scythians, who were much on horſeback, were frequently troubled with defluxions in their legs, becauſe of their hanging down.

The firſt time we hear of ſaddles among the Romans was in the year of Chriſt 340, when Conſtantius, endeavouring to deprive his brother Conſtantine of the empire, made head againſt his army, and entering the ſquadron where he himſelf was, threw him off his ſaddle, as we are informed by the hiſtorian Zonaras. Before this time, they made uſe of ſquare pannels; ſuch as we ſee in the ſtatue of Antoninus in the Capitol.

The ſucceeding emperors made many regulations concerning horſes, and occaſionally take notice of ſaddles. In the Theodoſian code there is a reſcript, given by the emperors Valentinian, Theodoſius, and Arcadius, which preſcribes the exact weight of a ſaddle, confining it to ſixty pounds, including the bridle.

The uſe of ſaddles, ſays Mr. Chambers, in his "Cyclopædia," was firſt eſtabliſhed in England, by a law of Henry VII., by which the nobility were obliged to ride on ſaddles. But this aſſertion, as Mr. Berenger (Hiſt. and Art of Horſemanſhip, vol. i. p. 174.) obſerves, is not countenanced by any act of parliament, or proclamation. It is much later that the Iriſh have taken to it.

When king Richard II. went to Ireland in the year 1399, to chaſtiſe Mac-Morough for aſſuming the title of king of Ireland, and other crimes, Mac-Morough is ſaid to have deſcended, between two woods, from a mountain, mounted upon a horſe without a ſaddle, which, it is reported, coſt him 400 cows; the method of bartering one commodity for another being then practiſed in that country. This horſe is ſaid to have ran as ſwift as any ſtag. Perhaps, ſays Berenger, the cuſtom once in this kingdom of making horſes draw by their tails may be aſcribed to the ſame cauſe as that of riding without ſaddles, the ignorance of the age in the art of making ſaddles and harneſs.

According to Mr. John Lawrence, the Engliſh ſaddle has been highly improved within the laſt twenty or thirty years; not only in reſpect to ſymmetry, fitneſs, and beauty, but of eaſe both to the rider and the horſe. But nothing has contributed ſo much in the modern ſaddle to the eaſe and convenience of the rider, as the forward projection of the pads, where the knees reſt, and the ſituation of the ſkirts, or flaps, above and below the knee. It is true, the knees are apt to be galled in a long journey by the ſtirrup-leathers, which are now placed without the long flap; but they may occaſionally be drawn beneath it. The ſaddle is ſecured by two girths only, and thoſe placed exactly one over the other, appearing as if ſingle. All ſorts of ſaddles have lately undergone much improvement, but particularly thoſe of the military kind.

There are various kinds of ſaddles; as the

SADDLE, *Hunting*, which is compoſed of two bows, two bands, fore-bolſters, pannels, and ſaddle-ſtraps: and the great ſaddle has, beſides theſe parts, corks, hind-bolſters, and a trouſſequin. The pommel is common to both. A horſeman that would ſit a horſe well, ought always to ſit on his twiſt, and never on his buttocks, which ought never to touch the ſaddle; and whatever diſorder the horſe commits, he ought never to move above the ſaddle.

SADDLE, *Running*, a very ſmall one, with round ſkirts.

SADDLE, *Burford*, which has the ſeat and ſkirts plain.

SADDLE, *Pack*. See PACK-*Saddle*.

SADDLE, *Pad*, of which there are two kinds: the one made with burs before the ſeat, the other with bolſters under the thighs.

SADDLE, *French pad*, the burs of which come round the ſeat.

SADDLE, *Portmanteau*, furniſhed with a cantle behind the ſeat, to keep a carriage off the rider's back.

SADDLE, *War*, furniſhed with a cantle, and a bolſter, both behind and before.

SADDLE-*Backed*, among *Horſemen*, a name given to a horſe that is hard to fit with a ſaddle, his reins being low, and his head and neck raiſed, ſo as to require a ſaddle to be made on purpoſe for him.

SADDLE-*Galled*, is when a horſe's back is hurt or fretted with the ſaddle.

It is to be cured by bathing the part with urine, or warm wine: when the ſore is large, they bathe it with aqua ſecunda, ſtrewing over it the powder of old ropes or flax, and conſuming the proud fleſh with vitriol, or colcothar.

Good horſes are often ſubject to gall upon their backs, and the utmoſt care ought to be taken to prevent or cure it. The beſt method of prevention is to take a hind's ſkin, well furniſhed with hair, and fit it neatly beneath the pannel of the ſaddle, ſo that the hairy ſide may be next the horſe; this does not harden by ſweat, but keeps the horſe from galling. This is alſo a method that ſhould never be omitted with horſes that are newly cured of ſuch a hurt, as it will prevent their falling into it again.

In long journies, and in horſes that are ſubject to gall, it is always proper to take off the ſaddle as ſoon as the horſe is brought in, and examine whether the back be at all preſſed, or pinched in any part: it will be well to re-examine it after an hour or two, to ſee what effect the ſtanding has had, for often the part hurt will not ſhew it at firſt, but will ſwell very violently afterwards. In this caſe, where the ſkin is not fretted, but a ſwelling comes on, a bag of coarſe cloth ſhould be filled with warm dung, and tied upon the ſwelling, which will not only prevent it from growing worſe, but will take it often quite down; or the ſwelling may be well rubbed with good brandy, laying on a paper ſoaked in it. If the ſkin be broken, a mixture of red wine, and ſalad oil, is a good remedy.

SADDLE-*Caſe*. See HOUSING.

SADDLE-*Roll*. See TROUSSEQUIN.

SADDLE-*Straps*, are ſmall leathern ſtraps, nailed to the bows of the ſaddle, which are uſed to hold the girths faſt to the ſaddle. See BOWS.

SADDLE, in the *Sea Language*, a ſmall cleat or wooden block, hollowed on the upper and lower ſide, and nailed on the lower yard-arms, to retain the ſtudding-ſail-booms in a firm and ſteady poſition. For this purpoſe the cavity on the lower part of the ſaddle conforms to the cylindrical ſurface of the yard to which it is attached; and in like manner, the hollow, on the upper ſide, anſwers to the figure of the boom, and ſerves as a channel, by which it may be run out or in, along the yard, as occaſion requires. Falconer.

SADDLE *Iſland*, in *Geography*, a ſmall iſland in the Eaſt Indian ſea, near the iſland of Paraguay. N. lat. 11° 15′. E. long. 119° 28′.—Alſo, a ſmall iſland near the W. coaſt of Sumatra. N. lat. 3°. E. long. 97° 27′.—Alſo, a ſmall iſland in the Mergui Archipelago. N. lat. 10° 24′.

SADDLE *Point*. See BLACK *Point*.

SADDLE *River*, a river in Bergen county, New Jerſey.

SADDLEBACK, an iſland in Hudſon's ſtraits. N. lat. 62°. W. long. 68° 5′.—Alſo, a mountain of England, in the county of Cumberland, upwards of 3000 feet above the level of the ſea; about five miles E. of Keſwick.

SADDLEHEAD, a cape of Ireland, on the weſtern coaſt, being the extremity of the hill in Achill iſland, county of Mayo, which was ſuppoſed to reſemble a ſaddle. N. lat. 54° 7′. W. long. 10° 6′.

SADDLEHILL, a promontory on the W. coaſt of North America. N. lat. 46° 25′. W. long. 124°.

SADDLEHILL *Iſland*, a ſmall iſland in the Mergui Archipelago. N. lat. 10° 19′.

SADDUCES, or SADDUCEES, *Sadducæi*, a ſect among the ancient Jews, conſiſting of perſons of the greateſt quality and opulence, eſteemed as Deiſts, or Free-thinkers, rather than real Jews; though they aſſiſted at all the ceremonies of the worſhip in the temple, and had an equal ſhare in that adminiſtration of affairs which was allowed to the Jewiſh nation by the Romans, with the Phariſees. In their judicial proceedings they were the more cruel of all the Jews. The high prieſts themſelves were ſometimes Sadducees; ſuch were John Hyrcanus, who died B. C. 107, and Ananus, who was high prieſt about the year of our Lord 60.

St. Epiphanius will have the Sadducees to have taken their riſe from Doſitheus, a Samaritan ſectary; and Tertullian is of the ſame opinion. St. Jerom, and other writers add, that the Sadducees came near the Samaritans in many things; particularly in this, that they allowed no books of Scripture, but the five books of Moſes. The Jeſuit Serrarius has alſo embraced this opinion, as ſeeming to be ſupported by Joſephus. But Joſephus ſays only this, that they admitted all that was written, *i. e.* all the books of Scripture; intimating hereby, that they diſowned the unwritten traditions of the Phariſees. In effect, St. Epiphanius is forced to own, that the Sadducees were Jews, and not Samaritans: inaſmuch as they aſſiſted at the worſhip and ſacrifices of the temple at Jeruſalem; whereas the Samaritans ſacrificed on Mount Gerizzim.

Some authors aſcribe the origin of this ſect to one Sadoc, or Sadduc, a diſciple of Antigonus Sochæus, a native of Socko, on the borders of Judea, preſident of the ſanhedrim, about 300 years before Chriſt, who frequently inculcated upon his ſcholars, that God is to be ſerved for his own ſake, and not out of view to any reward from him in the next world, as ſlaves ſerve their maſters merely for recompence. Sadoc, add they, putting a falſe interpretation on theſe words of his maſter, publiſhed, that there was no reward allotted to good actions done in this world. (See the article ANTIGONUS SOCHÆUS.) And hence aroſe the ſect of Sadducees, thus denominated from their leader, Sadoc. Though St. Epiphanius, and ſome modern writers after him, take the Sadducees to have been thus called from the Hebrew, צדק, *ſadec, juſt*, or *ſedec, juſtice*, in regard of the great juſtice and equity which they ſhewed in all their actions.

But this derivation neither ſuits the word Sadducee, nor the true character of the ſect; for ſo far were they from being eminently righteous, that they are commonly ſaid to be the moſt wicked and profligate of all the Jews; neither were they given to boaſt of their own righteouſneſs, as the Phariſees were.

The ſect of the Sadducees long continued to flouriſh in Judea, and to poſſeſs great authority. Although they differed in fundamental points of faith from the reſt of the nation, they were admitted, as we have hinted already, to ſacred privileges and offices, and even to the higheſt dignity of the prieſthood. Notwithſtanding the enmity which ſubſiſted between them and the Phariſees, on account of the contempt with which they treated the traditionary law, theſe ſects frequently united in public councils, and in defence of the common cauſe of religion, and in their malignant oppoſition to our bleſſed Saviour. Under the reign of Hyrcanus, who, about 130 years B. C., poſſeſſed the ſupreme civil and ſacerdotal power in Judea, the Sadducees were the leading ſect; for that prince, being oppoſed by the Phariſees in the execution of the office of high prieſt, treated them with great ſeverity, and eſpouſed the Sadducean party, requiring the whole nation, on pain of death, to profeſs the doctrine of this ſect. After the death of Hyrcanus, the perſecution of the Phariſees was for ſome time continued by his ſon, Alexander Jannæus; but Alexandra, the wife of Jannæus, who ſucceeded him in the government, finding that the Phariſaic ſect was more popular than the Sadducean, eſpouſed the intereſt of the Phariſees, and reſtored their power and influence. The Sadducees, however, afterwards regained a conſiderable ſhare of political and eccleſiaſtical conſequence; for we find, that Caiaphas (as ſome have ſuppoſed), and Ananus (as we have already mentioned), who were both of this ſect, poſſeſſed in ſucceſſion the office of high prieſt. After the deſtruction of Jeruſalem, the ſect of the Sadducees fell into contempt among their countrymen, and even incurred the hatred of the Chriſtians. The emperor Juſtinian iſſued a ſevere edict againſt them (Noell. 146.); inflicting baniſhment, and, in caſe of obſtinate perſeverance, even death, upon thoſe who ſhould teach their doctrines.

The chief heads of the Sadducean tenets were theſe: (ſee Acts, xxiii. 6. 8. Matt. xxii. 23. Mark, xii. 18. Luke, xx. 27. Joſeph. Ant. l. xiii. c. 18. l. xviii. c. 2. De Bell. Jud. l. ii. c. 12.) All laws and traditions, not comprehended in the written laws, are to be rejected as merely human inventions. Neither angels nor ſpirits have a diſtinct exiſtence, ſeparate from their corporeal veſtment: the ſoul of man, therefore, does not remain after this life, but expires with the body. There will be no reſurrection of the dead, nor any rewards or puniſhments after this life. Man is not ſubjected to irreſiſtible fate, but has the framing of his condition chiefly in his own power; ſo that they attributed all things to free-will, and thus oppoſed the opinion of the Phariſees, who admitted a kind of deſtiny or fatality in all our actions. Polygamy, according to the Sadducees, ought not be practiſed. It has been aſſerted (ſee Tertull. de Preſcript. l. i. c. 14. Orig. cent. Celſ. l. i. p. 39.), that the Sadducees only received, as of ſacred authority, the five books of Moſes. But the contrary clearly appears from their controverſy with the Phariſees, in which the latter appeal to the prophets and other ſacred writings, as well as the law, which they could not have done with any propriety or effect, if the Sadducees had not admitted their authority. To this we may add, that if this had been the caſe, it is very improbable that ſuch hereſy would have paſſed without cenſure.

The Sadducees are ſometimes ranked with the Epicureans, but improperly; for though they agreed with them in denying the doctrine of a future ſtate, they differed from them eſſentially in their ideas of God and providence. Whilſt the Epicureans admitted no ſupreme intelligent ruler of the world, and ſuppoſed the gods wholly unconcerned in human affairs, the Sadducees acknowledged the exiſtence of the one true God, the Jehovah of the Jews, and admitted his univerſal providence, only rejecting the notion of an abſolute and uncontroulable influence over the volitions and actions of men: they admitted, too, the reaſonableneſs and obligation of religious worſhip. Their denial of a ſtate of future rewards and puniſhments may perhaps in part be aſcribed to their believing in the homogeneous nature of man; for Joſephus expreſsly ſays (De Bell. Jud. l. ii. c. 12. Ant. Jud. l. xviii. c. 2. l. xx. c. 8.), that they took away the diſtinct and permanent nature of the ſoul: ψυχῆς τε τὴν διαμονὴν ἀναιροῦσι. This was, probably, the chief ground of their oppoſition to Chriſtianity, whoſe diſtinguiſhing doctrine is that of the reſurrection from the dead. Brucker's Phil. by Enfield, vol. ii. p. 173, &c.

It is certain they denied the reſurrection and the exiſtence of angels and ſpirits (Matt. xxii. 23. Acts, xxiii. 8.), and allowed of no happineſs but what is enjoyed in this life; believing, that every thing told of the other world had been artfully invented by the Phariſees. Hence, alſo, they attributed all things to free-will; in which they oppoſed the opinion of the Phariſees, who admitted a kind of deſtiny, or fatality in all our actions; ſo that they were, upon the whole, Epicurean deiſts in all other reſpects, except that they acknowledged the world to have been created, and perhaps to be upheld and preſerved, by God.

SADERBELE, in *Geography*, a town of Hindooſtan, in Guzerat; 12 miles S. of Noopour.

SADI. See Rosary.

Sadi, in *Geography*, a river of Hindooſtan, which runs into the Jumnah; 10 miles below Delhi.

SADIA, a ſea-port town on the W. coaſt of Madagaſcar. S. lat. 19° 5′.—Alſo, a town of Arabia, in the province of Yemen; 34 miles S.E. of Loheia.

SADJAKLU, a town of Aſiatic Turkey, in Natolia; 16 miles S. of Karahiſar.

SADIR, a word uſed by ſome chemiſts to expreſs the ſcoria of any metal in fuſion.

SADLER. Under this title is carried on a very conſiderable trade, but in very different degrees. The buſineſs of ſadlers is not only ſaddle-making, which is a curious as well as very ancient employ, but to complete ſome, and ſell all other, neceſſaries for the ſaddle, nag, and horſeman. They were a company before the year 1190, but not incorporated till 1272. In the reign of king Edward I. the livery-fine was 10*l.* Their hall is near Foſter-lane, Cheapſide: and their court-day on the firſt Tueſday in the month. See Company.

Sadler's *Wells*, a well-known place of entertainment in the neighbourhood of London. It derives its name from Mr. Sadler, who erected a muſic-houſe near the ſpot, which was much frequented, before the Reformation, on account of the famous well, to the waters of which many extraordinary cures were aſcribed, and which was, therefore, deemed ſacred, and called holy well. The prieſts belonging to the priory of Clerkenwell uſed to attend there, and hence the people were led to believe, that the virtues of the water proceeded from the efficacy of their prayers.

Upon the Reformation the well was ſtopped up, on account of the ſuperſtitious uſe that was made of it; till, in 1683, Mr. Sadler found it, covered with a carved arch of ſtone. After his deceaſe, one Francis Forcer, a muſician, became occupier of the wells and muſic-houſe. His ſon ſucceeded him, and firſt exhibited in this place the diverſions of rope-dancing, tumbling, &c.

SADLISTOVA, in *Geography*, a ſmall iſland in the river Volga, where veſſels are entered that trade on the Caſpian ſea; 50 miles S. of Aſtrachan.

SADMETI, a town of Imiretta; 30 miles N.E. of Cotatis.

SADO, an iſland of Japan, about 90 miles in circumference, in a large bay on the N. coaſt of the iſland of Niphon. N. lat. 37° 40′. E. long. 138° 54′.

SADOLETO, Jacopo, in *Biography*, a celebrated cardinal, born at Modena in 1477, was the ſon of Giovanni Sadoleto, an eminent juriſt. He ſtudied at Ferrara, where one of his maſters was the learned Niccolo Leoniceno. His father intended him for his own profeſſion, but finding that he had a decided turn for polite literature and philoſophy, he gave way, and permitted him to follow his own inclinations. Repairing to Rome in the time of Alexander VI. he obtained the patronage of cardinal Oliviero Caraffa, and he had for his inſtructor Scipione Carteromacho, under whom he made conſiderable progreſs in elegant literature. He diſtinguiſhed himſelf ſo much by his Latin ſtyle, that Leo X. nominated him and Bembo his ſecretaries, after which he was, by the ſame pontiff, raiſed to the biſhopric of Carpentras. This was in the year 1517. In the ſucceeding pontificate of Adrian, he was not only leſs favoured, but even calumniated as having falſified a brief. He therefore, in 1523, retired to his ſee, to the great regret of all lovers of poliſhed writing and manners in the Roman court. Clement VII. recalled him to his former poſt, and manifeſted for him the greateſt regard. That pontiff did not, however, pay the deference to his prudent counſels, which might have averted the dangers hanging over the city, of which Sadoleto was ſo well aware, that he obtained permiſſion to retire to his biſhopric only twenty days before the ſack of Rome. In that tremendous cataſtrophe he loſt all the property which he had left in the capital, and it was the eventual cauſe of the diſperſion of a rare and moſt valuable library which he had collected. The books were put on board a ſhip for France, and had arrived on the coaſt, when the plague breaking out among the paſſengers, the ſhip was not ſuffered to enter a port. The biſhop's library, therefore, with the reſt of the ſhip's cargo, was tranſported to ſome diſtant country, and entirely loſt to its owner. At Carpentras he employed himſelf in paſtoral cares, and obtained no leſs honour as an exemplary prelate, than he had done as one of the moſt elegant ſcholars of the age. He was held in great eſtimation by Francis I., who made him conſiderable offers to induce him to come to his court, but he felt it his duty to accept the invitation of Paul III., who, in 1536, created him a member of the congregation of reform, and elevated him to the cardinalate. He gave advice with perfect freedom to that pontiff, who took him to Nice in 1538, when he had a conference with Charles V. and Francis I. It was ſtill the cardinal's ambition to reſide in his ſee, and employ himſelf in paſtoral duties, and the cultivation of letters, and he was allowed to follow the bent of his inclination till 1542, when the pope ſummoned him to Rome, and appointed him his legate to the king of France, for the purpoſe of negotiating a peace between that monarch and the emperor. He ſucceeded in diſpoſing the mind of the French monarch to an accommodation, but inſuperable obſtacles were raiſed on the part of Charles. Sadoleto returned to Rome, and aſſiſted in the frequent congregations held previouſly to the convocation of the council of Trent, till his death in 1547. He was interred without pomp, according to his own direction, in the church of St. Peter ad Vincula, and his funeral oration was pronounced by cardinal Caraffa. Few men of the age left a more thoroughly eſtimable character than the ſubject of this article. His temper was mild, but he had great ſenſibility and elevation of ſoul; and he united ſolid piety and fervent zeal, with freedom from ſuperſtition and Chriſtian charity. His addreſs to the people of Geneva, who had begun to throw off the papal yoke, is ſaid to be a model of epiſcopal eloquence, and paternal mildneſs. Early in life he obtained a high rank among thoſe Italians who, at that period, cultivated polite literature with a ſucceſs that has cauſed them to be conſidered a ſort of ſecond claſſics. His Latin proſe was formed upon an imitation of that of Cicero; and his verſe upon that of Virgil: of both theſe great authors the phraſeology was freely copied by Sadoleto, as well as by his contemporaries. His work entitled "Curtius," and that upon the ſtatue of Laocoon, are the moſt admired pieces of his Latin poetry. In proſe, one of the moſt important of his works is entitled "De liberis inſtituendis;" it contains many valuable precepts, and juſt obſervations on moral and literary education: but his two books "De laudibus Philoſophiæ," happily imitate not only the ſtyle but the manner of thinking of Cicero. Of his theological works, that which is chiefly celebrated is his "Commentary on St. Paul's Epiſtle to the Romans," publiſhed in 1535, and for which he was involved in eccleſiaſtical cenſure, but by ſubmiſſion to the authority of the church he recovered his reputation, and the work was allowed a circulation. Sadoleto was the friend and correſpondent of moſt of the eminent men of his time, among whom were Melancthon and Eraſmus. The works of Sadoleto were collected and publiſhed at Verona, in three vols. 4to. in 1740.

SADOVA, in *Geography*, a town of Walachia; 16 miles W.S.W. of Karacal.

SADRAS, a town of Hindooſtan, in the territory of Madras, belonging to the Dutch: it is ſituated in a fertile ſoil, and receives a ſupply of vegetables from the gardens in the vicinity of Madras. Near the town and N. of it are ſeven pagodas for Hindoo worſhip, hollowed out of a ſolid rock, at different heights; 35 miles S. of Madras. N. lat. 12° 33′. E. long. 80° 18′.

SADRAZA, a town of Hindooſtan; 15 miles E. of Benares.

SADRE, a title given by the Perſians to the chief of the Mahometan religion. See CALIPH.

SADRU, in *Geography*, a town of Perſia, in the province of Irak; 80 miles E.N.E. of Gnerden.

SADSBURY, a townſhip in Cheſhire county, Pennſylvania; containing 1192 inhabitants.

SADSKAR, or SEGER, a diſtrict of Arabia, in the N.E. part of Hadramaut.

SADUMRAH, a town of Arabia, in the province of Hedsjas; 105 miles N. of Ghezan.

SÆLANTHUS, in *Botany*, a hybrid name of Forſkall's, compoſed of *Sæla*, the Arabic appellation of the plant, and ανθος, *a flower*. Juſſieu refers moſt of the ſpecies, if not the whole of this genus, to CISSUS; ſee that article.

SAEMUND, SIGFUSSON, in *Biography*, a celebrated Icelandic writer, was the ſon of a prieſt named Sigfus, and born in 1054. He travelled at a very early period into foreign countries, in order to improve himſelf in knowledge, and for a conſiderable time his countrymen were not at all aware of what had become of him. At length John Ogmundſen, afterwards biſhop of Holum, when on a tour to Rome, found him at Paris, and carried him back to Iceland. He now entered into holy orders, and eſtabliſhed a ſchool. He contributed with others to induce the Icelanders to pay tithes, and took a conſiderable part with regard to the formation of the eccleſiaſtical code of laws. He died in 1133. At the age of 70 he wrote a hiſtory of Norway, from the time of Harold Haarfager to that of Magnus the Good. He is generally allowed the merit of having collected the poetical Edda, by which means he preſerved theſe curious and valuable remains of the ancient Scandinavian mythology, poetry, and morality from being loſt. Notwithſtanding that this honour is uſually aſcribed to Saemund, it is very doubtful whether he has a juſt claim to it. See the ſubject more at large in the Gen. Biog.

SÆPÆ, a name given by ſome medical writers to ſharp corroding puſtules.

SÆPINUM, in *Ancient Geography*, a town of Italy, in Samnium, ſaid by Frontinus to have been a colony formed under Nero and Claudius.

SÆPONA, a town of Hiſpania, in Bœtica. Pliny.

SÆTABIS, a town of Hiſpania Citerior, belonging to the Conteſtani, at a ſmall diſtance S.W. from the mouth of the Suero. This town ſeems to have been founded by the Sedetani or Edetani, and was ſituated, according to Silius Italicus, on an eminence: famous for its flax. It was called by the Moors "Xativa;" but having been deſtroyed by Philip V., it was rebuilt under the name of St. Philip.—Alſo, a river of Hiſpania Citerior, in the country of the Conteſtani, the mouth of which is placed by Ptolemy between Alone and Illicitanus Portus.

SAETWITZ, in *Geography*, a town of the duchy of Holſtein; 4 miles N.E. of Oldenburg.

SAFA, in *Ancient Geography*, a town of Aſia, ſituated near the weſtern bank of the Tigris, towards N. lat. 37° 25′.

SAFAD, or SAPHET, in *Geography*, a town or rather village of Paleſtine, in the pachalic of Saide, or, as it is now called, of Acre, ſituated on the brow of a hill about ſeven leagues N. of Tabarai; which Volney deſcribes as the ſeat of pacha Daher's power. Under his government an Arabian college flouriſhed at this place, in which the Motoualis' doctors inſtructed youth in the ſcience of grammar, and the allegorical interpretation of the Koran. The Jews, who believe that the Meſſiah will eſtabliſh the ſeat of his empire at Safad, had conceived an affection for this place, and collected there to the number of 50 or 60 families; but the earthquake of 1759 deſtroyed every thing; and Safad, regarded by the Turks with an unfavourable eye, is now only a village almoſt deſerted. Towards the N. from Safad is a chain of lofty mountains, named "Djebal-el-ſhaik," among which are the ſources of the river Jordan, and thoſe of a number of rivulets, which water the plain of Damaſcus. The high diſtrict, from which theſe rivulets flow, is called "Haſbeya," at preſent governed by an emir, and farmed for 60 purſes. The country is mountainous, and much reſembles the Lower Lebanon. The troops of the ruling ſheik or ſheick are called Safadians, becauſe the ſeat of his government was originally at Safad. Some have ſuppoſed that this was the ancient Bethulia; 65 miles S.W. of Damaſcus, and 54 N.N.E. of Jeruſalem. N. lat. 32° 47′. E. long. 35° 32′.

SAFAN, a mountain of Arabia, in Yemen; 16 miles N. of Dsjebi.

SAFANI *el Bahâr*, a ſmall iſland in the Red ſea, near the coaſt of Egypt. N. lat. 27° 35′.

SAFE-CONDUCT, *Salvus conductus*, a ſecurity given by the prince under his great ſeal, and inrolled in chancery, to a ſtranger, for his quiet coming in and paſſing out of the realm.

The ſafe-conduct is granted to thoſe who otherwiſe could not ſafely go to the places where he who grants it, is maſter, *e. g.* to perſons charged with ſome miſdemeanor, or to enemies; the paſſport to friends, or to perſons with reſpect to whom there is no particular exception againſt their coming or going in ſafety, and who are thus the better ſecured for avoiding all debate, or diſpenſing them from ſome general prohibition.

Paſſports under the king's ſign manual, or licences from his ambaſſadors abroad, are now more uſual, and are allowed to be of equal validity with letters of ſafe-conduct.

All ſafe-conducts flow from ſovereign authority; but the prince may delegate to his officers the power of furniſhing ſafe-conducts, and with this they are inveſted, either by an expreſs commiſſion, or in conſequence of the nature of their functions. A general of an army, from the very nature of his poſt, can grant ſafe-conducts; and as they are derived, though mediately, from the ſovereign authority, the other generals or officers of the ſame prince are to reſpect them. The perſon nominated in the ſafe-conduct cannot transfer his privilege to another. If this ſafe-conduct be granted, not for perſons, but for effects, thoſe effects may be removed by others beſides the owners. The choice of thoſe who remove them is indifferent, provided there be no perſonal exception, which renders them juſtly ſuſpected by him who gives the conduct, or interdicts them from entering his territories. He who promiſes ſecurity by a ſafe-conduct, promiſes it where he is maſter, not only in his territories but likewiſe wherever any of his troops may be, and he not only is to forbear violating this ſecurity, either by himſelf or his people, but he is to protect and defend him to whom he has promiſed it, to puniſh any of his ſubjects who have offered any violence to him, and oblige them to make good the damage. As the right ariſing from a ſafe-conduct proceeds entirely from the will of him who grants it, this will is the ſtandard by which the extent of it is to be meaſured; and this will is manifeſted in the end for which the ſafe-conduct was granted: conſequently, he who has been permitted to go away has no right to return; and a ſafe-conduct granted merely for going cannot ſerve for repaſſing. If granted for certain affairs, it is to be of force till thoſe are concluded, and the perſon has time to depart: if it is ſpecified to be granted for a journey, it will alſo ſerve for the repaſſing; the journey including both the paſſage and return. As this privilege conſiſts in the liberty of going and coming in ſafety, it differs from the permiſſion of ſettling in any part, and conſequently cannot give a right of ſtopping any where for a long time, unleſs on buſineſs, with a view to which the ſafe-conduct was aſked and granted. A ſafe-conduct given to a traveller naturally includes his baggage or his clothes, and every thing neceſſary for his journey, with even a domeſtic or two, according to the rank of the perſon; but with regard to theſe particulars, the ſafeſt way, eſpecially among enemies, and other ſuſpected perſons, is to enumerate and categorically expreſs every thing, which is now the practice: the baggage and domeſtics, where requiſite, are particularized. Safe-conduct granted to a father does not include his family; becauſe in journeys, his family is uſually left at home.

The ſafe-conduct granted to a perſon "for himſelf and his retinue," cannot give him a right to bring with him perſons juſtly ſuſpected to the ſtate, or who had been baniſhed, proſcribed, or who were fugitives for ſome time; nor give ſecurity to ſuch: for the ſovereign granting ſafe-conduct in thoſe general terms, does not ſuppoſe any ſuch inſolence as to abuſe it, for bringing into his country delinquents, or perſons who have particularly offended him.

A ſafe-conduct, given for a ſtated term, expires at the end of the term ſpecified in it; and the bearer, if he does not return before that time, may be ſeized and even puniſhed, according to circumſtances: eſpecially if he has given room for ſuſpicion by a delay of his own framing. But if detained by force, or ſickneſs, ſo as to be unable to depart in time, a proper reſpite ſhould be allowed him; for ſafety has been promiſed to him, and though aſſured to him only for a limited time, it is not his fault that he has not departed within the term. This caſe is different from that of an enemy coming into our country during a truce; he has no ſpecial promiſe from us: he at his own peril makes uſe of a general liberty allowed by the ſuſpenſion of hoſtilities: all we have promiſed to the enemy is, to forbear hoſtilities for a certain time, and at the expiration of it we are concerned to ſee that their courſe be freely renewed, without the diſturbance of endleſs excuſes and pretences. The ſafe-conduct does not expire at the deceaſe or depoſition of him who granted it; for it was given in virtue of the ſovereign authority, which never dies, nor is the efficacy of it annexed to the perſon who exerciſes it. Nevertheleſs, the ſucceſſor may, on good reaſons, revoke a ſafe-conduct: even he from whoſe hands it came may in like caſe revoke it, and is not always obliged to make known his reaſons. Every privilege, when it becomes detrimental to the ſtate, may be revoked, ſuch as a gratuitous privilege, freely and ſimply, a purchaſed privilege, by indemnifying the parties concerned. Suppoſe a prince or his general to be preparing a ſecret expedition, is he to ſuffer, that by means of a ſafe-conduct, previouſly obtained, his preparations ſhall be inſpected, by which the enemy may gain intelligence of them? But a ſafe-conduct is not to be uſed as a ſnare: if it be revoked, the bearer muſt be allowed time and liberty to depart in ſafety. If he, like any other traveller, be detained ſome time, to prevent his carrying intelligence to the enemy, no ill treatment is to be offered him; nor is he to be kept longer than while the reaſons of his detainder ſubſiſt. If the ſafe-conduct has this clauſe, "For ſuch time as we ſhall think fit," it gives only a precarious right, and is every moment revocable; but while it is not *expreſs*, it remains valid: it expires on the death of him who gave it, for from that time he ceaſes to will the continuation of the privilege: nevertheleſs, it muſt be underſtood always, that from the moment of the expiration of ſuch ſafe-conduct, the bearer is to be allowed a proper time for his ſafe departure. Vattel's Law of Nations, b. iii. p. 104.

For the violation of ſafe-conduct, &c. ſee Passport.

Judges ſometimes give ſafe-conducts to delinquents, or priſoners, to enable them to act in their affairs.

SAFE-GUARD, *Salva guardia*, in a *Law Senſe*, a protection given by the king to a perſon fearing the violence of ſome other, for ſeeking his right by a courſe of law: or more generally, a ſafe-guard and paſſport are a kind of privilege, which give perſons a right to go and come ſafely, or a right of removing certain things in ſafety.

Safe-guard, at *Sea*, denotes a rope which ſaves and ſecures any thing: for inſtance, that by which perſons walk ſecurely over the bolt-ſprit.

Safe-guard *of the Helm*, is a rope which goes through the helm, and is faſtened to the futtocks of the ſhip.

SAFE-PLEDGE, *Salvus plegius*, in *Law*, a ſecurity given for a man's appearance on a day aſſigned. See Pledge.

SAFETY Cove, in *Geography*, a harbour on the E. coaſt of Calvert's iſland, in Fitzhugh's ſound. N. lat. 52° 31′. E. long. 232° 2′.

Safety *Gate*, is a moveable door in the bottom of a canal, generally under a bridge; as L M or N O, (*Plate* IV. *Canals*, *fig.* 26.); ſo contrived, that in caſe of a current being formed in the canal by the breach of a bank, the door or gate will riſe up, and ſtop the communication at that place. See Canal.

SAFFI, or Affi, or Azazi, or *Aſſaſſi*, or *Akſi*, a ſea-port town of Morocco, in the province of Abda, eight leagues from Valedia, towards the ſouth, after doubling Cape Cantin. This is a very ancient place, and was probably one of the cities built by the Carthaginians. The Portugueſe made themſelves maſters of it in the year 1508, and abandoned it in 1641. Saffi was long the centre of the commerce carried on with Europe. The French had ſeveral factories in it, and reſiding here, confided in the laws of hoſpitality, and brought from hence great quantities of wool, wax, gum, and leather; but when the emperor made Mogador a principal port, Saffi loſt its trade. It has a very fine road, where ſhips may anchor ſafely, except in winter, when the winds blow from the S. or S.W., and they are driven out to ſea. The environs of Saffi are a parched and dry deſart, and the Moors of the town are rude, fanatical, and unſociable. At the entrance of the town there is a number of tombs, or aſylums of ſaints, which have been made a pretext for obliging the Jews to enter it bare-footed; nor was any Chriſtian allowed, till the year 1767, to ride in or out of town on horſeback. The river Tanſif, bounding the province of Abda, runs about five leagues to the ſouth of Saffi; 16 miles S. of Cape Cantin. N. lat. 32° 20′. W. long. 9° 5′.

SAFFLOWER, or *Baſtard Saffron*, in *Botany*. See Carthamus.

Safflower is a name alſo erroneouſly given to a ſpecies of lake.

SAFFRANI, in *Geography*, a ſmall town of Egypt, in Bahira, under the command of a kiaſchef, about a league E. of Honéze, on the borders of the deſart, a village which marks the boundary between the moſt brilliant vegetation and the moſt complete aridity, between a land fertilized by the overflow of the Nile, and ſands moiſtened in vain by copious dews.

SAFFRON, in *Botany*, &c. See Crocus.

Saffron, in the *Materia Medica*. To what the reader will find under the article Crocus, we ſhall here add ſome further particulars relating to the medicinal properties and uſes of this plant. The ſtigmata of the "crocus ſativus," which conſtitute the officinal ſaffron, are eaſily to be diſtinguiſhed from thoſe of the other varieties. It has been long cultivated for uſe in this and in other countries, as Sicily, France, and Spain; but Engliſh ſaffron is generally preferred here to that which is imported from abroad, and may be diſtinguiſhed by its parts being larger and broader. It ſhould be choſen freſh, not above a year old, in cloſe, tough, compact cakes, moderately moiſt, ſtaining the hands in rubbing it, and of the ſame colour within as on the outſide. Saffron is cultivated for medicinal uſe, in great abundance, in Cambridgeſhire and Eſſex, formerly about Saffron-Walden chiefly, but it is now confined to Stapleford. For a fuller account of the culture and management of ſaffron, ſee Douglas in Phil. Tranſ. vol. xxxv. or Abr. vol. vii. p. 311, &c. and the next article.

Saffron, thus prepared, has a powerful, penetrating, diffuſive odour, and a warm, pungent, bitteriſh taſte. It gives out the whole of its virtues and colour to rectified ſpirit, proof ſpirit, wine, vinegar, and water, and in a ſmaller degree to ether; about three parts in four of the ſaffron being taken up by each of theſe menſtrua; and the matter, which remains undiſſolved, is inodorous, inſipid, and of a pale clay colour. The acetous and even vinous tinctures of ſaffron, on long keeping, loſe a little of their colour and ſtrength, but thoſe made with rectified ſpirit remain in perfection for years. In diſtillation it impregnates water ſtrongly with its flavour: if the quantity of ſaffron is large, a ſmall portion of a fragrant and very pungent eſſential oil may be collected, amounting, as Vogel ſays, to about 1½ drachm from 16 ounces. Rectified ſpirit alſo elevates a conſiderable ſhare of its flavour, but leaves much the greater part concentrated in the extract. The watery infuſion, which has the deep orange-red colour of the ſaffron, is rendered of a very deep purple by ſtrong ſulphuric acid, the mixture emitting the ſmell of vinegar, and yielding a copious black precipitate when diluted with water: and the oxymuriatic acid produces a copious yellow precipitate, the liquid retaining only a pale lemon colour. Hence, ſays Thomſon, ſaffron ſeems to contain chiefly extractive, which, according to Hermbſtaedt, is nearly pure, and in proportion of 10 parts in 16 of the vegetable: the remaining parts being chiefly ligneous fibre. From our experiments, ſays the ſame author, we find that it contains reſin alſo; for ſulphuric ether digeſted on ſaffron is coloured, and when evaporated on the ſurface of water, a pellicle of reſin is left, whilſt the coloured extractive, which was taken up by means of the reſin, is diſſolved in and colours the water.

Saffron, the κροκος of the Greeks, crocus of the Latins, and zaffaran, or zahafaran of the Arabians, was held in much eſtimation by the Hebrews, who called it carcom, and was greatly celebrated in ancient times both by phyſicians and poets. In medicine, it was conſidered to be very powerful. Schroder aſſerts, that if taken to the quantity of two or three drachms, it proves fatal; and by ſeveral authors we are informed, that in large doſes it produced cephalalgia, intoxication, and mania. It is alſo ſaid to penetrate every part of the body, tinging the ſolids and excretions with a yellow colour; and that even the odour or effluvia of this drug have been known to produce deleterious effects. It appears, however, from the experiments of Dr. Alexander (Exp. Eſſ.), that ſaffron poſſeſſes but very little active power, and may be taken in conſiderable quantity, without producing any remarkable effect; and it was lately given, we are informed, in the Edinburgh Infirmary by Dr. H. Cullen, even to the quantity of half an ounce a day, in ſeveral hyſterical caſes, without any ſenſible effect. It has been generally regarded and deſcribed as a moſt exhilarating cordial; and with this view Boerhaave preferred the extract, inſpiſſated only to the conſiſtence of oil; but modern phyſicians do not furniſh any inſtance in which this drug has had any remarkable effect in raiſing the ſpirits; but Bergius mentions an inſtance of a very contrary effect. It has alſo been conſidered as having conſiderable efficacy as an emmenagogue; but though it has ſometimes ſucceeded in this intention, Dr. Cullen mentions many inſtances in which, though repeatedly employed in large doſes, no good effect was produced. Another quality for which ſaffron has been eſteemed, is that of an antiſeptic; but though it has been found to retard the putrefactive proceſs of animal matter, no proof occurs of its efficacy in this way on the living body, infected by a putrid diſeaſe. Saffron has alſo been employed as a diaphoretic, and for the purpoſe of throwing out variolous puſtules, and other exanthemata; but this practice originated in a miſtaken notion of its action, as well as in a fallacious pathology. Upon the whole, it may be obſerved, that in modern practice no confidence is placed in this medicine, and that it is ſcarcely ever employed otherwiſe than as a cordial adjunct to more active remedies. The doſe in ſubſtance is from x grs. to ʒſs. The officinal preparations are as follow: *viz. Syrup of ſaffron*, "Syrupus croci," which the Lond. Pharm. orders to be made by macerating an ounce of ſaffron in a pint of boiling water for twelve hours, in a ſlightly covered veſſel; then filtering the liquor, and adding to it 2½ pounds of refined ſugar. This ſyrup is cordial in a ſmall degree; but it is chiefly valued on account of its beautiful colour. *Tincture of ſaffron*, "Tinctura croci Anglici" of Edinb. Ph. "Tinctura croci," Dub. is prepared by cutting one ounce of Engliſh ſaffron in ſhreds, and digeſting in fifteen ounces (pint, Dub.) of proof ſpirit for ſeven days, and filtering through paper. The tincture contains almoſt pure extractive, and is ſuppoſed to be ſtimulant and diaphoretic; but its chief value, perhaps, ariſes from its colour. Tincture of ſaffron is uſed as a yellow waſh with water-colour: it is a fine warm yellow, and when very ſtrong, makes a very proper ſhade for the gamboge, or other yellows that are bright, and it will ſtand as well as any of the vegetable tinctures. Saffron likewiſe enters into the compoſition of "Confectio aromatica," L. D. "Pilula aloes cum myrrha," L. "Tinct. aloes compoſita," L. E. D. "Tinctura cinchonæ compoſita," L. D. "Tinctura rhei," L.; and "Tinctura rhei compoſita," L. See TINCTURE. Lewis. Woodville. Thomſon.

SAFFRON, in *Rural Economy*, a plant which has a roundiſh bulbous root, as large as a ſmall nutmeg, which is a little compreſſed at the bottom, and is covered with a coarſe brown netted ſkin; from the bottom of this bulb are ſent out many long fibres, which ſtrike pretty deep into the ground, and from the upper part of the root come out the flowers, which, together with the young leaves, whoſe tops juſt appear, are cloſely wrapped about by a thin ſpatha or ſheath, which parts within the ground, and opens on one ſide. The tube of the flower is very long, ariſing immediately from the bulb, without any footſtalk, and at the top is divided into ſix ovate obtuſe ſegments, which are equal, of a purple blue colour. In the bottom of the tube is ſituated a roundiſh germ, half the length of the petal, crowned with three oblong golden ſtigmas, which ſpread out each way, and which, when carefully picked and preſſed together into cakes, conſtitute the ſaffron of the ſhops. It is a perennial plant, which flowers in October, and the leaves keep growing all the winter, but it never produces any ſeeds in this climate. See CROCUS.

It may be obſerved, that this is a plant that was formerly much cultivated for the above purpoſe, but at preſent it is, we believe, but little attended to by the farmer, though it is probably ſtill grown in ſmall quantities in Cambridgeſhire, to which diſtrict it has removed from Saffron-Walden in Eſſex, where it was perhaps firſt cultivated. It was, however, grown at an early period in Herefordſhire. It is remarked by the editor of Miller's Dictionary, that in the firſt of theſe counties the quantity of land under ſaffron has been gradually leſſening during the laſt twenty or twenty-five years, owing, as it is thought, at firſt, to the lowneſs of the price occaſioned by the great importation of foreign ſaffron. It is now confined to two or three pariſhes only, of which Stapleford is one; and if ſome means are not uſed to encourage it, the cultivation of ſaffron will probably ſoon be entirely loſt in this country. But whether ſaffron be of any national conſequence he is not a competent judge, he only knows that when the culture is entirely dropped, it will be no eaſy matter to revive it. Formerly the ſuperiority of Engliſh ſaffron was much celebrated, but lately it has been depreciated. This is not owing to our commodity being inferior to what it was, for it has at all times come out of the hands of the growers pure and genuine, but perhaps the foreign dealers are not wiſe enough to leave off their old ſophiſtications with baſtard ſaffron, or ſafflower, marygolds, &c.; and if ſo, their commodity, coming from a warmer climate, may have the ſuperiority; he only knows, that if the foreign ſaffron can be afforded cheaper, it will be encouraged without attending to its quality, and that he has very lately experienced a very ſenſible difference between the foreign and Engliſh ſaffron, greatly to the advantage of the latter.

Mode of Culture.—The manner of growing it in the extenſive tract of ground between Saffron-Walden and Cambridge, is this, according to ſir James Douglas. The greateſt part of this tract is an open level country, with few incloſures; and in which the cuſtom is, as in moſt other places, to crop two years, and let the land lie fallow the third. It is always planted upon fallow ground; and, all other things being the ſame, they prefer that which has borne barley the year before. The grounds for this uſe are ſeldom above three acres, or leſs than one; and in chooſing them, the principal thing which is had regard to is, that they be well expoſed, the ſoil not poor, nor a very ſtiff clay, but good dry mould, ſuch as commonly lies upon chalk, and is of an hazel colour; though if every thing elſe anſwers, the colour of the mould is not of much conſequence. But Mr. Bradley, in his "Treatiſe on Huſbandry and Gardening," ſays, that he has found it ſucceed well in land of the common heath kind, where the ſurface has been pared and burnt, and that by his direction ſome acres had been planted with ſucceſs on ſuch ſort of ground, which was ſcarcely worth one ſhilling the acre. The aſhes, in theſe caſes, he conſiders as a ſufficient manure. But this ſort of ſoil does not ſeem to have fully anſwered in the culture of the ſaffron plant, as no mention is made of it afterwards.

In the preparation for it, about the beginning of April the land is carefully ploughed, the furrows being drawn much cloſer together, and deeper, if the ſoil will allow it, than is done for any kind of corn; and, accordingly, the charge is greater. And about five weeks afterwards, at any time in the month of May, between twenty and thirty loads of dung are laid upon each acre; and, having ſpread it with great care, it is ploughed in as before; the ſhorteſt rotten dung is the beſt, and the farmers, who have the conveniency of making it, ſpare no pains to make it good, being ſure of a proportional price for it. About midſummer a third ploughing is given, and between every ſixteen feet and a half, or pole in breadth, a broad furrow or trench is left, which ſerves both as a boundary to the ſeveral parcels, where there are ſeveral proprietors to one incloſure, and to throw the weeds into at the proper ſeaſon.

And the fencing in of the ground is likewiſe neceſſary, and is moſt commonly, though not always, done before planting. The fences conſiſt of what is termed dead hedges, or hurdles, ſo as to keep out not only cattle of all ſorts, but eſpecially hares, which would otherwiſe feed on the ſaffron-leaves during the winter. In reſpect to the weather, the hotteſt ſummers are always the beſt; and where there are gentle ſhowers from time to time, there can hardly miſs being a plentiful crop, where the extreme cold, ſnow, or rain of the preceding winter have not prejudiced the heads or bulbs of the plants.

Planting.—The next buſineſs in this ſort of culture is planting, or ſetting the roots; the only inſtrument uſed for which is a narrow ſpade, commonly termed a ſpit-ſhovel. In reſpect to the time of planting, it is commonly in July, a little ſooner or later, according as the weather anſwers. The method is this: one man with his ſpit-ſhovel raiſes between three and four inches of earth, and throws it before him about ſix or more inches: two perſons, generally women, following with heads or bulbs, place them in the fartheſt edge of the trench, which he makes at about three inches diſtance from each other: as ſoon as the digger or ſpitter has gone once the breadth of the ridge he begins at the other ſide, and digging as before, covers the roots laſt ſet, and makes the ſame room for the ſetters to place a new row, at the ſame diſtance from the firſt as they are from one another: thus they proceed till a whole ridge is planted; and the only nicety in digging is, to leave ſome part of the firſt ſtratum of earth untouched, to lie under the roots, and in ſetting, to place the roots directly upon their bottoms.

But with regard to the roots formerly, when they were very dear, they did not plant them ſo thick as they do now, and they have always ſome regard to the ſize of the roots, placing the larger ones at a greater diſtance than the ſmaller ones. The quantity of roots planted in an acre is generally about ſixteen quarters, or one hundred and twenty-eight buſhels; which, according to the diſtances left between them, as before aſſigned, and ſuppoſing all to be an inch in diameter one with another, ought to amount to three hundred and ninety-two thouſand and forty in number. But this very large quantity is probably much more than is abſolutely required.

From the time that the roots are planted, till about the beginning of September, or ſometimes later, there is no more labour about them; but as they then begin to ſpire, and are ready to ſhew themſelves above ground, which is known by digging a few out of the earth, the ground muſt be carefully pared with a ſharp hoe, and the weeds, &c. raked into the furrows, otherwiſe they would hinder the growth of the plants. In a little time afterwards the ſaffron flowers appear. Theſe flowers are gathered both before and after they are full blown; and the moſt proper time for this is early in the morning. The owners of the ſaffron get together a ſufficient number of hands, who place themſelves in different parts of the field, pull off the whole flowers, and throw handful by handful into a baſket, and ſo continue till all the flowers are gathered, which is commonly about ten or eleven o'clock. Having then carried home all they have got, they immediately ſpread them upon a large table, and begin picking out the filaments, or chives, and together with them a pretty long proportion of the ſtyle itſelf, or ſtring to which they are joined; the reſt of the flower they throw away as uſeleſs. The next morning they return into the field again, whether it be wet or dry weather; and ſo on daily, even on Sundays, till the whole crop be gathered.

Drying.—The ſtigmas, or chives, being all thus picked out of the flowers, the next labour is to dry them on a kiln, which is built upon a thick plank, that it may be removed from place to place, ſupported by four ſhort legs; the outſide having eight pieces of wood about three inches thick, in form of a quadrangular frame, about twelve inches ſquare at the bottom of the inſide, and twenty-two inches at top; which is likewiſe equal to the perpendicular height of it. On the fore-ſide is left a hole, about eight inches ſquare, and four inches above the plank, through which the fire is put in. Over all the reſt laths are laid pretty thick, cloſe to one another, and nailed to the frame already mentioned: and then plaſtered over on both ſides, as alſo the planks at bottom very thick, to ſerve for an hearth. Over the mouth, or wideſt part, goes an hair-cloth, fixed to the ſides of the kiln; and likewiſe to two rollers or moveable pieces of wood, which are turned by wedges or ſcrews, in order to ſtretch the cloth. Inſtead of the hair-cloth, many people uſe a net-work, or iron wire, with which it is obſerved that the ſaffron dries ſooner and with a leſs quantity of fuel: but the difficulty in preſerving the ſaffron from burning makes the hair-cloth be preferred by the niceſt judges in drying.

The kiln is placed in a light part of the houſe; and the work is begun by laying five or ſix ſheets of white paper on the hair-cloth, upon which is ſpread the wet ſaffron between two and three inches thick: this is covered with other ſheets of paper, and over theſe they lay a coarſe blanket, five or ſix times doubled; or, inſtead of it, a canvas pillow filled with ſtraw; and, after the fire has been lighted for ſome time, the whole is covered with a board, having a large weight upon it. At firſt a pretty ſtrong heat is given to make the chives ſweat, as their expreſſion is; and in this, if they do not uſe a great deal of care, they are in danger of ſcorching, and conſequently of ſpoiling, all that is on the kiln.

When it has been thus dried about an hour, they take off the board, blanket, and upper papers, and take the ſaffron off from that which lies next it; raiſing at the ſame time the edges of the cake with a knife; then laying on the paper again, they ſlide in another board between the hair-cloth and under papers, and turn both papers and ſaffron upſide down, afterward covering them as before. The ſame heat is continued for an hour longer; then the cake is examined again, freeing it from the papers, and turning it; then covered, and the weight laid on as before. If nothing happens amiſs during the firſt two hours, the danger is ſaid to be over; as there is nothing more to do but to keep a gentle fire, and to turn the cakes every half hour, till thoroughly dry; for the doing which properly, full twenty-four hours are neceſſary.

But though, in drying the layers of plump chives, nothing more is uſed; yet towards the latter end of the crop, when theſe come to be ſmaller, the cake is ſprinkled with a little ſmall beer, to make it ſweat as it ought; and it is now ſuppoſed that uſing two linen cloths next the cake, inſtead of the two innermoſt papers, is of ſome advantage in drying; but this practice is followed only by few. The fire may be made of any kind of fuel; but that which ſmokes the leaſt is beſt; and charcoal for that reaſon is preferred to any other.

In reſpect to the quantity of ſaffron a firſt crop will produce, it is very uncertain; ſometimes five or ſix pounds of wet chives are got from one crop; ſometimes not above one or two, and ſometimes not enough to make it worth while to gather and dry it. But it is always to be obſerved, that about five pounds of wet ſaffron go to make one pound of dry, for the firſt three weeks of the crop; and ſix pounds during the laſt week; and now when the heads are planted very thick, two pounds of dried ſaffron may, at a medium, be allowed to an acre for the firſt crop, and twenty-four pounds for the two remaining; the third being conſiderably larger than the ſecond.

In order to obtain theſe, there is only a repetition to be made every year of the labour of hoeing, gathering, picking, and drying, in the ſame manner as before, without the addition of any thing new; except that the cattle are let into the field, after the leaves are decayed, to feed upon the weeds; or they are, perhaps, mown for the ſame uſe.

Taking up the Roots.—About midſummer, after the third crop is gathered, the roots muſt be all taken up and tranſplanted. To take up the ſaffron-heads, or break up the ground, as the term is, they ſometimes plough it, ſometimes uſe a forked kind of hoe, called a pattock, and then the ground is harrowed once or twice over; during all which time of ploughing or digging, and harrowing, fifteen or more people will find work enough to follow and gather the heads, as they are turned up. They are next to be carried to the houſe in ſacks, and there cleaned and raiſed: this labour conſiſts in cleaning the roots thoroughly from the earth, and from the remains of old roots, old involucra, and excreſcences; and thus they become fit to be planted in new ground immediately, or to be kept for ſome time without danger of ſpoiling. The quantity of roots taken up, in proportion to thoſe that were planted, is uncertain; but, as a medium, it may be ſaid, that, allowing for all the accidents which happen to them in the ground, and in breaking up, from each acre may be had twenty-four quarters of clean roots, all fit to be planted. The owners are ſure to chooſe for their own uſe the largeſt, plumpeſt, and moſt fleſhy roots; but approve leaſt of all the long-pointed ones, which they call ſpickards, for very ſmall round or flat roots are ſometimes obſerved to flower. This is the whole culture which is requiſite. With reſpect to the charges and profits which may be expected from this ſort of culture, the following was the computation for one acre of ground, before the late riſes in the price of labour and the value of land; which is, of courſe, much below what the preſent expences would be.

Expences of Cultivation for three Years.

	£	s.	d.
Rent for three years - - - -	3	0	0
Ploughing for three years - - -	0	18	0
Dunging - - - - - -	3	12	0
Hedging - - - - - -	1	16	0
Spitting and ſetting the heads - - -	1	12	0
Weeding or paring the ground - -	1	4	0
Gathering and picking the flowers - -	6	10	0
Drying the flowers - - - -	1	6	0
Inſtruments of labour for three years, with the kiln, about - - -	0	10	0
Ploughing the ground once, and harrowing twice - - - -	0	12	0
Gathering the ſaffron-heads - - -	1	0	0
Raiſing the heads - - - - - -	1	12	0
Total charge	23	12	0

This calculation is made upon the ſuppoſition that an acre of ground yields twenty-ſix pounds of net ſaffron in three years; which is ſtated only as a mean quantity between the greateſt and the leaſt; and therefore the price of ſaffron muſt be judged accordingly, which cannot be done better than fixing it at thirty ſhillings *per* pound; ſince, in plentiful years, it is ſold at twenty, and is ſometimes worth three or four pounds; at this rate, twenty-ſix pounds of ſaffron are worth thirty-nine pounds; and the net profit of an acre of ground, producing ſaffron, will, in three years, amount to fifteen pounds thirteen ſhillings, or about five pounds four ſhillings yearly. And this, it is ſuppoſed, may be conſidered the net profit of an acre of ſaffron where all the labour is paid for in ready money; but as the planter often does much of the work, ſome of the expences may be ſaved. He may, of courſe, expect to clear five pounds, beſides ſupporting his family part of the year. But all ſuch calculations muſt be liable to great inaccuracy. Nothing is ſaid concerning the charges in buying, or profits in ſelling, the ſaffron-heads; as in large tracts of ground theſe muſt, it is ſuppoſed, at length balance each other, while the quantity of ground planted yearly continues the ſame.

Saffron, *Baſtard*, in *Botany*. See Carthamus.

Saffron, *Indian*. See Turmeric.

Saffron, *Meadow*, in *Botany*, *Mat. Med.*, &c. See Colchicum. Mr. Want, late ſurgeon to the Northern Diſpenſary, conſiders colchicum as the baſis of the "Eau Medicinale," lately highly extolled as a remedy for the gout. Accordingly he recites in the "Medical Journal" ſeveral caſes, in which the colchicum was ſucceſsfully adminiſtered in paroxyſms of this diſeaſe. The colchicum, he ſays (Med. Journ. N° 188.), though it has generally a purgative and often an emetic property, appears to have ſome ſpecific operation in the treatment of gout, which it remains for future experiments to develope.

Saffron, *Common Meadow*, in *Farming*, a plant of the poiſon-weed kind, which has a bulbous root of the ſize and ſhape of the tulip, but not ſo ſharp, pointed at the top; the ſkin or cover is alſo of a darker colour: theſe bulbs are renewed every year, for thoſe which produce the flowers decay, and new roots are formed above. The flowers come out in autumn; they ariſe with long ſlender tubes from the root about four inches high, ſhaped like thoſe of ſaffron, but larger: the number of flowers is generally from two to ſeven or eight: in March the green leaves appear, theſe are commonly four to a full grown root; they are folded over each other below, but ſpread open above the ground, ſtanding

ing croſswiſe; they are of a deep green, and when fully grown are five or ſix inches long, and one and a half broad. The ſeed-veſſels come out from between the leaves in April, and the ſeeds ripen in May, ſoon after which the leaves decay. The ſeeds lie buried all winter within the bulb, but in ſpring they grow up on a fruit-ſtalk, and are ripe about the time of hay harveſt. See Colchicum.

Mr. Carpenter, in his "Treatiſe on Agriculture," ſays, this plant is moſt frequently found in ſpongy lands inclined to moiſture, and is a very pernicious and deadly plant, ſcarcely noticed by the farmers in general; but it is well known by others to prove fatal both to cattle, deer, and fawns, when eaten by them in its different ſtates: it is more eſpecially poiſonous in a *withering ſtate;* and, like the branches of box or yew, univerſally known to deſtroy almoſt every ſpecies of the brute creation. And that as prevention is preferable to cure, he adviſes and entreats every farmer totally to extirpate it from his premiſes, by drawing the roots and branches in the ſame way as docks, obſerving to deſtroy them immediately, as by firſt chopping, bruiſing, and then burying them very deep under ground, or burning them, that cattle may not devour a particle of ſo deſtructive a plant. He aſſerts that two grains of this root is certain and ſpeedy death to any human being.

But, according to Dr. Woodville, in his Medical Botany, no cattle eat it. He ſays that he had a paſture where there were ſeveral horſes, and which was eaten down pretty bare; the graſs was cloſely cropped, even under the leaves, but not a leaf of the meadow ſaffron was bitten. There are ſeveral varieties of this plant.

It is however added by Mr. Carpenter, that the ſymptoms of the effects of the malady cauſed by cattle eating this plant, are generally, difficulty in breathing and in diſcharging urine, which is very high coloured, the body coſtive, and the excrements hard and knotty, with dimneſs of ſight and a general loſs of the limbs. When the beaſt offers to ſtand he ſtaggers, and then tumbles, and dies with a great ſwelling all over the body, which on opening the lungs are apparently diſtended, and in a ſtate of mortification. The moſt preferable means to be uſed to effect a cure in theſe caſes are, he thinks, by honey, and other ſtrong opening and evacuating remedies, where the diſorder is taken in time. He ſtrongly adviſes noblemen, gentlemen, and farmers, ſtrictly to obſerve the above directions, as many cattle, deer, and fawns, may be preſerved from an unexpected death by it, the real cauſe of which is almoſt unknown, and conſequently unaccounted for, by thoſe concerned in endeavouring to adminiſter remedies to theſe moſt profitable, uſeful, and innocent animals.

Saffron-*Tree*, in *Natural Hiſtory*, the name of an Eaſt Indian ſhrub, which grows to about two feet high, having ſquare branches, which are beſet with leaves in pairs. The pedicles of the flowers come from the alæ of the leaves, and are branched, each pedicle ſupporting about five flowers; theſe are of the ſhape of the jaſmine flowers, and are white above, and of the fine reddiſh-yellow colour of ſaffron below. The flowers never open but in the night, and then do not perfectly expand themſelves, but all the petals remain in ſuch a poſition, that they can cloſe inſtantaneouſly on occaſion of the leaſt heat; they are placed each in a green cup, to which they are ſo ſlightly faſtened, that the leaſt motion makes them fall. They ſeldom ſtand more than four days, often not ſo long; the flowers have no ſmell, but are of a cordial virtue, approaching to that of ſaffron. Mem. Acad. Paris. 1699.

Saffron is alſo a name given to ſeveral chemical preparations, from the reſemblance of their colour to that of the vegetable ſaffron, but more uſually called *croci.* See Crocus. Such are,

Saffron *of Venus.* See Copper, and Venus.

Saffron *of Mars.* See Crocus *Martis.*

Saffron *of Gold.* See Aurum *Fulminans.*

SAFFRON-WALDEN, Walden, or *Chipping-Walden*, in *Geography*, a market-town with ſeparate juriſdiction, locally ſituated in the hundred of Uttesford, and county of Eſſex, England; is 25 miles N.N.W. from Chelmsford, the county town, and 42 N.N.E. from London. The ſituation of this place is peculiar; Dr. Stukeley conjectures it to have been the ſcite of a Roman ſtation, and "the moſt beautiful he ever beheld."—"A narrow tongue of land," he continues, "ſhoots itſelf out like a promontory, encompaſſed with a valley in the form of a horſe-ſhoe, incloſed by diſtant and moſt delightful hills. On the bottom of the tongue ſtand the ruins of a caſtle; and on the top, or extremity, the church, round which, on the ſide of the hill, and in the valley, is the town built; ſo that the bottom of the church is as high as the town, and ſeen above the tops of the houſes." At the period of the Domeſday ſurvey, Walden was one of the numerous lordſhips poſſeſſed by Geoffrey de Magnaville, a Norman chief, who accompanied the Conqueror into England, and whoſe ſervices were rewarded with 118 lordſhips, of which forty were in this county. This nobleman founded a caſtle here, and, according to the expreſſion of Camden, "firſt gave life to the place," which afterwards became the head of the barony and honour of Magnaville. This caſtle occupied the higheſt part of the town, and, from the remaining fragments, appears to have been of great ſtrength; the walls having been compoſed of ſmall flints, bound together by a very ſtrong cement. Geoffrey, grandſon of the above, was a man of great perſonal bravery; a quality which, in his turbulent age, was of the firſt neceſſity. King Stephen made him keeper of the Tower of London, and created him earl of Eſſex; probably with a view of retaining him firmly in his intereſt; but the more advantageous offers of the empreſs Maud allured him to her party. Beſides very ample grants of land, ſhe conſtituted him hereditary ſheriff of London, and of the ſhires of Middleſex, Hertford, and Eſſex; ſhe confirmed to him the poſſeſſion of all his forts and caſtles; and gave him liberty to retain and fortify the Tower of London at his pleaſure. She alſo granted him liberty to remove the market from the neighbouring town of Newport, to his caſtle at Walden, there to hold it twice weekly, on Thurſday and Sunday; with the right of all tolls, cuſtoms, &c. Stephen being privately informed of the defection of the earl, cauſed him to be arreſted at St. Alban's, in 1143; and, before he could obtain his liberty, he was obliged to ſurrender the government of the Tower, together with his own caſtles of Walden and Pleſhy, to the king. Inflamed by vengeance for this treatment, with a band of deſperate partiſans he ravaged the demeſnes of the ſovereign and his adherents, without mercy; but was at length ſhot by an arrow (A.D. 1144), while beſieging the caſtle of Burwell, in Cambridgeſhire, when under ſentence of excommunication for having plundered the abbey of Ramſey, in Huntingdonſhire. Beſides the growing importance obtained by this town through the removal of the market from Newport, its conſequence was further advanced by the founding of a Benedictine priory here, by the above earl Geoffrey, in the year 1136; and which was converted into an abbey in 1190. It ſtood on the ſpot now occupied by Audley Houſe; and was ſupported by conſiderable endowments from eſtates and churches in various counties. At the ſuppreſſion of monaſteries, its poſſeſſions were granted by Henry VIII. to the lord chancellor Audley, who alſo obtained licence to enlarge his park by encloſing 200 additional acres. This grant included the manor of Walden, and deſcended to Thomas Howard, created earl of Suffolk in 1603, who erected the magnificent manſion of Audley End, to which he gave that name out of reſpect to his maternal anceſtor the lord chancellor, from whom he derived the eſtate. Walden was made a corporate town by Edward VI. in 1549, when its government was veſted in twenty perſons, out of whom a treaſurer or chief officer, and two chamberlains, were annually choſen. Theſe officers were changed, by charter of William III., into a mayor, twelve aldermen, a recorder, town-clerk, &c., by whom the police is now regulated. The church is a ſpacious and elegant pile of Engliſh architecture, and conſiſts of a nave, chancel, and ſide aiſles. It is called by Walpole one of the lighteſt and moſt beautiful pariſh churches in England. This fabric was thoroughly repaired in the years 1791, 1792, and 1793, at the expence of nearly 8000*l.*, to which the late lord Howard contributed nearly 3000*l.*; he was a liberal benefactor to the pariſh, particularly to the poor, to whoſe uſe he bequeathed the intereſt of a ſufficient ſum to clothe twelve of each ſex annually for ever. He died in May 1797, and was buried with his anceſtors in the family vault in this church. At the ſouth-weſt end of the town are ſome alms-houſes, founded in the reign of Edward VI. Here is alſo a free-ſchool, of ancient foundation, on which that monarch beſtowed ſome additional endowments. The number of inhabitants of this town, as returned under the population act of 1811, was 3403; that of houſes 686. On the green, behind the caſtle, was formerly a ſingular work, called the Maze, formed by a number of concentric circles, with four outworks, all cut in the chalk; which Dr. Stukeley ſuppoſes to have been a Britiſh curſus, for exerciſing the ſoldiery. About half a mile from the caſtle, on the weſt, are the remains of an ancient encampment, called the Pell Ditches; the ſouth bank is 730 feet long; the weſt bank 588. Both banks and ditches are extremely bold, and in good preſervation.

About the diſtance of one mile weſtward from the town, is Audley-End, or Audley-Houſe, the ſeat of lord Braybrooke, who derived it from the late lord Howard de Walden, as he did from Thomas, lord Howard de Walden, already mentioned as created earl of Suffolk, 1ſt James I. This nobleman, while lord high treaſurer of England, built the ſplendid and ſpacious palace of Audley-Inn, which was calculated to ſurpaſs all the manſions of the country. The proprietor ſeemed determined, as Walpole obſerves, to “have an immenſe pile of building,” and to effect this, it is related that his lady raiſed conſiderable ſums in the ſale of commiſſions, court-patronage, &c. The earl alſo is ſaid to have ſold an eſtate of great value, to defray the exorbitant expences of building, &c.; and his uncle, the earl of Northampton, aſſiſted him by large contributions. The houſe appears to have been erected in 1616; but whether it was then begun, or finiſhed, is not ſtated. A model of the deſign was procured from Italy, and coſt 500*l.*; but it is preſumed that plans and working drawings were provided by a ſurveyor, or clerk of the works. The whole expence of erecting the manſion is ſtated at 190,000*l.* Philip, earl of Pembroke, in a MS. note, ſays, “I heard my lord treaſurer Suffolk once tell king James, that, inſide and outſide, in the furniture, it coſt him 200,000*l.* ſterling.” The complete manſion originally ſurrounded two quadrangular courts; beſides other offices and out-houſes. The weſtern court was very ſpacious, and was approached through a grand entrance gateway between four round towers. On the north and ſouth ſides were corridores, ſupported by columns of alabaſter; and on the eaſt ſide was an entrance into the great hall. Paſſing through this, there was a ſmaller ſquare court, three ſides of which remain, and conſtitute the preſent manſion. In its perfect ſtate, the entire pile appeared like a large college, with numerous turrets, cupolas, and pinnacles. The rooms were large, inconvenient, and many of them unpleaſant; and to keep the whole in good repair required an immenſe fortune; great part of it was, in conſequence, pulled down, and the materials ſold. At the eaſt end of the building was a gallery, meaſuring 226 feet in length, 32 feet in width, and 24 in height. The weſtern quadrangle, according to Walpole's ſtatement, was deſtroyed by the advice of “that injudicious architect” ſir John Vanbrugh, who deſigned the preſent ſkreen and ſtairs at the ſouth end of the great hall. At the north end of this room is the old carved ſkreen with two doors, or hatches, and a muſic gallery over it. The fire-place is large and appropriate; oppoſite to which is a large bay window, extending nearly from the floor to the cieling. To the north are the kitchen, ſervants' offices, &c.; and to the ſouth, the dining rooms, drawing rooms, and libraries. Above the dining room is a large handſome ſaloon, the cieling and mantlepiece of which are highly ornamented with ſtucco, carving, painting, and emblazoning. The grand entrance front of the preſent edifice, which, though ſo much curtailed, may ſtill be regarded as a large manſion, is adorned with two uniform projecting porches, each having ſeventeen marble columns at the angles. Some of theſe are white, with black baſes and capitals; the others are of dark veined marble, with white baſes and capitals. The various apartments were furniſhed and decorated in a coſtly and elegant ſtyle by the late lord Howard. The hall ſtill preſerves its ancient character; and exhibits an intereſting ſpecimen of the magnitude and ornaments which characterized theſe apartments in old baronial manſions. The grounds are pleaſingly diverſified with hill and dale; the former is richly adorned with wood; the latter enlivened with the clear waters of the river Granta, which forms a wide canal in front of the houſe. A handſome bridge of three arches was built acroſs this river by Mr. Adams, in 1764.

On the top of Ring-hill, to the weſt of the manſion, is a circular temple, occupying the ſcite of an ancient tower, which Dr. Stukeley has given a print of, with ſome account, in his Itinerary; but which appears to have been only the remains of a Warren-houſe, or Belvidere. The whole ſummit of this hill is incloſed with an intrenchment, nearly circular, including an area of about fifteen acres; it is ſuppoſed by Salmon, in his fragment of a hiſtory of Eſſex, to have been the Canonium of the Itinerary.

At Littlebury, a village about one mile north from Audley End, was another encampment, within the area of which is the preſent church; a ſmall plain fabric, having a nave, chancel, and ſide aiſles: near it is an alms-houſe, and a free-ſchool. Hiſtory and Antiquities of Eſſex, by the Rev. P. Morant, two vols. folio. Beauties of England and Wales, vol. v. by J. Britton and E. W. Brayley. Architectural Antiquities of Great Britain, by J. Britton, F.S.A. vol. iii. 4to. 1812.

SAFFURE, or Safura. See Sephoury.

SAFIA, a river of Arabia, which runs into the Red ſea, two miles N. of Tſor, or Sur.

SAFIEHA, a town of Nubia; 30 miles S.S.E. of Syene.

SAFNAS, a town of Egypt; 12 miles S.W. of Tineh.

SAFRA, a town of Arabia Petræa; 40 miles S.S.W. of Medina.—Alſo, an extenſive mountain of Arabia, in the province of Hedſjas, three days' journey diſtant from the Arabic gulf; which furniſhes a conſiderable quantity of balm of Mecca.

SAFRANI, a ſmall iſland in the Grecian Archipelago; nine miles S.E. of Stampalia.

SAFVA, a town of Sweden, in the province of Upland; eight miles W. of Upſal.

SAFVAR, a town of Sweden, in Weſt Bothnia; eight miles N.N.E. of Umea.

SAFVAS, a town of Sweden, in Weſt Bothnia; 20 miles N.W. of Lulea.

SAG El, a ſmall iſland in the river Nile, anciently called "Elephantina;" the northern part of which is mountainous, and covered with ruins.

SAGADAHOC, a name formerly given to a great part of the diſtrict of Maine in America. The territory diſtinguiſhed by this appellation was granted by king Charles II. to his brother the duke of York, called the duke of York's property, and annexed to the government of New York. At the revolution in 1688 it reverted to the crown.

Sagadahoc, or *Ameraſcoggin*, a river of America, which runs into the Kennebeck, about ten miles from its mouth.

SAGADENON, a name given by the ancients to what they ſay was the very fineſt kind of opobalſamum, produced in Paleſtine and the adjacent country.

SAGALA, in *Ancient Geography*, a town of India, on this ſide of the Ganges.

SAGALESSUS, or Sagalassus, a conſiderable town of Aſia Minor, S. of Apamæa Cibotos; placed by Ptolemy in Lycia, by others in Piſidia, and by M. D'Anville in the interior of the limits of Phrygia. Hierocles calls it "Agaleſſus." According to Strabo, it was within the department of the governor eſtabliſhed by the Romans in the kingdom of Amyntus. According to Livy the territory of this town was fertile, and its inhabitants a brave people.

SAGAMOND, in *Geography*, a river of America, in the N.W. territory, which has a S.E. courſe, and enters Illinois river, 30 miles below Demi-quian river, and 135 from the Miſſiſippi; 100 yards wide at its mouth, and navigable for ſmall boats or canoes upwards of 150 miles.

SAGAN, a town of Sileſia, and capital of a principality of the ſame name, ſituated on the Bober, and ſurrounded by a double wall. The magiſtrates are Catholics, but the Lutherans have a church and a ſchool. In this town are ſeveral iron-mills and a copper-mill; 80 miles N.W. of Breſlau. N. lat. 51° 37′. E. long. 15° 20′.—Alſo, a principality of Sileſia, bounded on the N. by the duchy of Croſſen, on the E. by the principality of Glogau, and on the S. and W. by Luſatia and the duchy of Croſſen. It contains a number of woods, and abounds in iron-ore. It was formerly united to Glogau. It contains four towns, the capital being Sagan.

Sagan, in *Scripture Hiſtory*, the ſuffragan or deputy of the Jewiſh high prieſt: who, according to ſome, was only to officiate for him, when he was rendered incapable of attending the ſervice through ſickneſs, or legal uncleanneſs, on the day of expiation; or, according to others, who was to aſſiſt the high prieſt in the care of the affairs of the temple and the ſervice of the prieſts.

SAGANAK, in *Geography*, a town of Turkeſtan, on the Sir. It was large and ſtrong, when taken by Jenghiz Khan, who put 10,000 of the inhabitants to death; 90 miles W. of Taraz.

SAGANAUM, or Sagane, *Bay*, a bay of lake Huron, in the S.W. part, about 80 miles long and 18 or 20 broad. The territory ſurrounding it is inhabited by the Chippaway Indians.—Alſo, a river which runs into this bay, N. lat. 44°. W. long. 83° 35′.

SAGANIAN, a river of Grand Bucharia, which joins the Gihon at Termed.—Alſo, a town of Aſia, in the country of Bucharia; 60 miles E. of Samarcand.

SAGANKA, a name of the moon among the Hindoos, or rather of its perſonification in the form of Chandra, or Soma. See Soma.

SAGANUS, in *Ancient Geography*, a town of Aſia, in Caramania. Ptolemy and Ammianus Marcellinus.

SAGAPENUM, Σαγαπηνον, a medicinal gum reſin, whoſe ſmell comes very near that of a pine; whence its name.

It flows, by inciſion, from the trunk of a ferulaceous plant growing in Perſia; the beſt is in bright tranſparent tears of a ſtrong, pungent, porraceous ſmell: and the whiter and freer from dirt, the better. Sometimes it is found as white, both within and withoutſide, as milk; though this is very rare. Dioſcorides mentioned it as the juice of a ferula growing in Media. Willdenow ſuppoſes it to be the *Ferula perſica*.

The ſagapenum is brought directly from Alexandria; either in diſtinct tears, or run together into large maſſes; outwardly of a yellow colour, but internally ſomewhat paler and clear, like horn; growing ſoft on being handled, ſo as to ſtick to the fingers. It melts at a low heat, and burns with a crackling noiſe and white flame, yielding much ſmoke, and leaving behind a light ſpongy coal. It is diſſolved partially by water and ſtrong alcohol, and almoſt completely by proof ſpirit. Diſtilled with water it yields a little volatile oil, and impregnates the water ſtrongly with its flavour. Its conſtituents appear to be gum, reſin, and an eſſential oil, on which its virtues chiefly depend. It is ſometimes ſupplied in the ſhops by the larger and darker coloured maſſes of bdellium. It has a ſtrong diſagreeable ſmell, reſembling that of the leek-kind, or a mixture of galbanum with a little aſſa-fœtida; and a moderately hot biting taſte. It is one of the ſtrongeſt deobſtruent gums, and frequently preſcribed, either by itſelf, or in conjunction with ammoniacum or galbanum, in hyſteric caſes, uterine obſtructions, aſthmas, and other diſorders in which aſſa-fœtida has been found ſerviceable; but its powers are much weaker. It may be commodiouſly taken in the form of pills from grs. x to ʒſs; in doſes of a drachm, it looſens the belly. See Pills *of Galbanum, Compound*.

It is alſo uſed externally to aſſuage pains, and reſolve tumours. Lewis. Thomſon.

SAGAPOLA, in *Ancient Geography*, a mountain in the interior of the eaſtern part of Mauritania Cæſarienſis, in which was the ſource of the river Sabus.

SAGARA, in *Hindoo Mythology*, is a perſonification of the ſea. Samudra and Nadit are other names, anſwering to the character of Oceanus in weſtern mythology. Samudra is read of as officiating prieſt at the nuptials of Viſhnu and Lakſhmi; an allegory connected with the phyſical phenomena, perhaps of rarefaction and condenſation, Lakſhmi being the daughter of the ocean, and Viſhnu the ſun, to whom ſhe is offered by her parent Samudra. (See Samudra.) In other allegories Sagara is made to eſpouſe Sumati, a maid of ſurpaſſing beauty, daughter of Garuda, or Superna, the man-eagle that ſerves as a vehicle for Viſhnu. (See Superna.) This marriage, and its extravagant progeny, is connected, by a long allegorical chain, with the ſource and courſe of the Ganges, and is very poetically detailed in the firſt book of the Ramayana. (See Ramayana.) Sagara is a name occurring alſo in hiſtorical relations, as the ſon of a Raja Bahu, ſovereign of Oude; but ſo intermingled with fable as not to be deſerving of farther notice in that light. The extravagant progeny above alluded to were 60,000 ſons, which ſprang from a gourd, produced by Sumati; they were all deſtroyed by the power of the Muni Kapila, as noticed under the articles MUNI and SUMATI.

SAGARA *Nacken Bay*, in *Geography*, a bay on the E. coaſt of the iſland of Java. S. lat. 7° 33′. E. long. 109° 21′.

SAGARAWIDA BAY, a bay on the S. coaſt of the iſland of Java. S. lat. 8° 15′. E. long. 113°.

SAGARIS, BEREZEN, in *Ancient Geography*, a river of Sarmatia, the mouth of which was in the iſland Leuce, the ſame with that of the Boryſthenes.

SAGARTES, in *Geography*, a town of New York, in the county of Ulſter; 15 miles S. of Hudſon.

SAGARTII, in *Ancient Geography*, a people of Aſia, in Media, E. of mount Zagros (Ptol.) and reckoned by Herodotus among thoſe of Perſia.

SAGATA, in *Geography*, a town of Naples, in Capitanata; 13 miles S.E. of Termoli.

SAGATAY. See ZAGATAY.

SAGATHEE, in *Commerce*, a ſlight woollen ſtuff; being a kind of ſerge, or ratteen; ſometimes mixed with a little ſilk. It is manufactured chiefly at Amiens; though we have our ſhare of it in England.

The word is formed from the French, *ſayette*, a diminutive of *ſaye*, *ſay*. (See SAY.) The French name *ſayette* again is derived from that of the thread uſed herein, which is chiefly prepared and ſpun in Flanders, about Turcoing, &c. and called *fil de ſayette*.

SAGATUK, in *Geography*, a ſmall river of Connecticut, which riſes in Ridgefield, in Fairfield county, paſſes through Reading and Weſton, and running ſouthward, ſeparates Fairfield from Norwalk, and diſcharges itſelf into a harbour of its own name in Long Iſland ſound.

SAGDA, or PSAGDA, in *Natural Hiſtory*, the name of a ſtone deſcribed by Aldrovand, which he ſays is of a green colour, and has the property of attracting wood.

Pliny and the ancients give this name to a gem of a greeniſh colour, very much eſteemed at that time; and about the origin of which the ancients had many fabulous reports. Solinus tells us, that it is produced at the bottom of the ſea, and thence riſes up of itſelf as ſhips paſs over the place where it is, and fixes itſelf to their bottoms, and that it cannot be got off again without cutting away a part of the wood. This author has generally taken his accounts of things from Pliny; though he has been at the pains to diſguiſe them, in ſuch a manner, that they are often unintelligible. All that Pliny ſays on this occaſion is, that the ſagda was of a green colour, and was found by the Chaldæans at the bottoms of their ſhips; even this, however, is not very intelligible, unleſs they meant that the ſhips which traded to the Red ſea, and lay long in the harbours, and were ſometimes a-ground, picked up at their bottoms the ſtones which make up the ſhores, and ſome of theſe are of the jaſper kind, and uſually green; at this rate it could not be a ſtone of any great value, nor do we indeed find any where that it was, except in Solinus.

It is to be obſerved, that the ancients called a certain ointment by the name ſagda as well as this ſtone; this ointment was green, and probably the ſtone had its name from the reſembling it in colour. This was a cuſtom common among the writers of early times; and they have the names of *libanotis*, *myrrhites*, *ſtactachates*, and *aromatites*, from the reſemblance which certain agates and jaſpers had to the drugs, &c. in common uſe among them.

SAGE, ALAIN-RENÈ LE, in *Biography*, was born about the year 1677, at Ruys, in Brittany. He went in early life to Paris, with no other view than to gain a ſubſiſtence as a writer, and firſt made himſelf known by a verſion of the Greek letters of Ariſtænes. Having acquired a good knowledge of the Spaniſh language, and ſtudied its writers with critical care, he made its novels or romances the foundation of ſeveral works of the ſame claſs, and introduced the ſcenery and manners of Spain into others. His moſt popular work, and that which is known and read in every country of Europe, is the “Avantures de Gil Blas de Santillane.” The manners and characters drawn in this work are extremely lively and amuſing; and though its moral is not of the pureſt and moſt elevated kind, it contains much wholeſome inſtruction, and diſplays much knowledge of real life. From this work Le Sage derives his greateſt fame; but his “Diable Boiteaux” is very popular, though it is rather a ſeries of characters and ſtories than a proper novel. Le Sage was author of “Nouvelles Avantures de Don Quichotte,” and a novel entitled “Eſtawanille, ou le Garçon de bonne Humeur.” He was alſo a dramatic writer, and the “Criſpin rival de ſon Maître,” and “Turcaret,” are ſaid to contain ſcenes worthy of Moliere. Le Sage died in 1747: he had always borne an eſtimable character, and was ſo entertaining in converſation, that he was always ſurrounded in coffee-houſes with an audience eager to liſten to his ſallies and anecdotes. His works prove that he thought very freely, nevertheleſs he is ſaid to have been extremely punctual in performing all the duties of religion. He wrote with facility and purity, and his Gil Blas is reckoned one of the beſt inſtructors in the French language.

SAGE, DAVID LE, a French poet, was born at Montpellier, and was author of a collection of ſonnets, elegies, ſatires, and epigrams, called “The Follies of Le Sage.” He died about the year 1650.

SAGE, JOHN, a Scotch divine, was born in Fifeſhire in 1652. He was educated at St. Andrew's, and in 1684 was epiſcopally ordained. After the revolution, in 1688, he was much perſecuted by the Preſbyterian party. He died in 1711. He was author of an able defence of epiſcopacy, entitled “The Principles of the Cyprianic Age,” and ſome other works.

SAGE, in *Botany*. See SALVIA.

SAGE, *Common* or *Officinal*, in the *Materia Medica*, has many varieties, poſſeſſing the ſame properties. Of theſe the principal, and thoſe uſed medicinally, are the common or greater garden ſage, or red ſage, and the ſmall narrow-leaved ſage, or ſage of virtue, which latter many prefer to the former, or broad-leaved ſage. The ſage preſerved for uſe is cut when in flower, and hung up in a ſhady place to dry. Sage has a fragrant ſtrong ſmell, and a bitteriſh aromatic taſte, which qualities depend on an eſſential oil that may be obtained ſeparate in diſtillation with water. Of both kinds the flowers are weaker and more grateful than the leaves; and the cup of the flower ſtronger, and obviouſly more reſinous than any other part. The leaves of ſage give out their virtue both to water and rectified ſpirit, but moſt perfectly to the latter. To the former they impart a browniſh; to the latter a dark green tincture. Sulphate of iron makes a deep black colour with the infuſion. The broad-leaved ſage, called by the gardeners balſamic ſage, is preferred to all the others for making tea.

In ancient times ſage was celebrated as a remedy of general efficacy: accordingly the ſchool of Salernum recommends it as an antidote in all diſeaſes: hence the verſe,

“Cur moriatur homo, cui ſalvia creſcit in horto?
Contra vim mortis non eſt medicamen in hortis.”

“Why ſhould a man die, while he has ſage in his garden?”

Again:

> "Salvia ſalvatrix naturæ conciliatrix."
> "Salvia cum ruta faciunt tibi pocula tuta."

Accordingly they derive the name ſalvia from ſalvando, and extol the praiſes of ſage in tremblings of the limbs, palſy, obſtruction of the menſes, fluor albus, gout and rheumatiſm, contagious diſeaſes, aphthæ, ulcers, and many other diſeaſes. See Murray Ap. Med. vol. ii. p. 167.

At preſent, however, few practitioners conſider ſage as an article of much importance in the Materia Medica. Although frequently employed as a ſudorific, it ſeems to have no advantage over other plants, whoſe aromatic flavour renders the fluid in which they are infuſed more acceptable to the ſtomach; and by ſome it has been ſucceſsfully uſed even for the purpoſe of reſtraining inordinate ſweating. Infuſed in wine or ſpirit, Van Swieten found it remarkably efficacious in ſtopping night ſweats: he alſo found it uſeful in reſtraining the improper continuance of a flow of milk from the breaſts of women, after they had weaned their children. Infuſions of the leaves, ſtrained before too much of the bitter is extracted, prove very grateful to the ſtomach, when nauſea is troubleſome in febrile complaints; and when drunk cold they are ſaid to check hectical perſpirations, as Van Swieten has obſerved, and thoſe which frequently attend convaleſcencies. Sage, as poſſeſſing a ſmall ſhare of aromatic and aſtringent power, may prove a ſerviceable tonic in ſome caſes of debility of the ſtomach and nervous ſyſtem. Some have alleged, in favour of its medicinal efficacy, its power of reſiſting the putrefaction of animal ſubſtances. The infuſion alone, or mixed with honey and vinegar, is a well-known gargle, in caſes of ſore-throat and relaxation of the uvula. The doſe of the pulverized leaves may be from grs. xv to ʒſs; or of an infuſion made with ℥j of the dried leaves and oj of boiling water, f℥ij may be taken every three or four hours. Its decoction is grateful and cooling, with the addition of a little lemon juice.

The Chineſe, who are ſaid to have experienced the good effects of ſage, value it highly, and prefer it to their own tea.

It is ſaid to be both detergent and abſorbent, and as ſuch to have found a place in diet-drinks and medicated ales, intended for ſweeteners and cleanſers of the blood; and mixed with honey, it has been reported to be one of the beſt known cures for the aphthæ and eroſions of the mouths of children.

There uſed to be a ſyrup, conſerve, and ſimple water of ſage, kept in the ſhops; which are all diſuſed, and only the dried herb retained.

Sage, when viewed with a microſcope, often appears covered all over with little ſpiders, which are ſeen moving about. Woodville. Thomſon.

SAGE-*Tree*, or *Jeruſalem Sage*. See PHLOMIS.

The leaves of two of the ſpecies, *viz.* the ſhrubby Jeruſalem ſage with a broader and rounder ſage-leaf, and the ſame with a narrower and longer ſage-leaf, have been much recommended by ſome perſons to be uſed as tea for ſore-throats.

SAGE-*Apples*, a name given by naturaliſts to a ſort of ſoft gall, or protuberance, found frequently on the leaves and ſtalks of ſage in the eaſtern parts of the world, and much reſembling the ſoft gall of the oak-leaf, called the *oak-apple.* Theſe are both owing to the ſame cauſe, the puncture of an inſect of the fly-kind, which depoſits its eggs in the wound, and the worms or maggots hatched from thoſe eggs feed on the inſide of the gall, and occaſion a preternatural derivation of juices to the part, whence it ſwells and aſſumes this form. The leaves of many other plants are alſo liable to the ſame accident, particularly thoſe of ground-ivy, on which there grow eatable galls of this kind. The ſage-apples are ſo frequent in the Eaſt, that they are brought to market at Conſtantinople, and eaten as delicacies. See GALLS.

SAGE *of Jeruſalem*, in *Botany*. See PULMONARIA.

SAGE, *Wild*, or *Wood Sage*. See GERMANDER.

SAGE, *Indian Wild*, a ſpecies of *lantana;* which ſee.

SAGE-*Cheeſe*, in *Rural Economy*, that ſort of cheeſe which is made by means of an infuſion of ſage, ſo as to render it of different colours. See CHEESE and DAIRYING.

Cheeſes of this ſort are made in many different ways, being ſometimes coloured all through, at other times only in layers, and occaſionally in a figured manner throughout the whole, ſo as to have a curious appearance.

SAGEN, in *Geography*, a town of Pruſſia, in the palatinate of Culm; 19 miles E.N.E. of Culm.

SAGENDAGO, or SCCANDAGO, a head-water of Hudſon's river, the mouth of which is about 20 miles W. of Fort Anne.

SAGENE, SAZE, *Saſhe*, or fathom, a Ruſſian meaſure, equivalent to three arſheens, or ſeven Engliſh feet. Five hundred ſagenes make a werſt, or verſt.

SAGENITE, in *Mineralogy*, a name given by Sauſſure to the capillary cryſtals of rutile. See RUTILE.

SAGG HARBOUR, in *Geography*, a poſt-town and port of entry in Suffolk county, New York, at the E. end of Long iſland. It has an excellent harbour, and is well ſituated for trade and navigation. Since the peace of 1783, the population and buſineſs of this place have greatly increaſed. The whole fiſhery of this harbour produced annually, towards the cloſe of the laſt century, 1000 barrels of oil; and its exports in 1794, amounted to the value of 6763 dollars. It is 12 miles N.W. of Southampton, and 107 E. of New York.

SAGGING, in *Sea Language*, a term applied to the hull of a ſhip when the middle part of her keel and bottom are ſo ſtrained by the weight of her cargo as to arch downwards. This term is, therefore, oppoſed to *hogging*, which, when applied in a ſimilar manner, means by a different ſort of ſtrain to curve or arch upwards. In ſeamanſhip, *ſagging to leeward*, ſignifies the movement by which a ſhip makes conſiderable lee-way, or is driven far to leeward of the courſe on which ſhe apparently ſails. It is generally expreſſed of heavy ſailing veſſels, as oppoſed to keeping well to windward, or "holding a good wind."

SAGHALIEN, SEGALIEN, or *Sagalian Oula*, in *Geography*, a name given by the Mantchew Tartars, or Mandſhurs, to the river called by the Ruſſians *Amur* (which ſee), and claſſed among the largeſt rivers; it riſes near the Yablonoi mountains, being firſt known by the names of Kerion, and Argoon or Argun, and purſues an eaſterly courſe of about 1850 Britiſh miles. This is the grand receptacle of the Mandſhur ſtreams, among which the moſt conſiderable is the Songari, which receives the large river Nonni. It runs into the Pacific ocean, oppoſite to the iſland of Saghalien, N. lat. 53°. E. long. 142° 14′. This river, ſays La Pérouſe, receives all the ſtreams which run to the weſtward. Thoſe to the eaſtward are divided into rivulets in all the valleys; and no country is better watered, nor diſplays a more delightful freſhneſs in ſummer. The total of the inhabitants compoſing the little colonies of this country was eſtimated at leſs than 3000, from lat. 42° to the bay of Caſtries, near the mouth of the Segalien. This river, which the Mantchew Tartars deſcend in canoes to the ſea, from whence they ſpread over the coaſt, both to the northward and ſouthward, forms the only avenue to their internal commerce. Accordingly it is very much frequented; nor is there, perhaps,

haps, a ſingle individual on this part of the continent, and on the iſlands of Jeſſo and Oku-Jeſſo (ſee the next article) who is not as well acquainted with the Segalien as the inhabitants of Egypt and Judea were with the Nile. But their commerce is carried on only eight or ten days' ſail up that river; and it appears that its mouth, like that of the Ganges, preſents an uninhabited country: a circumſtance which is to be attributed to the ſterility of a ſoil, almoſt inundated, and covered with ſwamps and marſhes, where the flocks of cattle, which form the riches of the Tartars, cannot find a ſalubrious ſubſiſtence.

SAGHALIEN, *Sagalian*, *Segalien*, or *Tchoka*, an iſland, ſuppoſed, previouſly to the voyage of La Pérouſe, to have been a ſmall iſland at the mouth of the Amur, the ſouthern extremity of which was placed by M. d'Anville about 4° to the north of Jeſſo. La Pérouſe ſays that it forms one of the largeſt iſlands in the world, in a direction from N. to S., its northernmoſt point being in 54°, and its ſouthernmoſt at Cape Crillon, in N. lat. 45° 57′, ſo that its length is about 480 geographical miles, and its medial breadth not leſs than 80 miles; and it is ſeparated from Tartary nearly in 52°, by the pretended ſtrait of Teſſoy, being that of Segalien, or, as now denominated, of La Péronſe. The French editor of his Voyage thinks it probable that the ſtrait of Sagalien has been formerly navigable for ſhips, but it is likely ſoon to be dry, and the iſland to become a peninſula. This change will take place either from the immenſe accumulation produced by the river Sagalien, which, through a courſe of 500 leagues, receives other conſiderable rivers, or by the ſituation of its mouth, almoſt at the narroweſt point of a long channel, which ſituation is extremely favourable to the forming of land. Between the ſand-banks to the northward there is no paſſage for ſhips, although there is probably ſome channel for canoes through the ſea-weeds that obſtruct the ſtrait. This iſland has been deſignated by geographers under various names, ſuch as Sahalien, Ula-hata, Saghalien, Angahata, Amur, Amour, &c. In Cook's Voyages it is called Sagalien; but La Péronſe gives its true appellation, alleging that the natives pronounce the name of their country exactly as the French pronounce "Ségalien." This is alſo called Oku-Jeſſo, *i. e.* Upper or North Jeſſo, and by the Chineſe Ta-ban. The iſland of Chicha, ſometimes confounded with Segalien, is ſeparated from it by a channel, 12 leagues wide, and from Japan by the ſtrait of Sangaar, and is the Jeſſo of the Japaneſe, extending to the ſouthward as far as the ſtrait of Sangaar. This iſland is very woody, and very high in the middle, but flat towards its extremities, where it appears to offer a ſoil favourable to agriculture. Vegetation is there very vigorous, and its foreſts are ſtocked with willows, oaks, and birch. The ſea that waſhes its ſhores is extremely well ſupplied with fiſh, as are alſo its rivers and ſtreams. The inhabitants are of a robuſt, healthy complexion, which they retain to a very advanced age; nor did they manifeſt any appearance of defective conformation, or any trace of contagious eruptions, or any other diſeaſe. They are intelligent, reſpect property, indulge no ſuſpicion and miſtruſt, and are very communicative with ſtrangers. They are of a middling ſtature, ſtrongly built, a little enbonpoint, and their figure and muſcles ſtrongly marked. Their moſt common height is five feet, few or none exceeding five feet four inches. All have large heads and broad faces, rather rounder than thoſe of Europeans. Their countenance is animated and agreeable, though deſtitute of that regularity and grace which we admire. Almoſt all have large cheeks, a ſhort noſe, rounded at the end, and very thick noſtrils, ſharp eyes, middle ſized and well-formed, in ſome inſtances blue, but generally black, thick eye-brows, middle-ſized mouth, ſtrong voice, and thick lips, of a dark hue. The upper lips of ſome were tattooed blue, and theſe parts, as well as the eyes, are capable of expreſſing every kind of ſentiment. They have fine teeth, well ſet, and of the uſual number; a round chin, with very little prominence, and ſmall ears, which they pierce, wearing in them ornaments of glaſs, or rings of ſilver. The women are rather ſmaller than the men, with a rounder and more delicate figure, but with little difference in their features. Their upper lip is completely tattooed in blue, and they wear their hair at its full length. Their clothing does not differ from that of the men; and in both ſexes the colour of the ſkin is tawny.

Theſe iſlanders are very full-bearded and hairy; their beard, being long and briſtly, gives to the old men a grave and venerable appearance, and the young regard them with great attention and reſpect. Their hair is black, ſmooth, and moderately ſtrong: in ſome caſes it is cheſnut. They all wear it round, about ſix inches long behind, and cut in a buſh on the forehead and temples. Their dreſs conſiſts of a caſſock, or kind of bedgown, which croſſes before, where it is faſtened with ſmall buttons, ſtrings, and a girdle above the hips. The caſſock is made of ſkin, or a kind of quilted nankeen, made with the bark of the willow, generally deſcending as far as the calf of the leg, and ſometimes lower, ſo that they generally diſpenſe with drawers. Some wear buſkins of ſeal's ſkin; but moſt of them have both the head and feet naked. Like the inferior caſt of the Chineſe, they all wear a girdle, to which they ſuſpend their knife, a boar's tuſk, and ſeveral little pouches, in which they put their flint, ſteel, pipe, and the box containing their tobacco, the uſe of which is very general.

Their huts afford them ſhelter from the rain and wind, but they are too ſmall for the number of inhabitants. The roof forms two inclined planes, about 10 or 12 feet high at their point of junction, 3 or 4 feet on the ſides, and 14 or 15 broad, by 18 in length. Theſe cabins are conſtructed of rafters, firmly connected together, and flanked with the bark of trees and dried plants, diſpoſed like the ſtraw thatch of the cottages of our peaſants. Within theſe huts is a ſquare heap of earth, elevated about ſix inches above the ground, and ſupported by ſmall thick planks on the ſides. This is their fire-place. At the ſides and at the end of the apartment were treſſels, 12 or 15 inches high, on which are mats on which they ſleep. The utenſils they employ in preparing and eating their food, conſiſt of iron cauldrons, porringers, or veſſels of wood, and of birch-bark of different ſhapes, and various workmanſhip; and they eat with ſmall ſticks, like the Chineſe. The times of repaſt in each family are at noon, and towards the cloſe of the day. In the ſouthern part of the iſland their habitations are conſtructed with more care, are better decorated, and moſt of them floored. They had ſome veſſels of Japan porcelain, which muſt have been procured at conſiderable expence. They employ no cultivation; live on fiſh ſmoked and dried in the air, and a ſmall quantity of game produced by the chace.

Each family has its canoe and implements for fiſhing and hunting. Their arms are the bow, the javelin, and a ſort of ſpontoon or half pike, which they uſe chiefly in hunting the boar. By the ſides of their huts are ſtore-houſes, in which they lay up, during ſummer, their winter proviſions.

Dogs are the only domeſtic animals which they ſeem to poſſeſs. Theſe iſlanders are the only people, among the uncivilized nations viſited by La Péronſe, among whom were obſerved weavers' looms, which were complete, and yet ſmall enough to be portable. They uſe a diſtaff to ſpin the hair of animals, the bark of the willow, and the great nettle, of which they form their ſtuffs. La Pérouſe has given a ſpecimen of their language, ſome words of which are pronounced in the throat; but their pronunciation is ſoft, reſembling that of perſons who ſpeak rather thick. If there be any difference between the ſingular and the plural, it is not expreſſed by their pronunciation. They were obſerved neither to dance nor ſing, but they all produce pleaſing ſounds from the principal ſtalk of a large kind of celery, or ſpecies of euphorbium, open at each extremity. They blow at the ſmall end, and their tones are a tolerable imitation of the ſofter notes of a trumpet. They play no determinate air, but a mere ſucceſſion of high and low notes, the compaſs of which may extend to an octave and a half, or two octaves, that is, to 12 or 16 tones. No other muſical inſtrument was perceived among them.

Theſe people are repreſented as being of a very mild and unſuſpicious character; and they appear to have ſome commercial dealings with the Chineſe through the medium of the Mantchew Tartars, with the Ruſſians by the north part of their iſland, and with the Japaneſe by the ſouth: but the articles of their traffic are of little importance, conſiſting only of a few furs and ſome whale oil. Their whale fiſhery is confined to the ſouthern part of the iſland, and the manner in which they extract the oil is far from being economical. They draw the whale upon the beach, which lies on a declivity, and leaving it to putreſy, the oil thus ſeparated of itſelf is received in a kind of tub placed at the ſteepeſt part of the ground, to which it is directed in its courſe by little furrows.

SAGHALIEN *oula Hotun*, a town of Chineſe Tartary, on the Saghalien. N. lat. 50°. E. long. 127°.

SAGHALIEN *oula Kiamen*, a poſt of Chineſe Tartary; 10 miles N.N.W. of Saghalien oula Hotun.

SAGIDA, or SAGEDA, in *Ancient Geography*, a town of India, ſituated on this ſide of the Ganges, and the capital of the Adiſathri, according to Ptolemy. It is the new *Sagur*, which ſee.

SAGINA, in *Botany*, an old name, from *ſagino*, to cram or fatten, which appears to have belonged to ſome kind of corn, as Millet or *Sorghum*. This name is but ill applied to the preſent diminutive genus, and perhaps deſcended to it by chance; having firſt been joined as an adjective to *Alſine*, Chickweed, (on which ſeveral animals do feed); and then, for want of a better denomination, retained by Linnæus, for what we are about to deſcribe. Small birds indeed may probably eat the herbage or the ſeeds of this genus, as well as of many of its near relations, which they greedily devour.—Linn. Gen. 68. Schreb. 93. Willd. Sp. Pl. v. 1. 718. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 1. 281. Sm. Fl. Brit. 199. Juſſ. 300. Lamarck Illuſtr. t. 90. Gærtn. t. 129.—Claſs and order, *Tetrandria Tetragynia*. Nat. Ord. *Caryophyllei*, Linn. Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of four ovate, concave, ſpreading, permanent leaves. *Cor.* Petals four, ovate, obtuſe, ſhorter than the calyx, ſpreading, ſometimes diminiſhed or defective. *Stam.* Filaments four, capillary; anthers roundiſh. *Piſt.* Germen ſuperior, nearly globular; ſtyles four, ſhort, awl-ſhaped, recurved; ſtigmas oblong, downy on the upper ſide. *Peric.* Capſule ovate, erect, of one cell, ſplitting from the top, uſually into four valves. *Seeds* numerous, minute, attached to a central receptacle.

Obſ. *S. procumbens* and *maritima* ſometimes want the petals, and *S. apetala* has them ſo very minute as generally to have eſcaped obſervation. *S. erecta* has lanceolate pointed calyx-leaves, and a cylindrical capſule, which ſplits, as in *Ceraſtium*, into eight or ten teeth. The habit of this ſpecies alſo differs from the reſt, ſo that perhaps Ehrhart may be juſtified in making it a genus, by the name of MOENCHIA; ſee that article.

Eſſ. Ch. Calyx of four leaves. Petals four. Capſule ſuperior, of one cell.

1. S. *procumbens*. Procumbent Pearl-wort. Linn. Sp. Pl. 185. Willd. n. 2. Fl. Brit. n. 1. Sm. Prodr. Fl. Græc. Sibth. v. 1. 110. Purſh Am. Sept. v. 1. 119. Curt. Lond. faſc. 3. t. 12. Engl. Bot. t. 880. Arduin. Spec. faſc. 2. 23. t. 8. f. 2.—Stems procumbent, ſmooth. Leaves acute, with a minute briſtly point. Petals very ſhort.—Common throughout Europe, in ſandy, barren, moiſt or dry, graſſy or bare, waſte places, court yards, neglected walks of gardens, &c. flowering plentifully from May to the end of autumn. It occurs alſo in North America. The *root* is ſmall and fibrous, but perennial. *Stems* ſeveral, procumbent, branched, taking root at their joints, leafy through the winter. *Leaves* oppoſite, and even connate, linear, convex beneath, ſmooth in every part, tipped with a very ſmall point. *Flower-ſtalks* axillary, ſolitary, longer than the leaves, ſimple, ſmooth, each bearing a little nodding *flower*, whoſe round white *petals* are but half as long as the *calyx*. *Seeds* kidney-ſhaped, of a ruſty hue. The whole plant, though ſlender, is in ſome degree ſucculent.

2. S. *maritima*. Sea Pearl-wort. Don. Herb. Brit. faſc. 7. 155. Engl. Bot. t. 2195.—Stems nearly upright, divaricated, ſmooth. Leaves obtuſe, without briſtles. Petals obſolete.—Diſcovered by Mr. R. Brown at Bally-caſtle in Ireland, near the Giant's cauſeway. Mr. G. Don found the ſame in various places on the Scottiſh coaſt, as well as on the ſummit of Ben Nevis. It is annual, flowering from May to Auguſt. *Root* fibrous. *Stem* much branched, two to four inches high, aſcending or erect, often purpliſh. *Leaves* ſhort, obtuſe, claſping the ſtem with a white membranous edge. They are ſometimes tipped with a point, but no briſtles. *Flowers* erect, on ſolitary, axillary or terminal, ſtalks, much longer than the leaves. *Calyx-leaves* with a white membranous border. *Petals* minute, often wanting. *Stamens*, according to the accurate Mr. Don, ſometimes eight. *Capſule* of four ovate valves, not longer than the calyx.

3. S. *apetala*. Downy Annual Pearl-wort. Linn. Mant. 2. 559. Willd. n. 3. Ait. n. 2. Fl. Brit. n. 2. Curt. Lond. faſc. 5. t. 14. Engl. Bot. t. 881.—Stems nearly upright, hairy. Leaves linear, briſtle-pointed. Petals obſolete. Capſule twice the length of the calyx.—Frequent in dry barren open places, in England, Germany, Italy, &c. flowering in May and June. *Root* annual. *Stems* moſtly erect, or, if they ſpread, never taking root, finely hairy. The *leaves* are ſlender, often hairy, always more or leſs fringed at the baſe, and tipped with a briſtle. *Flowers* on ſlender, often hairy, ſtalks. *Petals* frequently, but not always, wanted; ſometimes notched.

4. S. *erecta*. Upright Pearl-wort. Linn. Sp. Pl. 185. Willd. n. 4. Ait. n. 3. Fl. Brit. n. 3. Curt. Lond. faſc. 2. t. 12. Engl. Bot. t. 609. Fl. Dan. t. 845. (Moenchia quaternella; Ehrh. Beitr. faſc. 2. 177. Alſinella foliis caryophylleis; Raii Syn. 344. t. 15. f. 4.)—Stem erect, nearly ſingle-flowered. Leaves of the calyx acute. Capſule cylindrical, toothed.—Found in barren gravelly paſtures and fields, in England, France, and Germany, making a pretty appearance among graſs, in the ſpring, with its neat glaucous herbage, and brilliant white bloſſoms; after which it turns of a tawny red, and ſoon diſappears. *Root* ſmall, fibrous, annual. Whole herb ſmooth and glaucous. *Stems* two or three inches high, leafy, quadrangular, ſtraight; generally very few, and quite upright; ſometimes more

numerous, and divaricated ; each bearing one or two long-ſtalked upright *flowers*, of a pearly white. *Calyx-leaves* lanceolate, with a ſhining membranous edge. *Petals* about the ſame length, elliptic-lanceolate, undivided. *Stamens* and *ſtyles* ſhort. *Capſule* about the length of the calyx, cylindrical, at firſt of one piece, ſplitting at the top into eight or ten teeth, but the diviſions are continued ſubſequently quite to the bottom, making ſo many ſeparate valves, as in the Linnæan ſpecimen. *Seeds* rough. See obſervations on the generic character.

From this genus, as it ſtands in Willdenow, the firſt and the laſt ſpecies are to be removed. The former, *S. ceraſtoides*, Sm. Tr. of Linn. Soc. v. 2. 343, was long ago referred to *Ceraſtium*, under the name of *tetrandrum*, in Curt. Lond. faſc. 6. t. 31. and Sm. Fl. Brit. 498. The latter, *S. virginica*, Linn. Sp. Pl. 185, belongs to a totally different natural order, the *Gentianæ* of Juſſieu, and is *Centaurella autumnalis*, Purſh v. 1. 100; a generic name of Michaux, not admiſſible into any claſſical work, being a diminutive of *Centaurea*.

SAGINAGA Lake, in *Geography*, a lake of Upper Canada, 14 miles long from E. to W. and leſs than 3 miles wide.

SAGIS, in *Ancient Geography*, a town of Gallia Ciſalpina, E. of Forum Alieni.

SAGITTA, in *Architecture*, the name ſometimes uſed for the key-piece of an arch.

Sagitta, in *Aſtronomy*, the *Arrow* or *Dart*, a conſtellation of the northern hemiſphere, near the Eagle. The ſtars in the conſtellation Sagitta, in Tycho's catalogue, are five, and as many in Ptolemy's and Hevelius's; in Mr. Flamſteed's catalogue they are eighteen. See Constellation.

Sagitta, in *Botany*, ſignifies the top of any ſmall twig, cyon, or graft of a tree.

Sagitta, in *Geometry*, is a term which ſome writers uſe for the abſciſs of a curve.

Sagitta, in *Trigonometry*, &c. is the ſame as the verſed ſine of any arc ; and is ſo called by ſome writers becauſe it is like a dart, or arrow, ſtanding on the chord of the arc.

SAGITTAL, in *Anatomy*, a name given to one of the ſutures of the head. See Cranium.

SAGITTARIA, in *Botany*, ſo called from *Sagitta*, an arrow, in alluſion to the ſhape of the leaves in the original ſpecies, and ſome others; whence alſo the Engliſh name, Arrow-head.—Linn. Gen. 494. Schreb. 643. Willd. Sp. Pl. v. 4. 408. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 5. 282. Sm. Fl. Brit. 1023. Purſh v. 2. 395. Juſſ. 46. Lamarck Illuſtr. t. 776. Gærtn. t. 84.—Claſs and order, *Monoecia Polyandria*. Nat. Ord. *Tripetaloideæ*, Linn. *Junci*, Juſſ.

Gen. Ch. Male, *Cal.* Perianth of three ovate, concave, permanent leaves. *Cor.* Petals three, roundiſh, obtuſe, flat, ſpreading, thrice the ſize of the calyx. *Stam.* Filaments numerous, twenty-four or more, awl-ſhaped, crowded together; anthers erect, as tall as the calyx.

Female flowers fewer, beneath the male, *Cal.* Perianth as in the male. *Cor.* as in the male. *Piſt.* Germens numerous, ſuperior, compreſſed, gibbous externally, crowded into a round head, each ending in a very ſhort ſtyle ; ſtigmas acute, permanent. *Receptacle* globoſe, bearing the capſules in the form of a round ball. *Capſules* numerous, oblong, inflated, compreſſed, gibbous, not burſting, of one cell, encompaſſed with a longitudinal, broad, membranous border, and pointed at each end. *Seeds* ſolitary, oblong.

Eſſ. Ch. Male, Calyx of three leaves. Petals three. Stamens about twenty-four.

Female, Calyx of three leaves. Petals three. Piſtils numerous. Capſules numerous, inflated, ſingle-ſeeded, not burſting.

Obſ. The flowers are dioecious, in ſome American ſpecies.

1. S. *ſagittifolia*. Common Arrow-head. Linn. Sp. Pl. 1410. Willd. n. 1. Ait. n. 1. Fl. Brit. n. 1. Engl. Bot. t. 84. Purſh n. 1. Fl. Dan. t. 172. Loureir. Cochinch. 570. (Sagitta major et minor ; Ger. Em. 416.)—Leaves arrow-ſhaped, with lanceolate, acute, ſtraight, ſpreading lobes. Flower-ſtalk unbranched. Bracteas lanceolate, acute.—Native of rivers, ponds, and ditches, in Europe, Aſia, and America. With us it flowers in July and Auguſt, and makes an elegant appearance. The *root* is tuberous, perennial, as in all the known ſpecies. *Herb* ſmooth, milky. *Leaves* radical, on long ſtalks, raiſed above the water, entire, ribbed, their lobes all ſpreading, but thoſe at the baſe are nearer to each other than to the central one, their length and breadth are very various. Some of the loweſt leaves, immerſed in the water, are undivided, oblong, and obtuſe. *Flower-ſtalk* ſolitary, erect, unbranched, the part above the water bearing ſeveral three-flowered whorls, of white *flowers*, whoſe *petals* are violet-coloured at the baſe.

The ſmall narrow-leaved variety only, according to Mr. Purſh, is found in America. The ſame alſo occurs in England. This ſpecies, like ſome other aquatic plants, grows wild in very different climates, and in widely remote parts of the globe. It is often aſſociated, in Chineſe paintings and carvings, with the ſacred Bean of India, Cyamus; ſee that article ; though we have not met with any particular mention of the Arrow-head, in the records of oriental mythology.

2. S. *latifolia*. Broad-leaved Arrow-head. Willd. n. 2. Purſh n. 2. (S. ſagittifolia ; Michaux Boreali-Amer. v. 2. 189.)—Leaves arrow-ſhaped ; lobes ovate ; the middle one rather acute ; the reſt taper-pointed, ſtraight. Flower-ſtalk moſtly unbranched. Bracteas roundiſh, obtuſe.—Found in ponds and ditches, from Canada to Carolina, flowering from June to Auguſt. The *leaves* are much larger, more ovate, and broader than in any variety of the former, but leſs coriaceous. Purſh deſcribes a variety with large, abruptly-acute *leaves*, a ſomewhat branched *flower-ſtalk*, and dioecious *flowers*.

3. S. *obtuſa*. American blunt-leaved Arrow-head. Willd. n. 3. Purſh n. 3.—Leaves arrow-ſhaped, ovate, obtuſe, rounded, with a ſmall point ; lobes ſlightly ſpreading, oblong, obliquely pointed. Flower-ſtalk unbranched. Flowers dioecious. Bracteas ovate, acute.—In ditches and ſhallow ponds, from Pennſylvania to Virginia, flowering from June to September. *Leaves* the ſize of *Calla paluſtris*. *Purſh*. An incomplete ſpecimen of this was ſent by Kalm to Linnæus, who confounded it with his own *S. obtuſifolia*, a very different and much larger ſpecies. Mr. Purſh alone has remarked that the *flowers* of the preſent are dioecious.

4. S. *obtuſifolia*. Indian blunt-leaved Arrow-head. Linn. Sp. Pl. 1410. Willd. n. 4. Ait. n. 2. (Sagittariæ foliis planta, glomerato fructu monopyreno, coriandri ferè figurâ ; Pluk. Almag. 326. t. 220. f. 7. Culitimarà ; Rheede Hort. Malab. v. 11. 93. t. 45.)—Leaves arrow-ſhaped, dilated, abrupt ; ſide-lobes very diſtant, taper-pointed, longer than the middle lobe. Flower-ſtalk panicled. Capſules globular, reticulated.—Native of the Eaſt Indies. The great ſize of this ſpecies ; its ſhort, blunt, broad *leaves*, with ſingularly ſtraddling lobes ; and the branched, as well as whorled, *flower-ſtalk*, are abundantly ſufficient characters. Its *capſules* are the ſize of coriander-ſeeds, reticulated with prominent veins. The *leaves* are roughiſh, with ſcattered hairs, beneath. *Bracteas* ovate, coriaceous, blunt, or but ſlightly acute.

4. S. *acuminata.* Beak-leaved Arrow-head.—Leaves arrow-ſhaped, ovate, obtuſe with a ſmall point; ſide-lobes ovate, taper-pointed, longer than the middle lobe. Capſules oblong, with dilated membranous wings.—Native of China and Java. We have ſeen only two ſpecimens, one of which, preſerved in the Linnæan herbarium, Linnæus confounded with the laſt. Nothing however can be more diſtinct. The lobes of the *leaf*, which is naked, not hairy, are longer, leſs ſpreading, and end in very long ſlender points; the middle lobe is not abrupt, though bluntiſh; with a very conſpicuous linear beak, near half an inch long. *Flower-ſtalk* unbranched. *Bracteas* ovate, taper-pointed. *Capſules* totally different, extremely numerous, collected into very denſe heads, and each of a linear-oblong ſhape, bordered at each ſide with a pale membranous wing, as broad as itſelf.

5. S. *haſtata.* Halberd-leaved Arrow-head. Purſh n. 4.—“ Leaves arrow-ſhaped, oblong-lanceolate, gradually tapering; ſide-lobes ſpreading, lanceolate, with very long taper points. Flower-ſtalk unbranched. Flowers dioecious. Bracteas and calyx-leaves roundiſh, obtuſe.”—Native of old ditches in Pennſylvania, flowering in July and Auguſt. *Leaves* the ſize of *S. ſagittifolia;* the lobes very ſpreading. *Purſh.*

6. S. *gracilis.* Slender Arrow-head. Purſh n. 5.—“ Leaves arrow-ſhaped, linear, bluntiſh, three-ribbed; ſide-lobes ſpreading, linear, elongated, tapering to a fine point. Stalk ſimple, few-flowered. Flowers dioecious. Bracteas ſhort, nearly orbicular.”—In bogs and ditches; from Pennſylvania to Virginia, particularly on the mountains, flowering in July and Auguſt. *Leaves* very ſlender, about three inches long from the inſertion of their ſtalks. *Purſh.*

7. S. *heterophylla.* Various-leaved Arrow-head. Purſh n. 6.—“ Leaves partly undivided, linear or lanceolate, acute at each end; partly arrow-ſhaped, elliptical, acute; obtuſe at the baſe, with linear, divaricated ſide-lobes. Stalk ſimple, few-flowered. Flowers monoecious; the female ones nearly ſeſſile. Bracteas broadly ovate, pointed.—In ſmall ponds and ditches, in Pennſylvania and New Jerſey, flowering from June to Auguſt. *Leaves* about two inches and a half long. This ſpecies is eaſily diſtinguiſhed by the female *flowers* being almoſt ſeſſile. *Purſh.*

8. S. *natans.* Floating Arrow-head. Michaux Boreali-Amer. v. 2. 190. Willd. n. 5. Purſh n. 12.—“ Leaves floating, undivided, elliptic-lanceolate, obtuſe, three-ribbed; tapering at the baſe; the lowermoſt ſomewhat heart-ſhaped. Stalk ſimple, few-flowered; the lower partial ſtalks elongated.”—In the rivulets of Lower Carolina, flowering in July and Auguſt. The habit of the plant reſembles *Aliſma natans.* *Leaves* about an inch and half long. *Flowers* ſmall. *Michaux, Purſh.*

9. S. *alpina.* Alpine Siberian Arrow-head. Willd. n. 6. (S. natans; Pallas It. v. 3. 757. t. G.* f. 3.)—Leaves floating, undivided, lanceolate; ſomewhat heart-ſhaped at the baſe. Stalk ſimple, few-flowered.—Found by Pallas in the cold alpine lakes of Dauria, &c. about the more ſhallow parts, where the water is not more than ſix feet deep. *Root* fibrous. *Leaves* three-ribbed, three or four inches long, and rather more than half an inch wide; the length of their footſtalks various, according to the depth of the water. *Flower-ſtalks* bearing, above the water, an *umbel*, uſually proliferous, of a few white *flowers*, the upper ones male.

10. S. *lancifolia.* Lance-leaved Arrow-head. Linn. Sp. Pl. 1411. Willd. n. 7. Ait. n. 3? Andr. Repoſ. t. 333. (Ranunculus aquaticus, plantaginis folio, flore albo, calyce purpureo; Plum. Ic. 106. t. 116. f. 1.)—Leaves undivided, elliptical, tapering at each end. Stalk ſomewhat branched. —Native of Jamaica. It flowered in the ſummer of 1803, in Mr. Vere's ſtove at Kenſington Gore. The *leaves* are about a foot long, and from three to five inches broad, with a ſtrong mid-rib, and ſeveral ſlender, parallel, lateral, longitudinal ones ſpringing from it. *Flower-ſtalk* often ſimple, ſometimes branched, bearing many three-flowered whorls of large, white, very tender and delicate *flowers.* *Capſules* innumerable, cloſely crowded, apparently oblong, or lanceolate, but we have merely ſeen them in an early ſtate.

11. S. *falcata.* Falcate Arrow-head. Purſh n. 7. (S. lancifolia; Michaux Boreali-Amer. v. 2. 189.)—“ Leaves broadly lanceolate, tapering at the baſe. Stalk ſomewhat branched. Capſules flat, falcate, beaked.”—Native of ponds in Carolina, flowering in July and Auguſt. This, we preſume, was what Mr. J. Fraſer introduced at Kew in 1787, and which is marked as flowering in the ſtove there, in June and July. Mr. Purſh, who has firſt diſtinguiſhed it ſpecifically from the Linnæan *lancifolia,* copies from Michaux the ſpecific character, where the *ſeeds* (inadvertently put for *capſules*) are ſaid to be flat; that is, probably, compreſſed; and the *flower-ſtalk* ſomewhat branched. The latter character does not diſtinguiſh it from the foregoing; of the other we cannot judge; nor is any thing ſaid in Mr. Purſh's work, to contraſt the two plants in queſtion, with any certainty. If he had gathered them himſelf, we might have depended on his obſervation and accuracy.

12. S. *rigida.* Rigid Arrow-head. Purſh n. 8.—“ Leaves narrowly lanceolate, rigid, very acutely pointed at each end; keeled at the baſe. Stalk branched. Flowers monoecious.”—In ſtill and deep waters of Oſwego river, near the great falls, New York, flowering in July and Auguſt. It grows where the water is more than ſeven feet in depth. The *footſtalks* are ſtrong and ſtiff. *Flowers* very numerous. *Purſh.*

13. S. *ſimplex.* Simple Arrow-head. Purſh n. 9.—“ Leaves linear-lanceolate, acute; tapering at the baſe. Stalk ſimple, many-flowered. Flowers dioecious. Bracteas and calyx-leaves rounded, obtuſe.—Gathered by Mr. Purſh, in ſmall ponds in New Jerſey, flowering in July and Auguſt. *Leaves* about ſix inches long, and half an inch wide. *Flowers* from twelve to eighteen on each ſtalk. *Purſh.*

14. S. *graminea.* Graſſy Arrow-head. Michaux Boreali-Amer. v. 2. 190. Willd. n. 8. Purſh n. 10.—“ Leaves linear, three-ribbed, very long. Stalk ſimple, few-flowered. Flowers monoecious. Bracteas oblong, obtuſe.”—Found in Carolina, by Mr. Lyon, from whoſe herbarium Mr. Purſh deſcribed it; having, it ſeems, ſome doubt reſpecting the plant of Michaux, which was gathered in Canada, and is deſcribed with “ lanceolate-linear *leaves,* and very ſmall heads of *piſtils.*” We have ſeen no ſpecimen of either; nor had Willdenow any further information than the meagre ſtock afforded by Michaux.

15. S. *acutifolia.* Sharp-leaved Arrow-head. Linn. Suppl. 419. Willd. n. 9. Purſh n. 11.—Leaves awl-ſhaped, convex; ſheathing at the baſe. Stalk ſimple. Bracteas ovate, taper-pointed.—Native of Surinam, being one of the celebrated collection ſent in ſpirits to Linnæus, which he deſcribed a ſhort time before his deceaſe. If Mr. Purſh's plant be the ſame, (which we are led to doubt, only by his omiſſion of a reference to any author,) it grows alſo in ſmall rivulets and ditches, near Philadelphia, flowering in July and Auguſt. He deſcribes it as a ſmall ſpecies, whoſe *leaves* have ſometimes a dilated point, repreſenting an ordinary leaf. The Linnæan ſpecimen has awl-ſhaped, erect *leaves,* a foot or more in length, convex at the back, acute at the edges, gradually tapering into a blunt, flattiſh, but not dilated, point. *Flower-ſtalk* rather ſlender, erect, bear-

ing many three-flowered, longiſh-ſtalked whorls, each accompanied by three ovato-lanceolate, ribbed *bracteas*. *Calyx-leaves* ovate-oblong. *Piſtils* very numerous and ſlender.

16. S. *trifolia*. Three-leaved Arrow-head. Linn. Sp. Pl. 1410. Willd. n. 10. (S. chinenſis, foliis ternis longiſſimis; Petiv. Gazoph. 4. t. 19. f. 5.)—Leaves ternate.—Native of China, where it is called, according to Petiver, *Sa heo chaw*. This, if really a *Sagittaria*, is very remarkable for having three equal, lanceolate, ſpreading *leaflets*. The *flowers* ſeem not unlike our *ſagittifolia*.

SAGITTARIA, in *Geography*, an iſland in the South Pacific ocean, diſcovered by Quiros in 1606, and ſuppoſed to be the ſame with *Otaheite;* which ſee.

SAGITTARIO, a mountain of Naples, in Calabria Ultra; 10 miles N.W. of Bova.

SAGITTARIUM ALEXIPHARMACUM, in the *Materia Medica*, the name of a root cultivated with great care in Jamaica, and ſuppoſed a remedy for the wounds of poiſonous arrows. The plant of which it is the root is the *canna Indica radice alba* (Sloane's Hiſt. i. p. 253.); but its virtues have not yet brought it into uſe on this ſide the water.

SAGITTARIUS, in *Aſtronomy*, the *Archer*, one of the ſigns of the zodiac; the ninth in order.

The ſtars in the conſtellation Sagittarius, in Ptolemy's catalogue, are thirty-one; in Tycho's, fourteen; in Hevelius's, twenty-two; in the Britannic catalogue, ſixty-nine. See CONSTELLATION.

SAGITTARIUS, GASPARD, in *Biography*, a learned German, and writer in hiſtory and antiquities, was the ſon of a Lutheran miniſter, and was born at Lunenburg in 1643. He ſtudied at Lubeck and Altenburg, after which he viſited ſeveral of the German univerſities, and travelled to Denmark. He took the degree of doctor of philoſophy at Jena, and in 1674 was made profeſſor of hiſtory in the univerſity of Halle, and was honoured with the office of hiſtorian to the duke of Saxony. He paſſed his life in the duties of his office, and in writing, and died in 1694. The moſt valuable of his works, of which there are 60 or 70 diſtinct publications, on theology, antiquities, criticiſm, hiſtory, biography, and topography, are "The Antiquities of the Kingdom of Thuringia:" and "A Hiſtory of the Marquiſſes and Electors of Brandenburg."

SAGITTATED LEAF, in *Botany*. See LEAF.

SAGMATOK, in *Geography*, a town of Eaſt Greenland. N. lat. 61° 18′. W. long. 45° 30′.

SAGNE, a town of the principality of Neufchatel, ſituated in a valley: this, it is ſaid, was the firſt place in which the manufacture of clocks and watches was introduced into Switzerland, and where 30,000 watches are annually made; ſix miles W.N.W. of Neufchatel.

SAGNIKA, the name of a ſect of Hindoo pyrolaters, whoſe name ſeems derived from Agni, the god of fire; otherwiſe called *Pavaka;* which ſee. Sir William Jones, ſpeaking of ſome reform among the ancient Perſians, in the eighth or ninth century before Chriſt, ſays, that "while they rejected the complex polytheiſm of their predeceſſors, they retained the laws of Mahabad, and a ſuperſtitious veneration for the ſun, the planets, and fire: thus reſembling the Hindoo ſects called Sauras and Sagnikas; the ſecond of which is very numerous at Benares, where many Agnihotras, or conſecrated fires, are continually burning, and where the Sagnikas, when they enter on their ſacerdotal office, kindle with two pieces of the hard wood Sami, a fire, which they keep lighted through their lives, for their nuptial ceremony, for the performance of ſolemn ſacrifices, and the obſequies of departed anceſtors, and for their own funeral pile. This remarkable rite was continued by Zeratuſht, who reformed the old religion by the addition of genii or angels, preſiding over months and days; of new ceremonies in the veneration ſhewn to fire; of a new work which he pretended to have received from heaven; and above all, by eſtabliſhing the actual adoration of one Supreme Being." Diſcourſe on the Perſians. Aſ. Reſ. vol. ii.

The Sauras, mentioned above, are a ſect who adore the ſun, or its regent, Surya. (See SAURA, and SURYA.) Agnihotra, means a ſacred hearth. *Sami* is a name or word to which a great deal of myſticiſm is attached, as noticed under that article. Of the ſacred triad of fires mentioned in the above extract, the nuptial, the ceremonial, and the ſacrificial, due mention is made under the articles PAVAKA and SRADHA of this work.

SAGO, a nutritious ſubſtance brought from the Eaſt Indies, of conſiderable uſe in diet, as a nouriſher and reſtorative.

Sago is a ſort of bread procured from a tree called *landan*, growing in the Moluccas. This tree is a ſpecies of the palm, which grows naturally in Japan, and upon rocky dry mountains in Malabar. And its production is an univerſal article of food among the inhabitants of Amboyna, Ceram, Celebes, and the ſurrounding iſlands E. of Celebes, and alſo in Borneo. The tree propagates itſelf by offsets, or ſhoots, which for a long time appear only like buſhes (about fifteen or ſixteen feet in height), and which all proceed from the roots, or from the bottom of the trunk of a full-grown tree. The ſtem, when it begins to form itſelf out of the buſh, ſhoots up as ſtraight as an arrow, to the height of between 40 and 50 feet, without any lateral branches, like the cocoa-nut trees, forming a handſome crown at the top, which affords an agreeable ſhade. A grove of theſe trees, with their erected ſtems, which, when arrived at maturity, conſiſt of nothing but a ſpongy and mealy ſubſtance, ſurrounded by a hard bark about half an inch thick, and their beautiful leafy crowns, has a very charming appearance, and forms a pleaſant and cool retreat. This white, ſpongy, and mealy ſubſtance is the ſago, which ſerves the natives in lieu of bread. It is ſaid that this tree does not produce any fruit, till it has loſt its ſtrength, and is about to die, when the branches likewiſe appear covered with meal: it then produces at the top a bunch of ſmall fruit, like pigeons' eggs, which are firſt green, and afterwards yellow: the kernel is very aſtringent. It delights in wet moraſſy ſituations, and will not grow except in low grounds. It does not live above 30 years. A tree is choſen, the pith of which has arrived at its full maturity, and this is perceived by its beginning to be of a yellowiſh-white caſt juſt under the foliage. The ſtem is then cut through as cloſe to the ground as poſſible, in order to loſe the leſs of its farinaceous contents. They likewiſe ſometimes try it by chopping a hole in the tree, out of which they take ſome of the pith, in order to examine whether it be ſufficiently ripe; if not, they cloſe the hole again, or elſe they immediately fell the tree, becauſe if it be ſuffered to remain too long, and till it produces fruit, they know that the pith will turn entirely into green filaments, and yield no ſago. When the tree is thus felled, it is cut through in the middle of its length into two or more pieces, and the hard bark of each piece is ſplit aſunder by the inſertion of wedges; the ſago then appears uncovered, juſt like the ſpongy ſubſtance in our elder-trees. They then make a certain inſtrument, reſembling an adze, out of one of the branches of the tree they have felled, with which they looſen the ſago all round from the bark, and reduce it to the appearance of ſawduſt.

The whole tree being thus *poekeled* out, the raw ſago is put by portions into a trough, like a canoe, and water is poured upon it, and well mixed with the ſago, by which means the meal is ſeparated from the filaments.

Theſe filaments, which might be denominated the bran of the ſago, are called *ela*, and are made uſe of to feed hogs, poultry, &c.

The water, thus impregnated with the ſago-meal, having ſtood ſtill for ſome time, the meal ſubſides, by its own weight, to the bottom; the water is then poured off, and it is a ſecond time purified in the ſame manner: after this, the wet meal is laid upon flat wicker-baſkets, to dry, and it is then kneaded together, and formed into little cakes of three inches long, two inches broad, and half an inch thick; finally, it is put into moulds of the ſame ſize and ſhape, and baked over the fire, till it is done enough, and becomes dry and hard.

The mould, or oven, for baking ſago-bread is made of earthen-ware; it is generally nine inches ſquare, and about four deep, divided into two equal parts by a partition parallel to its ſides. Each of thoſe parts is ſubdivided into eight or nine, about an inch broad, ſo that the whole contains two rows of cells, about eight or nine in a row. The oven is turned firſt on one ſide and afterwards on the other, upon the fire, and the cakes are ſufficiently baked in about ten or twelve minutes.

The taſte of the ſago-bread does not much vary from that of the *caſſava*, or *manioc*, of the Weſt Indies; but it appeared to Mr. Wilcocke to be more nutritive; it is not unpleaſant to eat, when it has been firſt a little ſoaked, and afterwards fried in butter; yet it is very difficult of digeſtion.

The fineſt part of the meal is mixed with water, and the paſte is rubbed into little round grains, like ſmall ſhot, and dried. This preparation is not diſagreeable in ſoups, in lieu of Italian macaroni: the ſago that is produced in Borneo is eſteemed the beſt for this purpoſe.

A preparation is likewiſe made of this fineſt part of the meal, which is called *popeda*, and has much reſemblance to the porridge of buckwheat-meal which is made in Holland, but it is much more gelatinous. This is eat off with little ſticks, which being dipped into the popeda, take with them a part of it which adheres to them; they are then dipped in fiſh-broth, and, together with a little fiſh, conſtitute the beſt diſh of the Amboyneſe, and even of thoſe who are deſcendants of Europeans.

Beſides the farinaceous part for food, the ſago-tree yields other things of utility to the Indians.

The ſtem or bark, after the meal has been poekeled out, is made uſe of by the natives, to form little bridges over rivulets, or little creeks.

What are called the branches, which are channelled on the upper ſide, and convex on the under, ſerve alſo ſometimes for the ſame purpoſe; but the chief uſe which the Amboyneſe make of them is for the walls and roofs of their houſes, and for packing-caſes, &c. This article is called *gabbe-gabba*.

The leaves, laced together, form what is called *atap*, and ſerve inſtead of tiles for covering of houſes, and to preſerve things from the rain: but roofs of atap muſt be renewed every ſix or ſeven years.

The ſago-tree has, like all the trees of the palm kind, a cabbage, which is eaten by the natives, though it is not ſo good or wholeſome as that of the *aneebong*, or proper cabbage-palm. When a ſago-tree has been felled, the *ela*, or refuſe, is frequently left in the woods, and the wild hogs fatten upon it; a kind of muſhrooms, which are much eſteemed by the natives, grow upon the heaps of ela. The ſago-tree is even of benefit after it has been deprived of its pith, and left to rot where it was felled; for when rotten, a ſort of very fat white worms, called *ſago-worms*, with brown heads, are found in it, which the Indians roaſt, and think a great delicacy. A computation has been made by Forreſt of how many perſons may live on an acre planted with ſago-trees. A ſago-tree he allows to take up 100 ſquare feet; now the contents of an acre are 43,500 ſquare feet, which allows 435 trees to grow within that ſpace; but ſuppoſing only 300, and that, one with another, they give 300 weight of flour, then three trees, or 900 weight, would maintain one man for a year, and an acre to be cut down would maintain 100 men for the ſame time; now, as ſago-trees are ſeven years a-growing, 100 divided by ſeven, will allow fourteen men to be maintained for a year on the produce of one-ſeventh part of an acre, immediately, or on the produce of a whole acre, progreſſively cut, one-ſeventh part at a time, allowing freſh trees to ſprout up. By Dr. Forſter's computation, ten or twelve perſons live eight months upon the produce of an acre planted with bread-fruit trees, at Otaheite.

The ſmall grains are the ſago of the ſhops. This ſubſtance, commonly recommended as a reſtorative in phthiſes and emaciations, and for reſtraining fluxes, appears to be a light, moderately nutritious demulcent food; in which view it is by ſome directed as a proper aliment for young children, in preference to the more tenacious and leſs digeſtible preparations of wheat-flour.

M. Parmentier has propoſed to make ſago out of potatoes; in conſequence of his idea that all feculæ are abſolutely identical, and that this principle is one and the ſame in nature. For this purpoſe he propoſes to add a ſpoonful of the fecula of potatoes gradually to a chopin, or half a pint, of hot water or milk, to be kept ſtirring over a gentle fire for half an hour. Sugar may be added, with aromatics or ſpices, ſuch as cinnamon, lemon-peel, ſaffron, orange-flower water, roſe-water, &c. The ſago of potatoes may likewiſe be prepared with veal-broth, chicken-broth, or common broth. The preparation may be varied in a thouſand ways, and it forms a very nouriſhing and wholeſome food.

SAGOCHLAMYS, among the Romans, a ſort of garment that partly reſembled the ſagum, and partly the chlamys.

SAGONA, in *Geography*, a town of the iſland of Corſica, now in ruins, but giving name to a biſhop, ſuffragan of Piſa; 5 miles S.W. of Vico.

SAGONEA, in *Botany*, a name of Aublet's, altered from the Caribbean appellation of the plant *Sagoun-ſagou*. Juſſieu has actually retained this curious name. Willdenow, in Sp. Pl. v. 1. 1502, has adopted the genus under that of REICHELIA, to which article we refer the reader; as well as to HYDROLEA, of which laſt genus the plant in queſtion may conſtitute a fifth ſpecies, thus:

5. H. *paluſtris*. (Sagonea paluſtris; Aubl. Guian. v. 1. 285. t. 111. Reichelia paluſtris; Willd. Sp. Pl. v. 1. 1502.)—Leaves lanceolate, ſmooth. Flowers with three ſtyles, axillary, ſomewhat cluſtered; their ſtalks ſcarcely longer than the footſtalks.—Gathered by Aublet on the bank of a rivulet in the deſarts of Guiana, flowering in May. *Root* perennial. *Stems* ſeveral, herbaceous, without ſpines, ſtraight, ſimple, cylindrical, leafy, two or three feet high. *Leaves* alternate, on ſhort footſtalks, taper-pointed, entire, about three inches long, and half an inch wide. *Flowers* blue, two, three, or four together, in very ſhort axillary cluſters. *Styles* three, ſomewhat combined at

the baſe. *Capſule* of three cells, ſeparating irregularly all round; yet we ſcarcely think the plant can be ſeparated from *Hydrolea*.

SAGOR, in *Geography*, an iſland on the coaſt of Bengal, at the mouth of the Hoogly, about 18 miles in circumference. N. lat. 21° 40′. E. long. 88° 9′.

SAGORDEE, a town of Bengal; 35 miles N.N.E. of Dacca.

SAGOUIN, in *Zoology*, the name of a very beautiful ſmall ſpecies of monkey, deſcribed by Cluſius, and ſeeming the ſame with the cagui minor of Marcgrave, and the ſimia jacchus of Linnæus.

Cluſius ſays it is of the ſize of a ſquirrel, and has the look of a lion about the head, and that it is a very tender and delicate little animal, and impatient of the ſlighteſt injury.

SAGRA, in *Geography*, a mountain of Naples, in Calabria Ultra; 12 miles N.N.E. of Oppido.

Sagra, *Alaro*, in *Ancient Geography*, a river of Italy, in the Locride. Strabo.

SAGRAB, in *Geography*. See Zagrab.

SAGRAL, a town of Hindooſtan, in the circar of Sollapour; 32 miles N. of Sollapour.

SAGRALLY, a town of Hindooſtan, in Tellingana; 35 miles N.W. of Indelavoy.

SAGRAMPOUR, a town of Hindooſtan, in Bahar; 21 miles S.W. of Bettiah. N. lat. 26° 27′. E. long. 85°.

SAGREDO, Giovanni, in *Biography*, a noble Venetian, and a writer of hiſtory. He was procurator of St. Mark, and in the year 1675 was elected doge; but finding the election not agreeable to the people, he voluntarily reſigned his office. He was employed as ambaſſador to various courts, and in 1691 was appointed proveditor-general of the Levant ſeas. Sagredo publiſhed at Venice, in 1677, a hiſtory of the Ottoman empire, under the title "Memorie Iſtoriche de' Monarchi Ottomani," beginning with the year 1300, and coming down to 1644. It is written with conciſeneſs, after the manner of Tacitus, is interſperſed with political reflections, and bears the character of impartiality and accuracy. It has been tranſlated into the French language, in 6 vols. 12mo. Sagredo wrote a continuation of his work, relating chiefly to the war in Candia, which has not been publiſhed.

SAGREE, in *Ichthyology*. See Galeus *Spinax*.

SAGRES, in *Geography*, a ſtrong ſea-port town of Portugal, ſituated on a tongue of land at the S.W. extremity of the province of Algarve; 17 miles W.S.W. of Lagos. N. lat. 37°. W. long. 9°.

SAGRUJE, a town of the Greater Bucharia; 15 miles N.E. of Samarcand.

SAGRUS, Sagro, in *Ancient Geography*, a river of Italy, in Samnium, the ſource of which was in the mountains of the Marſi.

SAGU, in *Geography*, a town of Sweden, in the government of Abo; 14 miles S.E. of Abo.

SAGUA Islands, a cluſter of ſmall iſlands in the Spaniſh Main, near the coaſt of America, about 15 miles from the iſthmus of Darien. N. lat. 9° 18′. W. long. 78° 4′.

SAGUANA Bay, a bay in the N.E. corner of the gulf of Mexico, on the coaſt of Florida.

SAGUARIPA, a town of Mexico, in the province of Hiaqui; 54 miles N.N.E. of Riochico.

SAGUENAY, a large river of Canada, which riſes from the lake St. John, and purſuing an eaſterly courſe, above 1000 miles, diſcharges itſelf through the weſt bank of the river St. Lawrence, at the town and harbour of Tadouſſac. At its mouth it is about three quarters of a mile wide, and from 80 to 90 fathoms deep, and navigable for the largeſt veſſels 25 leagues from its mouth. The harbour, called Port Tadouſſac, affords convenient anchorage for 25 ſail of ſhips of war, and is well ſecured from all winds and ſtorms. It is deep, of a circular form, and ſurrounded at a diſtance with very high rocks, except at the entrance. A ſmall ſtream runs into it, ſufficient to water a fleet. The country in the vicinity abounds with marble. N. lat. 48° 4′. W. long. 69° 40′.

Saguenay, *Little*, a river of Labrador, which runs ſouthward, and diſcharges itſelf into the St. Lawrence, eaſt of the Seven Iſles, and weſt of Baſon river. N. lat. 50° 18′. W. long. 65°.

Saguenay, a diſtrict of Canada, bounded on the W. and S.W. by the river of the ſame name, on the N.E. by a nation of Indians called "Kileſhinoas," on the N.W. by that of the Eſquimaux, and on the S.E. by the river St. Lawrence. This territory was found by the firſt French ſettlers ſo unpromiſing, that they had little encouragement to fix a permanent abode in Canada; but upon advancing as high as Quebec, they perceived it to be more favourable. At length it fell into the hands of the Engliſh in 1759. It abounds with various kinds of marble in ſuch plenty, that it is uſed in the conſtruction of the houſes even of private perſons.

SAGUERE, a town of Africa, in Hoval; 40 miles S.W. of Ender.

SAGULUM, among the Romans, a little or ſhort ſagum.

SAGUM, in *Antiquity*, a military garment worn by the Greeks, Romans, and Gauls, in manner of a cloak or caſſock; covering the ſhoulders or back as low as the hips; where it was faſtened to the cuiraſs.

It was uſually made of coarſe wool, and ſquare. They had one for the winter, and another lighter for ſummer.

SAGUNTUS, or Saguntum, *Morviedro*, in *Ancient Geography*, a very ancient town of Hiſpania Citerior, S.E. of Edeta, three miles from the ſea. By thoſe who aſcend to fabulous times, the origin of this town is aſcribed to Hercules. According to Strabo, it was founded by the Zacythians; and it is ſaid that the Rutuli ſent hither a colony from the town of Ardea. At length it became one of the moſt conſiderable towns in Spain. It acquired, ſays Livy, immenſe riches, partly from its commerce both by land and ſea, and partly from its juſt laws and excellent police. Saguntum was under the protection of the Romans, if not numbered amongſt its allies; and by a treaty made between theſe people and the Carthaginians, theſe latter were allowed to carry their arms as far as the Iberus: this city was excepted. In the year of Rome 528, Hannibal commenced his hoſtilities by the ſiege of Saguntum; and when the aſſailed could no longer defend themſelves, the principal inhabitants precipitated themſelves, with their moſt precious effects, into a kind of funeral pile, prepared and ſet on fire for this purpoſe; upon which the ſurviving Saguntines were maſſacred in the moſt cruel manner. The city, thus reduced to the moſt deplorable ſtate of diſtreſs, remained under the dominion of the Carthaginians; till in the year of Rome 538, Scipio, having humbled the power of Carthage in Spain, in proceſs of time recovered Saguntum, and made it, as Pliny ſays, a new city. By the Romans it was treated with every kind of diſtinction; but at ſome period, not aſcertained by hiſtorians, it was reduced to ruins. Its long reſiſtance to the power of Hannibal is recorded on many medals, which bear the inſcription of "invicta." Polybius relates that near this city was a temple of Venus, in which

Cnæus and Publius Scipio encamped in their march againſt the Carthaginians. See MORVIEDRO.

SAGUR, in *Geography*, a circar of Hindooſtan, bounded on the N. by Chanderee, on the E. by Gurrah, on the S. by Gurry Mundella, and on the W. by Bilſah and Kitchwara. The chief towns are Sagur and Kimlaſſa.

SAGUR, a town of Hindooſtan, in the Malwa country, and capital of a circar of the ſame name, near the Bunnaſs river; 112 miles S. of Agra. N. lat. 23° 45′. E. long. 78° 53′.

SAGUS, in *Botany*, a name adopted by Cluſius, Rumphius, Gærtner, and others, from the Malay *Sagu*, which is common to various of the palm tribe.—Gærtn. v. 1. 27. t. 10. f. 1. Willd. Sp. Pl. v. 4. 403. Ait. Hort. Kew. v. 5. 281. Lamarck Dict. v. 6. 392. Illuſtr. t. 771.—Claſs and order, *Monoecia Hexandria*. Nat. Ord. *Palmæ*.

Eſſ. Ch. Male, Calyx of three leaves. Corolla none. Filaments dilated.

Female, Calyx of three leaves; two of which are cloven. Corolla none. Style very ſhort. Stigma ſimple. Nut clothed with ſcales, imbricated backwards. Seed ſolitary.

1. S. *Ruffia*. Willd. n. 1. "Jacq. Fragm. 7. t. 4. f. 2. (Rufia; Bory It. v. 1. 178.")—Branches of the flower-ſtalk annulated.—Native of Madagaſcar. A palm fifty or ſixty feet high, with pinnate *leaves*.

2. S. *Rumphii*. Willd. n. 2. Ait. n. 1. (S. ſeu palma farinaria; Rumph. Amboin. v. 1. 72. t. 17?)—Branches of the flower-ſtalk even and ſmooth.—Native of the Molucca iſles. *Leaves* pinnate.

So much uncertainty attends the hiſtory of theſe plants in all botanical writers, that we muſt content ourſelves with the above mere references to them, till we can procure more clear information. The genus is, no doubt, as Gærtner remarks, very nearly akin to CALAMUS (ſee that article); and appears to be one of thoſe palms which bear a ſort of Sago, though not the beſt. See SAGO.

SAGWARA, in *Geography*, a town of Hindooſtan, in Guzerat; 20 miles S.S.E. of Dungerpour.

SAGWASSER, a river of Bavaria, which runs into the Ilz, near Gravenau.

SAGWIRE, a liquor drawn in the Eaſt India iſlands of Amboyna, Ceram, &c. from a tree of the palm kind; of the ſame nature as the toddy, or palm-wine. When it firſt iſſues from the tree, it is clear, and looks like pure water. Its taſte is ſweet, but refreſhing. By degrees it becomes acidulated, and at laſt quite ſour, which, nevertheleſs, may be prevented by preparing it with a certain bitter wood, or the roots of a tree, called the "ſoſſot" tree, which occaſion a fermentation in the ſagwire, and in about eight hours make it fit for keeping. It is thus preſerved good for a long time. Although it loſes its pleaſant taſte, and becomes thickiſh, appearing like orgeade or almond-milk, it is eſteemed more wholeſome, and has an inebriating quality. It is afterwards kept in bottles.

The tree which yields this liquor has a faded appearance, with many yellow dead leaves, which reſemble thoſe of the ſago-tree. One of theſe leaves, or rather branches, is cut off, and the ſagwire trickles out of it by drops, which are received in a bamboo, hung under it for that purpoſe; and when this is full, the contents are drawn off by a tap at the bottom. This operation is called "tyſſering." Stavorinus's Voyages, vol. ii. p. 350.

SAGY, in *Geography*, a town of France, in the department of the Saône and Loire; 4 miles S.E. of Louhans.

SAHAB, a town of Perſia, in the province of Chuſiſtan, or Kuſiſtan; 60 miles S. of Suſter, or Shuſter.

SAHADEVA, in *Hindoo Romance*, is one of the five ſons of Pandu, the heroes of the fine poem the Mahabarat. This poem has been thought an allegorical conteſt between man's virtues and vices; the former perſonified in the five ſons, or Pancha Pandu. To theſe five Pandus it is uſual to attribute any ſtupendous ſtructure whoſe origin is loſt in antiquity; ſuch as the excavations of Elephanta, Elora, &c. Sahadeva is generally ſaid to be a perſonification of temperance, being a twin brother of Chaſtity. See farther hereon, under our articles KURU, MAHABARAT, PANDU, and RAMAYANA.

SAHAGON, a town of Spain, in the province of Leon; 25 miles S.E. of Leon.

SAHALAX, a town of Sweden, in the province of Tavaſtland; 29 miles N. of Tavaſthus.

SAHALEEL, a town of Tunis, which is ſuppoſed by Dr. Shaw to be the ancient Ruſpina; 6 miles S.E. of Suſa. This village, ſays Dr. Shaw (Trav. p. 108.), is ſituated at a mile's diſtance from the ſea, and therefore bids fairer to be the ancient Ruſpina than Suſa; eſpecially as the ſea before it not only forms itſelf into a bay, but has alſo a communication with a ſmall lake, which was probably the port mentioned by Hirtius. As Sahaleel has no other water than that which is drawn from wells, we may very well account for the neceſſity to which Cæſar was reduced of being ſupplied from another place; and this, from the many difficulties which occurred to him in his way to it, occaſioned by Scipio's army being poſſeſſed of all this country to the northward, ſeems to have been the rivulet that runs through the valley about 1½ league from Suſa. Vid. Hirt. Bell. Afric. § 19 and 22.

SAHAN, a mountainous tract of Arabia, in the province of Yemen, ſituated between Haſchid-u-Bekil and Hedsjas. This tract of country is of conſiderable extent, and produces abundance of excellent fruits, eſpecially grapes. Iron mines have been alſo diſcovered in it, but, for want of wood, have not been wrought; and, on this account, the iron of Yemen is both dear and bad. The inhabitants of this country, eſpecially the highlanders, who have little intercourſe with ſtrangers, are ſaid to ſpeak the beſt Arabic, correſponding more entirely than that ſpoken any where elſe with the language of the Koran, although they are almoſt ſtrangers to that book. The people eſſentially differ in their manners from the Arabs in the cities of Yemen. They ſeldom take more than one wife each. Their women are not permitted to marry till they have completed their fifteenth year; whereas in the dominions of the Imam, girls are married at the age of nine or ten. They live upon meat, honey, milk, and ſome vegetables, of which their country affords plenty. By this ſimple mode of living, they attain to a very advanced age, retaining the perfect uſe of their ſight to the laſt. They are very hoſpitable, and yet rob with no leſs rapacity, when they meet with travellers, not embodied in a caravan, than the Bedouins of the deſart. In this country are many independent lordſhips, the principal of which is *Saade;* which ſee.

SAHAR, a town of Hindooſtan, in Allahabad; 7 miles N.N.E. of Corah.—Alſo, a town of Hindooſtan, in Mewat; 18 miles N.W. of Matura.—Alſo, a mountain of Perſia, in Choraſan; 20 miles S.S.E. of Meſghid.

SAHAR. See SCHAHHR.

SAHARA, or ZAHARA, an extenſive country of Africa, juſtly ſtyled *Zahara* (Arab.), or, the appellation denotes, "*The Deſert*," ſtretching from the ſhores of the Atlantic, with few interruptions, to the confines of Egypt, a ſpace of more than 45 degrees, or about 2500 geographical miles, by a breadth of 12 degrees, or 720 geographical miles. It is not eaſy to aſcertain the boundaries of this extenſive region; and differences of meaſure muſt unavoidably occur according to the various limits that are aſſigned to it. Mr. Rennell's map of North Africa will furniſh the moſt correct idea of its extent, as well as of the other deſarts that are adjacent to it. Accordingly it is bounded by the Atlantic on the weſt, by Biledulgerid, or the country of Dates, on the north, by Tripoli, Soudah Deſart, Fezzan, Hiats, and Agadez, on the eaſt, and by Nigritia or Negroland, Kaſſina or Caſhna, Tocrur, Houſſa, Beeroo, Ludamar, and the Foulahs, on the rivers Niger and Senegal on the ſouth. It may be thus ſaid, like the ocean, to connect the nations which it ſeems to ſeparate; for, in compariſon with the woods and moraſſes of America, it furniſhes the merchant, by the aid of his camels, with an eaſy and convenient road.

A ſandy heath of various levels, in ſome places naked and bare, but much more frequently covered with an odoriferous plant, which the Arabs call the Shé, and which, though far ſuperior in fragrance, has at leaſt a remote reſemblance to the wild thyme of Europe, conſtitutes the general appearance of the Deſart. The exceptions, however, are intereſting and important; for beſides the diverſity that ariſes from the different ſhrubs, which are often ſcantily intermixed with the Shé, and of which the thorny plant that forms the harſh food of the camel appears to be the moſt common, an eſſential variation is furniſhed by the comparative fertility of ſome particular diſtricts, and by the total barrenneſs of others.

In ſome portions of the general wilderneſs, thouſands of ſheep, and goats, and cows, are ſeen to paſture; while in others nothing is preſented to the eye but deſolate hills of ſhifting ſand.

To the laſt of theſe the name of *Deſarts without Water* is emphatically given; a name that conveys to an Arab ear the fearful idea of an intenſe and ſuffocating heat, of the total abſence of vegetable life, and of the hazard of a dreadful death. For though the movement of the ſhifting ſands is not ſo rapid as to endanger the ſafety of the caravan, yet as the ſcorching heat of the ſun-beams, confined and reflected by the hills of ſand, hourly diminiſhes the ſtore of water, and as the breadth of ſeveral of thoſe deſarts is that of a ten days' journey, the hazard of periſhing with thirſt is ſometimes fatally experienced.

All means of aſcertaining the rout by land-marks, the uſual guides in other parts of the wilderneſs, are here deſtroyed by the varying forms and ſhifting poſition of the hills; but from anxious obſervation and continued practice, the camel-drivers acquire a ſufficient knowledge of the bearings of the ſun and ſtars to direct them in their way.

Such are the expedients by which the difficulties of the Deſart are in general overcome.

Major Rennell deſcribes Africa as compoſed of three diſtinct parts or belts, one of which is the "Great Deſart," or "Sahara," and its members, conſiſting of the leſſer deſarts of Bornou, Bilma, Barca, Sort, &c. (See Africa.) This may be conſidered as an "ocean of ſand," ("a wild expanſe of lifeleſs ſand and ſky," Thomſon,) preſenting a ſurface equal in extent to about "one-half of Europe," and having its gulfs and bays; and alſo its iſlands, fertile in groves and paſtures, and in many inſtances containing a great population, ſubject to order and regular government. The great body, or *weſtern* diviſion of this ocean, comprized between Fezzan and the Atlantic, is no leſs than 50 caravan journies acroſs, from north to ſouth, or from 750 to 800 geographical miles, and double of that extent in length; being, without doubt, the largeſt deſart in the world. This weſtern diviſion contains but a ſcanty portion of iſlands, or oaſes, and thoſe alſo of ſmall extent; but the eaſtern diviſion has many, and ſome of them very large. Fezzan, Gadamis, Taboo, Ghanat, Agadez, Augela, Berdoa, are amongſt the principal ones; beſides which there is a vaſt number of ſmall ones. This, indeed, is the part of Africa alluded to by Strabo, when he ſays from Cneius Piſo, that Africa may be compared to a leopard's ſkin. Mr. Rennell conceives the reaſon, why the oaſes are more common here than in the weſt diviſion, to be, that the ſtratum of ſand is ſhallower from its ſurface to that of the earth which it covers; in other words, that the water contained in that earth is nearer to the ſurface; as in moſt of the oaſes, it ſprings up ſpontaneouſly. Water is found at the depth of a few feet in Fezzan. Pliny makes the ſame obſervation concerning this quarter of Africa. But farther to the N.W., on the edge of the Deſart, and the country of Wadreag in particular, Shaw informs us, that wells are dug to an amazing depth, and water mixed with ſand, ſprings up ſuddenly, and ſometimes fatally, to the workmen. The doctor tells us, that the people call this abyſs of ſand and water "the ſea below ground." Can any part of the cauſe be aſſigned to the prevalent eaſterly winds, which, by driving the finer particles of ſand to leeward, may have heaped it up to a higher level in the Sahara, than elſewhere? The ſprings have, without doubt, produced the oaſes themſelves, by enabling uſeful vegetables to flouriſh, and conſequently population to be eſtabliſhed. That the Deſart has a dip towards the eaſt, as well as the ſouth, ſeems to be proved by the courſe of the Niger. See Africa, and Oasis.

The Deſart for the moſt part abounds with ſalt. But we hear of ſalt-mines only in the part contiguous to Nigritia, from which ſalt is drawn for the uſe of thoſe countries, as well as of the Mooriſh ſtates adjoining; no ſalt being found in the Negro countries S. of the Niger. There are ſalt-lakes alſo in the eaſtern part of the Deſart. This quality of the African Deſart was familiarly known to Herodotus. (Melpom. c. 181, &c.) He knew alſo that there was abundance of ſalt in the northern parts; but as the inhabitants in that quarter can furniſh themſelves with ſalt of a better quality from the ſea, the mines are not wrought.

The great ridge of mountains, and its branches, are very productive in gold; but more particularly in the quarters oppoſite to Manding and Bambouk, on the weſt, and Wangara, on the eaſt. See Wangara.

Some of the later geographers have diſtinguiſhed the deſarts into ſeven provinces, under which are comprehended alſo the inferior diviſions; and theſe are Zanaga, Zueniga, Targa or Hayr, Lempta or Iguidi, Berdoa, Bornou, and Gaoga. Theſe provinces are ſuppoſed to have been formerly inhabited by the Getuli and the Garamantes, the former of whom were likewiſe in poſſeſſion of Biledulgerid or Numidia; and at preſent it contains a variety of wandering nations, all proceeding from Arabs, Moors, or Portugueſe; who took refuge there when driven from the empire of Morocco. All theſe bear indiſcriminately the name of Nars, Moors, or Arabs. Their manners are a compound of virtues and vices; they are at once hoſpitable and thieves. Their religion, as well as that of their oppreſſors, the Arabs, is Mahometaniſm, but ſo much corrupted, that little of the fundamental doctrine can be diſcovered among them. In different provinces they ſpeak different dialects of the Arabeſk or African language. The chief commodities of theſe countries are camels, horned cattle, horſes, dates, the fat and feathers of oſtrichs, and gum Senegal.

Before the Arabian conqueſt, about the middle of the 7th cen-

7th century, all the inhabitants of Africa, whether they were deſcended from Numidians, Phœnicians, Carthaginians, Romans, Vandals, or Goths, were comprehended under the general name of *Mauri*, or Moors. All theſe nations were converted to the religion of Mahomet during the Arabian empire under the caliphs.

Among the Numidians were certain tribes, who, preferring a paſtoral life to a fixed place of reſidence, retired ſouthward acroſs the Deſart; "and by one of thoſe tribes, (ſays Leo,) that of Zenhaga, were diſcovered and conquered the Negro nations on the Niger." By the Niger, is here undoubtedly meant, the river of Senegal; which, in the Mandinga language, is called *Baſing*, or the Black river.

To what extent theſe people are now ſpread over the African continent it is difficult to aſcertain. There is reaſon to believe that their dominion ſtretches from weſt to eaſt, in a narrow line or belt, from the mouth of the Senegal (on the northern ſide of that river) to the confines of Abyſſinia.

They are divided into petty tribes; the chief or king of each, exerciſing abſolute juriſdiction over his own horde, without acknowledging any allegiance to a common ſovereign. In their uſual intercourſe with each other, all diſtinctions of rank ſeem however to be forgotten; the king and his camel driver frequently eat out of the ſame bowl, and ſleep in the ſame bed. Such of the tribes as live conſtantly in camps, purſue no ſort of agriculture, but purchaſe of the Negroes corn and other neceſſaries of life, and even their clothing. Their chief medium of barter is rock-ſalt, which they procure from the ſalt-pits of the Great Deſart.

The country affords ſufficient herbage for black cattle, ſheep, and goats; and the Moors poſſeſs an excellent breed of horſes; but their uſual beaſts of burthen are the camel and the bullock. With the ſlaves which they obtain in their predatory excurſions againſt the inland African nations, their traders purchaſe arms and gunpowder of the Europeans; and their chief commerce of this kind, is with the French on the Senegal river. Their only manufacture is a coarſe hair-cloth, of which they make their tents. It is ſpun from the hair of goats, by the women; but of theſe, and other particulars in their domeſtic economy, it is only neceſſary to obſerve that in their apparel, manners, and general habits of life, they reſemble the roving Arabs, of whom many accounts have already been given. Being removed from all intercourſe with civilized nations, and having to boaſt an advantage over the Negroes, by poſſeſſing, though in a very limited degree, the knowledge of letters, they are at once the vaineſt and proudeſt, and perhaps the moſt bigotted, ferocious and intolerant, of all the nations on the earth; combining in their character the blind ſuperſtition of the Negro, with the ſavage cruelty and treachery of the Arab.

The common boundary of the Moors and Negroes in Africa forms a ſtriking feature, as well in the moral, as the political and phyſical geography of the continent. The Moors, deſcendants of Arabs, intermixed with the various coloniſts of Africa, from the earlieſt to the lateſt times, overſpread the habitable parts of the Deſart, and the oaſes within it; and have puſhed their conqueſts and eſtabliſhments ſouthward, preſſing on the Negro aborigines, who have, in ſeveral inſtances, retired to the ſouthward of the great rivers; but in others, preſerve their footing on the ſide towards the Deſart, according to the ſtrength or openneſs of the ſituation. It is probable, however, that the Negroes, who are an agricultural people, never poſſeſſed any conſiderable portion of the Deſart, which is ſo much better ſuited to the paſtoral life of the Moors. It appears as if matters had not undergone much change in this reſpect, ſince the days of Herodotus; who fixes the boundary of the Libyans and Ethiopians, in other words, of the Moors and Negroes, near the borders of the Niger; and he apparently pointed to the quarter in which Kaſſina and Ghana are now ſituated. (See Euterpe, c. 32, and Melpom. c. 197.) The Negroes in the weſtern quarter of the continent are of two diſtinct races, of which the leaſt numerous are named *Foulahs*, or *Foolahs*. Theſe, although they partake much of the Negro form and complexion, have neither their jetty colour, thick lips, nor criſped hair. They have alſo a language diſtinct from the Mandinga, which prevails in this quarter. The original country of the Foulahs is ſaid to be a tract of no great extent along the eaſtern branch of the Senegal river, ſituated between Manding and Kaſſon; Bambouk and Kaarta; and which bears the name of *Fooladoo*, or the country of the Foulahs. But whether this be really the caſe, or whether they might not have come from the country within Serra Leona (called alſo the Foulah country), may be a queſtion; of which, more in the ſequel. The Foulahs occupy, at leaſt as ſovereigns, ſeveral provinces or kingdoms, interſperſed throughout the tract, comprehended between the mountainous border of the country of Serra Leona, on the weſt, and that of Tombuctoo, on the eaſt; as alſo, a large tract on the lower part of the Senegal river; and theſe provinces are inſulated from each other in a very remarkable manner. Their religion is Mahomedaniſm, but with a great mixture of Paganiſm; and with leſs intolerance than is practiſed by the Moors.

The principal of the Foulah ſtates is that within Serra Leona; and of which Teemboo is the capital. The next in order appears to be that bordering on the ſouth of the Senegal river, and on the Jaloffs; this is properly named Siratik. Others of leſs note are Bondou, with Foota-Torra, adjacent to it, lying between the rivers Gambia and Falemé; Foola-doo, and Brooko, along the upper part of the Senegal river; Waſſela, beyond the upper part of the Niger; and Maſſina, lower down on the ſame river, and joining to Tombuctoo on the weſt.

The Moors have not, in any inſtance, eſtabliſhed themſelves on the ſouth of the great rivers. They have advanced fartheſt to the ſouth in the weſtern quarter of Africa; ſo that the common boundary of the two races paſſes, in reſpect of the parallels on the globe, with a conſiderable degree of obliquity, to the north, in its way from the river Senegal towards Nubia, and the Nile. Mr. Park arranges the Mooriſh ſtates which form the frontier towards Nigritia, together with the Negro ſtates oppoſed to them, on the ſouth, in the line of his progreſs, in the following order.

The ſmall Mooriſh ſtate of Gedumah, ſituated on the north bank of the Senegal river, and the laſt that touches on it, (the Moors appearing to be maſters of the northern bank of the Senegal through the greateſt part of its navigable courſe; the Foulahs the ſouthern bank,) is oppoſed to the ſmall Negro kingdom of Kajaaga, on the ſouth. This latter occupies the extremity of the navigable courſe of the Senegal, terminated in this place by the cataract of F'low.

From this point, the Negro and Foulah ſtates occupy both banks of the Senegal river, to its ſource; and beyond that, both banks of the Niger (or Joliba) likewiſe, to the lake Dibbie, ſituated beyond the term of Mr. Park's expedition. This ſpace is divided, unequally, between Kaſſon, a hilly ſtrong country, but of ſmall extent; and which has the Moors of Jaffnoo on the north; Kaarta, a conſiderable ſtate, which has Ludamar for its oppoſite (a country held by Ali, a Mooriſh prince, who is loaded with infamy, on the ſcore of mal-treatment of the only two Europeans, who appear to have entered his country, in later times); Bambara, of ſtill more conſideration, having the Mooriſh kingdom of Beeroo to the north; and Maſſina, a Foulah ſtate, bordering alſo on the ſouth of Beeroo.

Here Mr. Park's perſonal knowledge ends; but he learnt that Tombuctoo and Houſſa, which ſucceed in order to Maſſina, and occupy both ſides of the Niger, are Mooriſh ſtates, though with the greateſt proportion of Negro ſubjects; ſo that the river may be conſidered as the boundary of the two races, in this quarter.

Of the countries between Houſſa and Kaſſina we are ignorant. The Deſart ſeems to approach very near the river (Niger) in that quarter, whence a Mooriſh population may be inferred. South of the river, we hear of Kaſſaba, Gago, and other Negro countries; but without any diſtinct notices of poſition; and beyond theſe, Melli.

Kaſſina and Bornou, two great empires on the north of the river, appear to divide the largeſt portion of the remaining ſpace, to the borders of Nubia; and extend a great way to the north; this region being compoſed of deſart, and habitable country, intermixed; but perhaps containing the largeſt proportion of the latter. In both theſe empires, the ſovereigns are Mahomedans, but the bulk of their ſubjects are ſaid to adhere to their ancient worſhip; that is to ſay, the lower orders are almoſt univerſally Negroes.

From what has appeared, perhaps the boundary of Nigritia, as it reſpects the Negro population, may be expreſſed generally, and with a few exceptions, as follows; beginning from the weſt, the extent upwards of the navigable courſe of the Senegal river, generally—thence, a line drawn to Silla; from Silla to Tombuctoo, Houſſa, and Beriſſa, along the river Niger; and thence through Aſouda, Kanem, and Kuku, to Dongola, on the Nile.

Leo enumerates 12 ſtates, or kingdoms of Nigritia; but amongſt theſe he includes Gualata, a tract only 300 miles S. of the river Nun; as alſo Cano (Ganat), adjacent to Fezzan; and Nubia. Kaſſina, Bornou, and Tombuctoo, are included, of courſe.

The kingdom of the Foulahs before-mentioned, ſituated between the upper part of the Gambia river, and the coaſt of Serra Leona, and along the Rio Grande, has alſo a Mahomedan ſovereign, but the bulk of the people appear to be of the ancient religion. It has been already ſaid, that although they are a black people, they are leſs black than the Negroes, generally, and have neither criſped hair, nor thick lips; as alſo that they have a language diſtinct from the Mandinga. From theſe circumſtances, added to that of ſituation, they appear clearly to be the Leucæthiopes of Ptolemy and Pliny. The former places them in the ſituation occupied by the Foulahs; that is, in the parallel of 9 degrees north; having, to the north, the mountains of Ryſſadius, which ſeparate the courſes of the Stachir and Nia rivers (Gambia and Rio Grande), and which therefore anſwer to the continuation of the great belt of high land, in our geography; in which there is, moreover, another point of agreement, the Caphas of Ptolemy being the Caſſaba of the map.

Ptolemy, by the name, evidently meant to deſcribe a people leſs black than the generality of the Ethiopians; and hence it may be gathered, that this nation had been traded with, and that ſome notices reſpecting it had been communicated to him. It may alſo be remarked that the navigation of Hanno terminated on this coaſt; probably at Sherbro' river, or ſound. And as this was alſo the term of the knowledge of Ptolemy, it may be juſtly ſuſpected that this part of the coaſt was deſcribed from Carthaginian materials.

Thoſe who have peruſed the Journal of Meſſrs. Watt and Winterbottom, through the Foulah country, in 1794, and recollect how flattering a picture they give of the urbanity and hoſpitality of the Foulahs, will be gratified on finding that this nation was known and diſtinguiſhed from the reſt of the Ethiopians, at a remote period of antiquity.

The contraſt between the Mooriſh and Negro characters, is as great as that between the nature of their reſpective countries; or between their form and complexion. The Moors appear to poſſeſs the vices of the Arabs, without their virtues; and to avail themſelves of an intolerant religion, to oppreſs ſtrangers; whilſt the Negroes, and eſpecially the Mandingas, unable to comprehend a doctrine that ſubſtitutes opinion or belief for the ſocial duties, are content to remain in their humble ſtate of ignorance. The hoſpitality ſhewn by theſe good people to Mr. Park, a deſtitute and forlorn ſtranger, raiſes them very high in the ſcale of humanity; and we know of no fitter title to confer on them, than that of the *Hindoos of Africa*; at the ſame time by no means intending to degrade the Mahomedans of India, by a compariſon with the African Moors.

SAHEC, in *Geography*, a town of Perſia, in Farſiſtan; 105 miles E. of Schiras, or Shirauz.

SAHIRA, in the *Materia Medica*, a name given by Avicenna to the *miſy* of Dioſcorides and the Greeks. See MELANTERIA and MISY.

SAHLAHDAN, in *Geography*, a town of the Birman empire, on the Irawaddy, near Peeingghee; 25 miles N. of Mayahoun, or Mayaoum.

SAHLITE, in *Mineralogy*, a mineral which derives its name from Sahlbergh, in Sweden. Its colour is a pale greeniſh-grey; it occurs both cryſtallized and maſſive. The form of the cryſtals is an eight-ſided priſm, with dihedral ſummits reſembling that of pyroxene, with which mineral it is claſſed by Haüy. (See PYROXENE.) It differs from that ſpecies of pyroxene denominated augite in colour; it ſcratches glaſs, and is infuſible. The conſtituent parts, according to Vauquelin, are

Silex - - - - - -	53
Lime - - - - -	20
Magneſia - - - - -	19
Alumine - - - - -	3
Oxyd of iron and manganeſe - -	4

SAHLONE, in *Geography*, a town of Hindooſtan, in Oude; 15 miles N. of Manickpour. N. lat. 26° 2'. E. long. 81° 48'.

SAHOOR, a town of Hindooſtan, in Douab; 15 miles N.W. of Pattiany.

SAHRA, a town of Bohemia; 12 miles N.N.W. of Leitmeritz.—Alſo, a town of Hindooſtan, in Oude; 15 miles S. of Lucknow.

SAHRUK, a town of Bengal; 6 miles W. of Toree.

SAHSJAH, a town of Perſia, in Choraſan; 180 miles N.N.W. of Herat.

SAHTUM, a town of Bengal, 22 miles W. of Toree.

SAI, a town of Africa, in the kingdom of Bambara. This town is completely ſurrounded with two deep trenches, at the diſtance of 200 yards from the walls. The trenches were dug, and the towers conſtructed, ſome years ago, in order to puniſh the people of Sai, for an offence of the dooty, or chief of the town. The town was obliged to ſurrender, the dooty was put to death, and the inhabitants carried away, and ſold as ſlaves; 26 miles S.W. of Sego. N. lat. 14°. W. long. 3° 35'.

SAI, in *Zoology*, a name given to the capuchin monkey. See SIMIA *Capucina*.

SAIANSK, in *Geography*, a town of Ruſſia, in the government of Kolivan, on the Eniſei, near which is a copper furnace; 92 miles S. of Abakanſk. N. lat. 52° 24'. E. long. 91° 14'.

SAIANSKOI MOUNTAINS, mountains of Aſia, which form a boundary between Ruſſia and Chineſe Tartary, conſtituting part of the grand range E. of the Altay mountains.

SAIBGUNGE, a town of Bengal; 32 miles W. of Beyhar. N. lat. 26° 15'. E. long. 88° 41'.

SAIC, one of the many names given by the ancients to quickſilver. See MERCURY.

SAICK, or SAIQUE, a Turkiſh veſſel, very proper for the carriage of merchandizes.

It has ſquare ſails on the middle maſt; without either mizen, top-gallant, or ſhrouds; only a main-maſt, with a main-top-maſt, both very high; with a bolt-ſprit, and a little mizen-maſt.

The height of the main-maſt makes the ſaicks viſible at a great diſtance: their make renders it impoſſible for them to go with a ſide wind; but when they have the wind before them, nothing can outgo them. The generality of them carry no guns.

SAID, in *Geography*, a name given to Upper Egypt, anciently called *Thebais;* which ſee.

SAID. See THEBES.

SAIDE, *Pachalic of,* called alſo the "pachalic of Acre," becauſe the pacha has of late years transferred his reſidence to Acre (which ſee), one of the four pachalics or governments into which ſultan Selim I. diſtributed Syria, the other three being Damaſcus, Aleppo, and Tripoli. The extent of this government has varied at different times. Before ſheick Daher, it included the country of the *Druſes,* (which ſee,) and the whole coaſt, from Nahr-el-Kelb, as far as mount Carmel. Daher, as he gained acceſſion of power, infringed on the territories of the pacha, and reduced him to the city of Saide, from which he was at laſt expelled: but after the ruin of Daher, the government reſumed its ancient limits. Djezzar, who ſucceeded Daher as Turkiſh pacha, has annexed to the pachalic the countries of Safad, Tabaria, and Balbec, formerly tributary to Damaſcus, and the territory of Kaiſaria (the ancient Ceſarea), inhabited by the Arabs of Saker. This pacha transferred his reſidence to Acre, which is now become the capital of the province, inſtead of Saide, the ancient capital. By theſe different augmentations, the pachalic of Acre at preſent includes all the country from the Nahr-el-Kelb, to the ſouth of Kaiſaria, between the Mediterranean to the weſt, and at Anti-Lebanon, and the upper part of the courſe of the Jordan, to the eaſt. It derives the more importance from this extent, as it unites the valuable advantages of ſituation and ſoil. The plains of Acre, Eſdrelon, Sour, Havula, and the Lower Bekaa, are juſtly boaſted for their fertility. Corn, barley, maize, cotton, and ſeſamum, produce, notwithſtanding the imperfection of the culture, twenty and twenty-five for one. The country of Kaiſaria poſſeſſes a foreſt of oaks, the only one in Syria. Safad furniſhes cottons, which, from their whiteneſs, are held in as high eſtimation as thoſe of Cyprus. The neighbouring mountains of Sour produce as good tobacco as that of Latakia, and in a part of them is made a perfume of cloves, which is reſerved excluſively for the uſe of the ſultan and his women.

The country of the Druſes abounds in wines and ſilks: in ſhort, from the ſituation of the coaſt, and the number of its creeks, this pachalic neceſſarily becomes the emporium of Damaſcus and all the interior parts of Syria.

The pacha enjoys all the privileges, and receives all the emoluments of his office: he is deſpotic governor, and farmer general. He remits to the Porte annually the fixed ſum of ſeven hundred and fifty purſes; but he, as well as the pacha of Tripoli, is obliged to furniſh the *djerde*, or proviſions, for the pilgrims of Mecca. His expences for this article are eſtimated likewiſe at ſeven hundred and fifty purſes, in rice, corn, barley, &c.

The time limited for his government is a year, but this is frequently prolonged. His revenues are, the Miri; the farms of the tributaries, as the Druſes, the Motoualis, and ſome Arab tribes; the numerous fees from ſucceſſions and extortions; and the produce of the cuſtoms on the exports, imports, and the conveyance of merchandize; which article alone amounted to one thouſand purſes (above fifty thouſand pounds), when Djezzar farmed all the harbours and creeks in 1784. This pacha likewiſe, as is uſual with the Turkiſh governors in Aſia, cultivates lands on his own account, enters into partnerſhip with merchants and manufacturers, and lends out money for intereſt to huſbandmen and traders. The total from theſe various emoluments is eſtimated at between nine and ten millions of French money, (about four hundred thouſand pounds.) If we compare with this his tribute, which, with the ſupply of the caravan, amounts only to fifteen hundred purſes, or one million eight hundred and ſeventy-five thouſand livres, (ſeventy-eight thouſand one hundred and twenty-five pounds,) we muſt be aſtoniſhed that the Porte allows him ſuch enormous profits; but this alſo is a part of the policy of the divan. The tribute once ſettled never varies; only, if the pacha becomes rich, he is ſqueezed by extraordinary demands. He is often left to accumulate in peace; but when he has once amaſſed great wealth, ſome expedient is always contrived to bring to Conſtantinople his coffers or his head. This pacha maintains a greater number of ſoldiers, and in better condition, than any other pacha, and takes care to enrol none but thoſe of his own country; that is to ſay, Boſhnaks and Arnauts: their number is about nine hundred horſemen. Added to theſe, he has nine thouſand Mograbian infantry. The gates of his frontier towns have regular guards, which is uſual in the reſt of Syria.

By ſea, he has one frigate, two galiots, and a xebec, which he has lately taken from the Malteſe. By theſe precautions, apparently intended to ſecure him from foreign enemies, he has put himſelf on his guard againſt the ſtratagems of the divan. But his power was of no long duration.

SAIDE, a town of the fore-mentioned pachalic, and formerly the reſidence of the pacha. This is the ruinous remains of the ancient Sidon, the name of which ſtill ſubſiſts in a ſmall village, about half a league from Saide. Saide, or Seidé, like all the Turkiſh towns, is ill-built, dirty, and full of ruins. Its length along the ſea-ſhore is about ſix hundred paces, and its breadth one hundred and fifty. On the ſouth ſide, on a ſmall eminence, is a fort built by Degnizla. From hence we have a view of the ſea, the city, and the country: but a few cannon would eaſily deſtroy this whole work, which is only a large tower of a ſingle ſtory, already half in ruins. At the other extremity of the town, that is, to the north-weſt, is the caſtle, which is built in the ſea itſelf, eighty paces from the main land, to which it is joined by arches. To the weſt of this caſtle is a ſhoal fifteen feet high above the ſea, and about two hundred paces long. The ſpace between this ſhoal and the caſtle forms the road, but veſſels are not ſafe there in bad weather. The ſhoal, which extends along the town, has a baſon incloſed by a decayed pier. This was the ancient port, but it is ſo choaked up by ſands, that boats only can enter its mouth, near the caſtle. Fakr-el-din, emir of the Druſes, who built the caſtle, deſtroyed all theſe little ports, from Bairout to Acre,

Acre, by ſinking boats and ſtones to prevent the Turkiſh ſhips from entering them. The baſon of Saide, if it were cleared out, might contain twenty or twenty-five ſmall veſſels. On the ſide of the ſea, the town is abſolutely without any wall; and that which incloſes it on the land ſide is no better than a priſon wall. The caſtle, ſtyled of St. Louis, which from an adjacent height on the S. commands the city, ſtill remains. One gate, fronting to the N.E. is preſerved; but the magnificent palace, built by Fakr-el-din, in the Italian manner, is in ruins. The whole artillery does not exceed ſix cannon, and theſe are without carriages or gunners. The garriſon ſcarcely amounts to one hundred men. The water they have comes from the river Aoula, through open canals, from which it is fetched by the women. Theſe canals ſerve alſo to water the orchards of mulberry and lemon-trees. This is a larger town than Acre; its ſituation is good, and the air ſalubrious. Here are many Chriſtians and ſome Jews; and the number of inhabitants is eſtimated by Volney at about 5000. But by the earthquake in 1785, and the plague which ſucceeded it, the place was almoſt depopulated. A large teſſellated pavement of variegated marble, repreſenting a horſe, feſtoons, and tolerably perfect in ſome parts for ten feet in length, remains, cloſe to the ſea, on the northern extremity of the city, which ſhews that the ſea encroaches on the land. Many ancient granite columns are wrought into the walls, and ſome ſtand as poſts on the bridge leading to the fort. Near the gate of the city is a ſmall ſquare building, which contains the tombs of ſuch of the emirs of the Druſes as died when Saide was in their poſſeſſion. The town is ſurrounded with gardens, in which grow a number of mulberry trees; ſilk being the chief commodity. The rent of houſes, and the mode of living, are cheaper than at Acre, though the town is larger, and the government more mild and regular: ſo that ſtrangers are not liable to inſult. The trade of this place was formerly conſiderable, as it was the chief emporium of Damaſcus and the interior country. The French had a conſul here, and five or ſix commercial houſes. They exported ſilks, and particularly raw and ſpun cottons, the manufacture of which is the principal art of the inhabitants. N. lat. 33° 25′. E. long. 38° 14′. Volney's Travels, and Browne's Travels.

SAIDNAGUR, a town of Hindooſtan, in Lahore; 25 miles E. of Gujurat.

SAIENTZKA, a town of Pruſſia, in Pomerelia; 18 miles N. of Culm.

SAIGA, in *Zoology*, a ſpecies of antelope, the characters of which are, that the horns are pale and almoſt tranſparent, diſtant at the baſes, and bent in form of a lyre, having each three curvatures; the noſe very cartilaginous, much arched, thick, and ſeeming to be truncated at the end. This is the Scythian antelope of ſeveral writers, the Tartarian goat, the beardleſs ibex, the colus or the ſuhac of other writers. It inhabits Poland, Moldavia, the Carpathian mountains, Caucaſus, about the Caſpian and Euxine ſeas, near lake Aral, in the Altaic chain, and generally from the Danube to the Irtiſch, not farther north than about the 55th degree of latitude. The animals of this ſpecies dwell moſtly in open deſarts, abounding with ſalt ſprings, and feed much on ſaline, acrid, and aromatic vegetables. In autumn they collect in large herds, and migrate regularly into the ſouthern deſarts; in ſpring they return northwards, and ſeparate into ſmaller diviſions. They are very ſhy and timid, very ſwift, but ſoon fatigued; their voice reſembles the bleating of ſheep; their ſenſe of ſmelling is quick, ſo that the hunters are obliged to approach them againſt the wind; and when feeding or reſting, the herd is guarded by ſentinels; in ſummer their ſight is weak. When taken young they are eaſily tamed, and are very docile; but the old ones are ſo obſtinate, that when taken, they refuſe nouriſhment. The ſaiga is about the ſize of a fallow deer, being about four feet long, having ſix fore-teeth in each jaw. The fur in ſummer is very ſhort, of a grey colour, mixed with yellow, and darker on the legs below the knees; the ſpace about the cheeks is whitiſh; the forehead and crown of the head hoary, and covered with long hairs; the under ſide of the neck and body white, the knees having buſhes or tufts of hair. The tail four inches long, naked below, covered above with upright hairs, and tufted at the end: in winter, the fur becomes long, rough and hoary; the head is large, the horns eleven inches long, and in a great part of their length ſurrounded with rings, but the extremities ſmooth. The female has no horns, and her fur is ſofter than that of the male: the rutting ſeaſon is in November, when the males will fight boldly in defence of their mates; and before the middle of May, the females produce moſtly one at a birth. Theſe animals are hunted with guns, dogs, and even eagles, for the ſake of their horns and ſkins: the fleſh is ſcarcely eatable, till it becomes cold after being dreſſed, owing to a rank or balſamic taſte, acquired from the nature of their food. Sometimes this animal is found with three horns, and rarely with only one. The horns are very various, but may be always diſtinguiſhed by their pale colour and ſemi-tranſparency; moſt other antelopes having black opaque horns.

SAIGAPULLA, in *Geography*, a town of Hindooſtan, in the circar of Cuddapa; 10 miles S.E. of Gandicotta.

SAIGATKA, a town of Ruſſia, in the government of Perm; 32 miles S.W. of Oſa.

SAIGNE-LEGIER, a town of France, in the department of the Upper Rhine, and chief place of a canton, in the diſtrict of Porentruy. The place contains 2032, and the canton 12,191 inhabitants, on a territory of $272\frac{1}{2}$ kiliometres, in 31 communes.

SAIGNER, in *Fortification*, a French term, ſignifying to empty or drain.

Hence *ſaigner la foſſe* is to empty or drain the water out of the moat, by conveyances under ground; that it may be paſſed over the more eaſily; by laying hurdles of ruſhes on the mud remaining.

SAIGNES, in *Geography*, a town of France, in the department of the Cantal, and chief place of a canton, in the diſtrict of Mauriac; 9 miles N.N.E. of it. The canton has 9235 inhabitants, on a territory of $192\frac{1}{2}$ kiliometres, in 12 communes.

SAIGNON, a town of France, in the department of the Mouths of the Rhone, two miles E.S.E. of Apt; celebrated for its wine.

SAI-ID, a town of Arabia, in the province of Yemen; 8 miles E. of Beit-el-Fakih.

SAIL, an aſſemblage of ſeveral breadths of canvas ſewed together, and extended on or between the maſts, to receive the wind, and force the veſſels through the water. See Sail-*Making*.

Although the form of ſails is extremely different, they are either quadrilateral or triangular. In all quadrangular ſails, the upper edge is called the head; the ſides or ſkirts are called leeches; and the bottom or lower edge is termed the foot. If the head is parallel to the foot, the two lower corners are denominated *clues*, and the upper corners *earings*. Such are the courſes, or lower ſails, except the mizen-courſe, the topſails, which are next in order above the courſes, and the topgallant-ſails, which are expanded above the topſails, and the royals above them. Theſe are all ſpread at the head to their reſpective yards. The ſtudding-ſails are extended by yards and booms. Quadrangular ſails have their heads not parallel to the foot, as the mizen-courſe, driver, and boom-main-ſails. The inner corner at the head is called the nock, the outer the peek: the inner corner at the foot is termed the tack, and the outer the clue. The head is ſpread by a gaff, and the fore-leech is bent to the maſt by hoops, or lacings.

Triangular ſails are the ſtayſails, and the jib; they are extended upon the ſtays between the maſts with hanks. The upper corner is called the head, the foremoſt corner the tack, and the after corner the clue. When ſpread to a yard they are called latteen-ſails, and if to a maſt, ſhoulder-of-mutton ſails; in all which caſes the foremoſt leech or edge is attached to its reſpective ſtay, yard, or maſt, throughout its whole length.

All ſails derive their name from the maſt, yard, boom, or ſtay, upon which they are extended or bent: thus, the principal ſail extended upon the main-maſt, is called the main-ſail, or main-courſe, 1, *Plate* IV. *Rigging fig.* 2. That upon the main-topmaſt is termed the main-topſail, 2: that upon the main-topgallant maſt is named the main-topgallant ſail, 3: and the main-topgallant royal, 4, is ſo called from its being ſpread athwart the head of the main-topgallant maſt. The fore-ſail, or fore-courſe, 5, is ſo denominated from the fore-maſt; the fore-topſail, 6, from the fore-topmaſt; the fore-topgallant ſail, 7, from the fore-topgallant maſt; and the fore-topgallant royal, 8, from its being ſpread on the upper part of the fore-topgallant maſt. The mizen-courſe, 9, from the mizen-maſt; the mizen-topſail, 10, from the mizen-topmaſt; the mizen-topgallant ſail, 11, from the mizen-topgallant maſt; and the mizen-topgallant royal, 12, from its being ſpread on the upper part of the mizen-topgallant maſt. The main-ſtayſail (*fig.* 1.) from the main-ſtayſail-ſtay; the main-topmaſt-ſtayſail, 2, from the main-topmaſt-preventer-ſtay; the middle ſtayſail, 3, from the middle ſtayſail-ſtay; and the main-topgallant-ſtayſail, 4, from the main-topgallant-ſtayſail-ſtay. Theſe ſtayſails are between the main and fore-maſts. The ſtayſails before the fore-maſt are, the fore-ſtayſail, 5, the fore-topmaſt-ſtayſail, 6, and jib, 7. Eaſt India ſhips have two jibs. The ſtayſails between the main and mizen-maſts are, the mizen-ſtayſail, 8, the mizen-topmaſt-ſtayſail, 9, and ſometimes a mizen-topgallant-ſtayſail, 10, above the latter. The ſails under the bowſprit are, the ſprit-ſail, or courſe, 13, and that under the jib-boom the ſprit-topſail, 14. The driver or ſpanker-ſail, 11, (*fig.* 1.) is hoiſted abaſt the mizen-maſt. The ſtudding-ſails, being extended beyond the different yards of the main and fore-maſts, are likewiſe named according to their ſtations. Thoſe to the fore-maſt are, the fore-lower-ſtudding-ſail, 15, (*fig.* 2.) fore-topmaſt-ſtudding-ſail, 16, fore-topgallant-ſtudding-ſail, 17. Thoſe to the main-maſt are, the lower main-ſtudding-ſail, 18, main-topmaſt-ſtudding-ſail, 19, and main-topgallant-ſtudding-ſail, 20. Theſe are the ſails generally uſed to veſſels of three maſts.

The ſails of a veſſel of two maſts are, in a ſnow, ſimilar to thoſe on the fore and main-maſts of a ſhip, except the ſail called a tryſail, uſed inſtead of a mizen-courſe, which it reſembles: it is extended towards the ſtern, and is faſtened by hoops round a ſmall maſt, called a tryſail-maſt, fixed near the aft-ſide of the main-maſt.

The ſails of a brig with two maſts are alſo ſimilar to thoſe on the main and fore-maſts of a ſhip, excepting the main-ſail, which is ſet in the plane of her keel, and is extended by a gaff at the head, and a boom on the foot; the fore-leech being faſtened by hoops round the main-maſt.

Veſſels with one maſt, as ſloops, cutters, ſmacks, hoys, &c. have a main-ſail abaft the maſt, as the brigs; before the maſt they have a ſquare-ſail, or croſs-jack, and above the croſs-jack, a ſmall ſail called a ſave-all-topſail; above that a topſail, which, on account of the hollow at the foot to clear the ſtay, is called a ſwallow-tailed-topſail, and above it is the topgallant-ſail. Some large ſloops have a royal above the topgallant-ſail, and ſtudding-ſails ſet beyond the leeches of the ſquare-ſail. Before the maſt is a fore-ſail, a jib, and a flying-jib. Abaft the after-leech of the main-ſail, in calm weather, is hoiſted a ring-tail-ſail; over the head of the main-ſail a gaff-topſail; and over the ſtern, under the boom, a water-ſail.

There is an additional part added occaſionally to the foot of ſome ſails, called a bonnet: it is laced to the foot of the fore-ſail, tryſail, and ſtorm main-ſails, of ſome veſſels with one maſt, in moderate winds. It is made to correſpond with the foot of the ſail it is intended for, and has latchings in the upper part, by which it faſtens through holes, made for that purpoſe along the foot of the above ſails.

Boats.—Some have a main-ſail, fore-ſail, and jib, as ſloops; others have lug-ſails. Some have ſprit-ſails, others latteen or ſettee-ſails, according to their various uſes, the fancy of their owners, or the country to which they belong.

SAIL is alſo a name applied to any veſſel beheld at a diſtance under ſail.

To ſet ſail, is to unfurl and expand the ſails upon their reſpective yards and ſtays, in order to begin the action of ſailing, which is performed by means of the braces, ſheets, &c. See *Rigging and Bending the Sails,* under the article RIGGING.

To make ſail, is to ſpread an additional quantity of ſail, ſo as to increaſe the ſhip's velocity.

To ſhorten ſail, is to reduce or take in part of the ſails with an intention to diminiſh the ſhip's velocity.

To ſtrike ſail, is to lower it ſuddenly. This is particularly uſed in *ſaluting*, or doing homage to a ſuperior force, or to one whom the law of nations acknowledges as ſuperior in certain ſeas. Thus, all foreign veſſels ſtrike to an Engliſh ſhip of war in the Britiſh ſeas. See SALUTE.

SAIL-*Making.* By act of parliament for encouraging the uſe and conſumption of the manufacture of Britiſh ſail-cloth, every ſhip or veſſel which ſhall be built in Great Britain, and every ſhip or veſſel which ſhall be built in any of his majeſty's plantations in America, ſhall, upon her firſt ſetting out to ſea, have or be furniſhed with one full and complete ſuit of ſails, made up of ſail-cloth manufactured in Great Britain; and in caſe ſuch ſhip ſhall not, on her firſt ſetting out, be ſo fitted out and furniſhed, that then, and for every ſuch neglect and default, the maſter of ſuch ſhip ſhall forfeit the ſum of fifty pounds.

It is likewiſe enacted, that all ſail-cloth made in Great Britain ſhall be manufactured in the manner, and according to the directions hereafter mentioned, *viz.* every piece or bolt of Britiſh ſail-cloth, that ſhall be twenty-four inches in breadth, and thirty-eight yards in length, ſhall weigh according to the number and weights here mentioned: *viz.* N° 1, 44 pounds each bolt; N° 2, 41; N° 3, 38; N° 4, 35; N° 5, 32; N° 6, 29; N° 7, 24; N° 8, 21; N° 9, 18; and N° 10, 15 pounds each bolt.

And in caſe any piece or bolt of either ſuch reſpective numbers or ſorts of Britiſh ſail-cloth ſhall be made of a different breadth or length than before-mentioned, ſuch piece or bolt of Britiſh ſail-cloth ſhall be increaſed or diminiſhed in weight, in proportion to the difference in length or breadth, and ſhall be marked or ſtamped with ſuch number as ſhall be agreeable to the weight; and the warp or chain of every piece or bolt of the firſt ſix numbers of ſuch Britiſh ſail-cloth, ſhall be wholly wrought and made of double yarn, and ſhall contain in every piece or bolt of twenty-four inches in breadth, at leaſt 560 double threads of yarn; and in every piece of ſuch ſail-cloth, that ſhall be thirty inches in breadth, at leaſt 700 double threads of yarn; and in every bolt of ſuch ſail-cloth, that ſhall be of any other breadths than as aforeſaid, a certain number or quantity of double threads of yarn, in proportion to the number of double threads of yarn expreſſed to be contained in the breadth, as aforeſaid; and the warp and ſhoot-yarn, which ſhall be wrought in every piece or bolt of the firſt four numbers of ſuch ſail-cloth, ſhall be made of long flax, without any mixture of ſhort or bar flax; or of long flax, of Italian hemp, or Braak hemp; and all the flax and hemp uſed in making the warp and ſhoot-yarn of ſuch ſail-cloth, of the aforeſaid four firſt numbers, ſhall be of a ſtrong ſtaple, freſh, ſound, and good in its kind, and well dreſſed, and the yarn well cleanſed, even ſpun, and well twiſted; and all the ſhoot-yarn of each piece of ſail-cloth of the four firſt numbers, ſhall be full as ſtrong as the warp-yarn, and cloſe ſtruck with four ſhoots of treble threads at the diſtance of every two feet, or thereabouts; and both the warp and ſhoot-yarn ſhall be as ſtrong as the warp and ſhoot-yarn that are uſually wrought in the ſail-cloth of thoſe four firſt numbers that are made for and uſed in his majeſty's navy; and no flax-yarn uſed in any Britiſh ſail-cloth ſhall be whitened with lime, on forfeiture of ſixpence *per* yard, for every yard that ſhall be ſo whitened, made, ſold, or worked up into new ſails in Great Britain, any way eſſentially different, lighter, or inferior in ſtrength and goodneſs to any of the aforeſaid directions or reſtrictions.

Every ſail-maker, or other perſon who ſhall make or work up ſail-cloth into ſails or tarpawlins, ſhall cauſe this act, or an abſtract thereof, to be put up or affixed, there to continue, in ſome public part of the loft, ſhop, or workhouſe, where his ſaid trade is carried on, or his workmen employed, under the penalty of forty ſhillings.

The ſeveral acts relative to ſail-cloth and ſail-making are the act of the 7 & 8 W. III. c. 10. § 14. 9 & 10 W. III. c. 41. 9 Geo. II. c. 37. 19 Geo. II. c. 27. 33 Geo. III. c. 49.

The Firſt Proceſs in Sail-making

Is the cutting out the various ſails cloth by cloth, the width being governed by the length of the yard, gaff, boom, or ſtay, to which they bend; the depth by the height of the maſt. The width and depth being given, find the number of cloths the width requires, allowing for ſeams, ſlack-cloth for ſewing on the bolt-rope, and tabling on the leeches; and in the depth allow for tabling on the head and foot. For ſails cut ſquare on the head and foot, with gores only on the leeches, as ſome topſails, &c. the cloths on the head, between the leeches, are cut ſquare to the depth; and the gores on the leeches are found by dividing the depth of the ſail by the number of cloths gored, which gives the length of each gore. The gore is ſet down from a ſquare with the oppoſite ſelvage, and, the canvas being cut diagonally, the longeſt gored ſide of one cloth makes the ſhorteſt ſide of the next; conſequently, the firſt gore being known, the reſt are cut by it.

For the length of gores correſponding to the depth on the ſelvage, conſult the following table, which ſhews the length of any gore by its depth, from one inch to ſix feet in depth on the ſelvage of canvas twenty-four inches wide.

Depth down the Selvage.		Length of the Gore.		Depth down the Selvage.		Length of the Gore.		Depth down the Selvage.		Length of the Gore.	
Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
0	1	2	0	2	1	2	10¾	4	1	4	7
0	2	2	0 1/16	2	2	2	11½	4	2	4	7⅞
0	3	2	0⅛	2	3	3	0¼	4	3	4	8¾
0	4	2	0¼	2	4	3	1	4	4	4	9⅝
0	5	2	0⅜	2	5	3	1¾	4	5	4	10½
0	6	2	0½	2	6	3	2½	4	6	4	11⅜
0	7	2	0¾	2	7	3	3¼	4	7	5	0¼
0	8	2	1⅛	2	8	3	4⅛	4	8	5	1⅛
0	9	2	1½	2	9	3	5	4	9	5	2
0	10	2	1⅞	2	10	3	5⅞	4	10	5	2⅞
0	11	2	2¼	2	11	3	6¾	4	11	5	3¾
1	0	2	2¾	3	0	3	7⅝	5	0	5	4⅝
1	1	2	3¼	3	1	3	8½	5	1	5	5½
1	2	2	3¾	3	2	3	9⅜	5	2	5	6⅜
1	3	2	4¼	3	3	3	10¼	5	3	5	7¼
1	4	2	4¾	3	4	3	11¼	5	4	5	8⅛
1	5	2	5¼	3	5	4	0	5	5	5	9
1	6	2	5¾	3	6	4	0⅞	5	6	5	10
1	7	2	6¼	3	7	4	1¾	5	7	5	11
1	8	2	7	3	8	4	2⅝	5	8	6	0
1	9	2	7¾	3	9	4	3½	5	9	6	1
1	10	2	8½	3	10	4	4⅜	5	10	6	2
1	11	2	9¼	3	11	4	5¼	5	11	6	3
2	0	2	10	4	0	4	6⅛	6	0	6	4

In the leeches of topſails cut hollow, the upper gores are longer than the lower ones; and in ſails cut with a roach-leech, the lower gores are longer than the upper ones. This can only be regulated by the judgment of the ſail-maker, and care muſt be taken that the whole of the gores do not exceed the depth of the leech.

Sails gored with a ſweep on the head or foot, or on both, have the depth of their gores marked on the ſelvage from the ſquare of the given depth on each cloth, and are cut out as above; the longeſt ſelvage of one ſerving to meaſure the ſhorteſt ſelvage of the next, beginning with the firſt gored cloth next the middle in ſome ſails, and the firſt cloth next the maſt-leech in others.

For thoſe gores that are irregular, and likewiſe the hollow leeches of topſails, &c. no ſtrict rule can be given; but by drawing on paper the gored ſide of the ſail, and delineating the breadth of every cloth by a convenient ſcale of equal parts of an inch to a foot, or, what would be better, laying-off the full ſize of the ſail on the loft-floor, the length of every gore may be found with preciſion.

In the royal navy, mizen-topſails are cut with three-quarters of a yard hollow in the foot; but, in the merchant ſervice, top and topgallant-ſails are cut with more or leſs hollow in the foot. Flying jibs are cut with a roach-curve on the ſtay, and a three-inch gore in each cloth, ſhortening from the tack to the clue.

Lower ſtudding-ſails are cut with ſquare leeches, and topmaſt and topgallant-maſt-ſtudding-ſails with goring leeches.

For the cutting of all other ſails, we refer to the particular deſcription of each ſail, which follows.

Tablings of all ſails are to be of a proportionable breadth to the ſize of the ſail. Thoſe for the heads of main and fore-courſes to be from 4 to 6 inches wide; for ſprit-courſes and mizens, drivers, and other boom-ſails, 3 to 4 inches wide;

for top-ſails, 3 to $4\frac{1}{2}$ inches; topgallant and ſprit-topſails, 3 inches; royal ſails, $2\frac{1}{2}$ inches; jib and other ſtay-ſails, 3 to $4\frac{1}{2}$ inches, on the ſtay or hoiſt; and for ſtudding-ſails, 3 to 4 inches on the head.

Tablings on the foot and leeches of main and fore-courſes to be from 3 to 5 inches broad; ſprit-courſe and topſails, 3 inches; topgallant and ſprit-topſails, $2\frac{1}{2}$ inches; royals, 2 inches; fore-leeches of mizen, driver, and other boom-ſails, $3\frac{1}{2}$ to 4 inches; after-leech, 3 inches; and on the foot, 2 to 3 inches.

Tablings on the after-leech of jibs and other ſtayſails to be from 2 to 3 inches broad; and on the foot, 2 to $2\frac{1}{2}$ inches; on ſtudding-ſail-leeches, $1\frac{1}{2}$ to $2\frac{1}{2}$ inches; and on the foot, from 1 to 2 inches.

The length of reef and middle bands is governed by the width of the ſail at their reſpective places: the leech-linings, buntline-cloths, top-linings, maſt-cloths, and corner-pieces, are cut agreeable to the depth of the ſail. Each cloth, and every article when cut, ſhould be properly marked with charcoal, to prevent confuſion or miſtake.

Reef-bands.—Main and fore-courſes have two reef-bands; the upper one is one-ſixth of the depth of the ſail from the head, and the lower band ſhould be the ſame diſtance from the upper one, the ends going four inches under the leech-linings. The breadth one-third the breadth of the canvas.

Main and fore-topſails have four reef-bands, or three at leaſt, from leech to leech, over the leech-linings; the upper one to be one-eighth of the depth of the ſail from the head. They are the ſame diſtance aſunder in the royal navy, but more in the merchant ſervice. Mizen-topſails of 50-gun ſhips, and upwards, have three reefs; the upper one is one-eighth of the depth of the ſail from the head, and the reefs are the ſame diſtance aſunder. Mizen-topſails of leſſer ſhips have two reefs one-ſeventh the depth of the ſail from the head, and the ſame diſtance aſunder. The reef-bands have each half a breadth of canvas. Main and main-top-ſtudding-ſails have each one reef, at one-eighth of the depth of the ſail from the head.

The *middle band* is made of one breadth of canvas of the ſame number as the top-linings, and is put on half way between the lower reef and the foot.

Linings.—Main and fore-courſes are lined on the leeches, from clue to earing, with one cloth. Main, fore, and mizen-topſails, have leech-linings made of one breadth of cloth, ſo cut as to be half a cloth broad at the head, and a cloth and a half broad at the foot; the cloth to be cut from half its breadth at one end, ſo as to taper to a point at the other.

Mizens are lined with one breadth of cloth from the clue five yards up the leech; they have alſo a nock-piece, and a peek-piece, one cut out of the other, ſo that each contains one yard.

The maſt-lining is of two cloths, and extends from the foot of the ſail to the lower reef, to receive the beat or chafe of the maſt.

The top-lining of top-ſails is of canvas N° 6 or 7. The other linings of this and all other ſails ſhould be of the ſame quality as the ſails to which they belong.

Lower ſtayſails, fore-top and main-top-ſtayſails, and flying jibs, have clue-pieces two yards long.

Square tack-ſtayſails have half a breadth of cloth at the fore-part; with a clue-piece containing two yards, and a peek-piece containing one yard.

Buntline-Cloths.—Main and fore-courſes have four buntline-cloths, and all topſails two buntline-cloths, from the foot to the middle band, of one breadth of canvas.

Sails to have bonnets are cut out the whole depth of the ſail, bonnet included, allowing enough for the tablings on the foot of the ſail, and head and foot of the bonnet. The bonnet is cut off after the ſail is ſewed together. If a drabbler is required, it is allowed for in the cutting out the ſame, as in the bonnet.

The Second Proceſs in Sail-making

Is the ſewing of the various parts of a ſail together; and, firſt, the

Seams.—Sails have a double flat ſeam, and ſhould be ſewed with the beſt Engliſh-made twine of three threads, ſpun 360 fathoms to the pound, and to have from 108 to 116 ſtitches in every yard in length.

The twine for ſewing main, fore, mizen, and ſprit-courſes, topſails, and ſtayſails, in the royal navy, is waxed by hand with genuine bees-wax, mixed with one-ſixth part of clear turpentine; and for ſmall ſails, in a mixture made of bees-wax 4 lb., hog's-lard 5 lb., and clear turpentine 1 lb. In the merchant ſervice, the twine is dipped in tar, ſoftened with a proper proportion of oil.

The breadth of the ſeams of courſes, topſails, and other ſails in the royal navy, to be as follow; *viz.* courſes and topſails, for 50-gun ſhips and upwards, $1\frac{1}{2}$ inch; thoſe under 50 guns, $1\frac{1}{4}$ inch, at head and foot; all other ſails, one inch at head and foot.

In the merchant ſervice, ſeams are ſometimes made broader at the foot than at the head, being ſtronger.

Broad ſeams are not allowed to be made on courſes in the royal navy, but goring leeches are adopted in lieu of them.

Driver boom-main-ſails, and the ſails of ſloops, generally have the ſeams broader at the foot than at the head.

It is the erroneus practice of ſome ſail-makers not to ſew the ſeams any farther than where the edge is creaſed down for the tabling; but all ſails ſhould be ſewed quite home to the end, and, when finiſhed, ſhould be well rubbed down with a rubber.

The ſeams of courſes and topſails are ſtuck or ſtitched up, in the middle of the ſeams along the whole length, with double ſeaming-twine; and have from 68 to 72 ſtitches in a yard. In the merchant ſervice, it is common to ſtick the ſeams with two rows of ſtitches when the ſail is half worn, as they will then laſt till the ſail is worn out.

Tablings of all ſails to be ſewed at the edge, with 68 to 72 ſtitches in a yard.

Reef-bands are each in breadth one-third of the breadth of the canvas for main and fore-courſes. The reef-bands of main and fore-topſails are each of half a breadth of canvas, put on double; the firſt ſide is ſtuck twice, and the laſt turned over, ſo that the reef-holes may be worked upon the double part of the band; the ends go four inches under the leech-linings, which are ſeamed over the reef-bands. The reef-bands of topſails go over the linings from leech to leech, and are ſtuck with 68 to 72 ſtitches in a yard. Reef-bands ſhould not be put on until the ſail is ſewed up, a contrary practice being very erroneous.

Middle bands have one breadth of canvas, and are firſt folded and rubbed down, to make a creaſe at one-third of the breadth; then tabled on the ſelvage, and ſtuck along the creaſe; then turned down, and tabled and ſtuck through both the double and ſingle parts, with 68 to 72 ſtitches in a yard. They are likewiſe tabled or ſewed over the ends of the buntline-cloths and top-linings.

It is the opinion of many, that middle bands ſhould not be put on until the ſail is half worn.

Linings.—All linings are ſeamed on, and are ſtuck, or ſtitched, in the middle, with 68 to 72 ſtitches in a yard.

Top-linings and maſt-cloths are put on the aftſide, and all other linings on the foreſide, of ſails.

Holes.—Reef and head-holes are made by an inſtrument, called a pegging-awl, or a ſtabber, and are fenced round by ſtitching the edge to a ſmall grommet, made with log or other line: when finiſhed, they ſhould be well ſtretched or rounded up by a pricker, or a marline-ſpike.

Sails have two holes in each cloth, at the heads and reefs of courſes, topſails, and other ſquare ſails; one hole in every yard in the ſtay of flying jibs; and one in every three-quarters of a yard in the ſtays of ſquare, tack, and other ſtayſails.

Reef and head-holes of large ſails have grommets of 12-thread line, worked round with 18 to 21 ſtitches; ſmaller ſails have grommets of 9-thread line, with 16 to 18 ſtitches, or as many as ſhall cover the line; and ſmaller holes in proportion.

The holes for marling the clues of ſails, and the top-brims of topſails, have grommets of log-line, and ſhould have from 9 to 11 ſtitches: 12 holes are worked in each cloth.

Main-courſes have marline-holes from the clue to the lower bowline-cringle up the leech; and from the clue to the firſt buntline-cringle on the foot. Fore-courſes have marline-holes one-eighth of the depth of the ſail up the leech, and from the clue to the firſt buntline-cringle at the foot. Main and fore-topſails have marline-holes three feet each way from the clue, and at the top-brims. Spritſails, mizen-topſails, lower ſtayſails, main and fore-top-ſtayſails, and jibs, have marline-holes two feet each way from the clues. All other ſails are ſewed home to the clues.

Marline-holes of courſes are at three-fourths of the depth of the tablings at the clues from the rope, and thoſe of topſails are at half the depth of the tablings at the clues and top-brim from the rope.

Bonnets have a head-tabling, to which a line that forms the latchings is ſewed in bights, which are about ſix inches aſunder; the leeches and foot are tabled, &c. ſimilar to the foot of the ſail the bonnet is attached to.

The Third Proceſs in Sail-making

Is ſewing on the bolt-rope, &c.

Bolt-ropes, before ſewed, ſhould be ſtoved in a ſtove by the heat of a flue, and not in a baker's oven, or in a ſtove-tub; and tarred with the beſt Stockholm tar; to be ſewed on with good Engliſh-made twine of three threads, ſpun 200 fathoms to the pound. The twine in the royal navy is dipped in a compoſition made with bees-wax, four pounds; hog's-lard, five pounds; and clear turpentine, one pound; and in the merchant ſervice, in tar ſoftened with oil.

Bolt-ropes of courſes, top-ſails, and all other ſails, ſhould be neatly ſewed on through every cunt-line of the rope; and to avoid ſtretching, the rope muſt be kept tightly twiſted while ſewing on, and care taken that neither too much nor too little ſlack is taken in: they are to be croſs-ſtitched at the leeches every twelve inches in length, at every ſeam, and in the middle of every cloth at the foot, with three croſs-ſtitches. Four croſs-ſtitches ſhould be taken at all beginnings and faſtenings-off; the firſt ſtitch given twice, and the laſt three times. Small ſails have two croſs-ſtitches at every ſeam, and three at every faſtening-off.

The number of threads required in the royal navy for ſewing on the following ſized bolt-ropes; *viz.* 6-inch, 10 ordinary and 2 extra; 5¾ and 5½, 10 ordinary; 5¼ and 5-inch, 8 ordinary and 2 extra; 4¾ and 4½, 8 ordinary; 4¼ and 4-inch, 6 ordinary and 2 extra; 3¾ and 3½, 6 ordinary; 3¼ and 3-inch, 4 ordinary and 2 extra; 2¾ and 2½, 4 ordinary; 2¼ and 2-inch, 2 ordinary and 2 extra; 1¾, 1½, 1¼, and 1-inch, 2 threads ordinary.

Slack allowed in ſewing on Bolt-ropes.—On main and fore-courſes two inches ſlack-cloth ſhould be allowed in the head and foot, and one inch and a half on the leeches, in every yard in length.

Mizen-courſes have two inches ſlack in every yard in the fore-leech, but none in the after-leech or foot.

Spritſail-courſes have no ſlack-cloth.

Topſails are allowed three inches ſlack in every cloth in the foot, and one inch and a half in every yard in the leech, and two inches in every cloth left open in the top-brim.

Topgallant-ſails have two inches ſlack in every cloth in the foot, and one inch in every yard in the leech.

Jibs have four inches ſlack in every yard on the ſtay, one inch in every cloth in the foot, and none on the leech.

Stayſails have three inches ſlack in every yard on the ſtay, one inch in every cloth in the foot, but none on the leech.

Studding-ſails have one inch and a half ſlack in every yard in goring-leeches, but no ſlack on ſquare-leeches, and one inch in every cloth on the head and foot.

The clues and top-brims ſhould be wormed while the bolt-rope is ſewing on the ſail, and before both parts are confined.

Clues.—Fourteen turns or twiſts of the ſtrands in the length of the clue-rope are left at the lower corners of all ſails for the clues, which are wormed with ſizeable ſpun-yarn, parcelled, ſerved, marled, and ſeized. The clue-ropes of main-courſes extend, and are marled, from the clue to the lower bowline-cringle up the leech, and to the firſt buntline-cringle on the foot; on fore-courſes one-eighth of the depth of the ſail up the leech, and to the firſt buntline-cringle on the foot; the clue-ropes of main and fore-topſails extend three feet each way on the leech and foot: and ſpritſails, mizen-topſails, lower ſtayſails, main and fore-top-ſtayſails, and jibs, have the clue-rope two feet each way from the clue.

Cringles.—Cringles ſhould be made of the ſtrands of new bolt-rope, half an inch ſmaller than the bolt-rope on the ſail.

Earing-cringles are made of an additional length (of fourteen twiſts or turns) of the leech-rope left at the head of the ſail, which, being turned back, forms the cringle, by ſplicing its end into the leech-rope and croſs-ſtitching the whole of the ſplice; the firſt ſtitch to be given twice, and the laſt ſtitch three times.

Splices are made by opening the ends of two ropes, and placing the ſtrands between each other: openings being made in the untwiſted part of the rope neareſt the end with a marline-ſpike, the ſtrands are thruſt through them; and the large ends are regularly tapered from the middle by cutting away ſome of the yarns every time they are thruſt through. The ſmall ſtrands, as thoſe of the foot or leech-rope, are ſtuck twice through the openings made in the large rope; and the large ſtrands are ſtuck three times through the leech or foot-rope. The middle ſtrand of the taper, being the longeſt, is ſtuck in laſt, and once more than the others. All ſplices are croſs-ſtitched as far as they run.

Reef and reef-tackle pendant-cringles are ſtuck through holes made in the tablings, and the lower ends are put through the bolt-rope once more than the upper ends, being more liable to be drawn out.

The openings of buntline and bowline-cringles are at the diſtance of four turns or twiſts of the ſtrands in the bolt-rope aſunder, and the ends are firſt ſtuck in an opening, made with a marline-ſpike, under two ſtrands of the bolt-rope; then paſſing over the next, they are ſtuck under one ſtrand; and again paſſing over another, they are finally ſtuck under the next. The ends of the buntline-cringles, next the ſervice of the clues of courſes, ſhould be left long enough to be worked under the ſervice, to meet or reach the ends of the clue-rope. See *Plate* I. *fig.* 26.

Rules for aſcertaining the Quantity of Canvas contained in the different Sails.

Canvas 24 inches wide is uſed for the royal navy, and is certainly the ſtrongeſt. Various widths of canvas are uſed in the merchant ſervice, from 24 to 36 inches. The following rules are adapted equally to all widths, although the examples are calculated for canvas 24 inches wide.

Rule 1.—*To find the quantity of canvas in main and fore-courſes; topſails; topgallant-ſails; royals; topmaſt and topgallant-ſtudding-ſails.*

Add the number of cloths in the head and foot, and halve the product, to make it ſquare; then multiply by the depth of the middle cloth; and add the quantity in the linings, bands and pieces, and the quantity in the foot-gores, when the foot is cut hollow.

To find the quantity in the foot-gores.

Add together the number of inches gored in each cloth on one ſide of the ſail, and multiply the product by half the number of gored cloths, and divide by 36, to bring that into yards.

Rule 2.—*To find the quantity of canvas in a mizen-courſe.*

Add the depth of the fore and after-leech together, and halve the product for a medium depth; then multiply the medium depth by the number of cloths; and add to that the additional canvas contained in the linings, bands, pieces, and foot-gores.

To find the quantity in the foot-gores.

The number of cloths in the ſail muſt be multiplied by the additional length, that the ſquare cloth in the middle is more than thoſe at the tack and clue; then, the gores to the tack and clue being ſubtracted, the remainder is the quantity in inches, which divided by 36 gives the number of yards.

Rule 3.—*To find the quantity of canvas contained in ſpritſail-courſes; lower ſtudding-ſails; ſloop's ſquare ſails, or croſs-jack; and ſloop's water-ſails.*

Multiply the number of cloths by the ſhorteſt depth, add the quantity in the bands and pieces, and the quantity in the foot-gores, when the foot is cut hollow; by Rule 1.

Rule 4.—*To find the quantity of canvas contained in driver-boom-ſails; brig's main-ſails; cutter's main-ſails; cutter's try-ſails; likewiſe ſloop's and ſmack's.*

Add together the number of cloths in the head and foot, and halve the product to make it ſquare; add together the depth of the fore and after-leeches, and halve that ſum for a medium depth; then multiply the number of ſquare cloths by the medium depth, and add the quantity in the pieces and foot-gores.

To find the quantity in the foot-gores.

Add together the gores from the tack to the firſt ſquare cloth in the foot, and multiply half the ſum by the number of cloths in the foot; then (if there are gores to the clue) add together the gores from the clue to the firſt ſquare cloth in the foot, and multiply half the ſum by the number of cloths gored to the clue; which ſubtracted from the product of the gores to the tack, gives the anſwer.

Rule 5.—*To find the quantity of canvas contained in jibs; main and fore-ſtayſails; fore-topmaſt-ſtayſails; ſloop's, ſmack's, and boat's fore-ſails and latteen-ſails.*

Multiply half the number of cloths by the depth of the leech, and add the quantity in the bands, pieces, and foot-gores, if any.

To find the quantity in the foot-gores.

Multiply half the number of cloths in the foot by the regular gore *per* cloth, and that product multiplied by the whole number of cloths in the foot gives the anſwer in inches, which divide by 36, to bring into yards.

Rule 6.—*To find the quantity of canvas contained in mizen-ſtayſails; main-topmaſt-ſtayſails; mizen-topmaſt-ſtayſails; middle ſtayſails; main-topgallant-ſtayſails; gaff-topſails; ringtail-ſails; ſettee-ſails; and boat's ſpritſails.*

Add the depth of the tack, bunt, or fore-leech, to the depth of the after-leech, and halve them for a medium depth: add the number of cloths in the head and foot together, (when not equal,) and halve them, to reduce them ſquare; then multiply the number of ſquared cloths by the medium depth, and add to that the additional canvas contained in the linings, bands, and pieces.

Deſcription of each Sail.

MAIN-COURSE, 1. *Plate* IV. *Rigging*, *fig.* 2.

This ſail is quadrilateral, ſquare on the head. It bends at the head to the main-yard, and extends within eighteen inches of the cleats on the yard-arms, and drops to clear the foot from the boat on the booms.

Guns - - -	Sort of Canvas.	110	98	80	74	50	44	38	36	24	18	16	Main-ſail.	
													Brig.	Cutter.
Tons - - -		2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200	180
Number of cloths in the - - head	N°	48	46	48	47	40	40	39	38	31	28	27	12½	24
Number of cloths in the - - foot	1	50	48	50	49	42	42	41	40	33	30	29	19½	34
Depth in yards - -		14½	14	16½	16	13	13½	13¼	13¼	11	10	9½	13 8¾	24 18
Yards in the ſail -		710½	658	808½	768	533	553½	540	516¾	352	290	266	174	609
——— reef-bands -	1	19	18¾	22	20	17	17	16½	16	13	12	11½	21	27
													Peek-Piece.	
——— middle band -	5 to 6	30	28½	31	30	26	26	25¼	25	20	18½	17½	1	2
——— leech-linings -	1	33½	31¾	37	35¾	28½	29½	29	29	24½	22¾	22	8¾	18
													Clue-Piece.	
——— buntline-cloths	1	19	18½	23	21½	17½	17¾	17	17	14	13½	13	5	8
——— gores - -	1	18¾	14¼	19¼	14½	8	9½	8¾	8¾	8	9	9	3½	45
Totals -		830¾	769¾	940¾	889¾	630	653¼	636½	612½	431½	365¾	339	213¼	709
		Inches.											Maſt-Leech.	
													3	3
Bolt-rope on the - - head -		2½	2½	2½	2½	2	2	1¾	1¾	1½	1½	1½	1½	1½
Bolt-rope on the - - foot -		6	5¾	6	5¾	5	4¾	4½	4½	4	3½	3½	1¾	1¾
Bolt-rope on the - - leeches		6	5¾	6	5¾	5	4¾	4½	4½	4	3½	3½	1¾	1¾

Gores.—One cloth is gored on each *leech;* and the gore on the *foot* is of one inch *per* cloth, beginning at two cloths within the neareſt buntline-cringle, and increaſing to the clues. Sometimes, in merchant-ſhips, two cloths are gored on the leeches, and the gore on the foot is two inches *per* cloth.

For *tablings*, *reef-bands*, *middle bands*, and *buntline-cloths*, conſult the firſt proceſs in ſail-making; and ſewing them on, the ſecond proceſs; likewiſe the *ſeams*, *reef*, and *head-holes*.

In ſewing on the bolt-rope, two inches of *ſlack-cloth* ſhould be taken up in every cloth in the head and foot, and one inch and a half in every yard in the leeches.

Clues are made with clue-rope two inches larger than the foot-rope, for ſhips of 50 guns and upwards; and one inch and a half larger for ſhips under 50 guns; and thoſe in merchant-ſhips are in proportion.

Marline-holes extend from the clue to the lower bowline-cringle on the leech; and to the firſt buntline-cringle at the foot.

Reef-cringles: one is made on the leeches at the end of each reef-band; three bowline-cringles are made at equal diſtances between the lower reef-cringle and the clue; and *buntline-cringles* are made on the *foot-rope*, one at the end of each buntline-cloth.

To find the quantity of canvas, refer to Rule 1.

FORE-COURSE, 5. *Plate* IV. *fig.* 2.

This ſail is quadrilateral, ſquare on the head. It bends at the head to the fore-yard, and extends within eighteen inches of the cleats on the yard-arms, and drops to clear the foot of the main-ſtay.

Guns	Sort of Canvas.	110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons		2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200
Number of cloths in the head	N°	42	40	41	40	35	35	34	33	27	25	24	19
Number of cloths in the foot	1 to 2	40	38	39	38	33	34	33	32	24	24	23	18
Depth in yards		12¼	11½	13½	13	11½	11½	11	11	9	9	8¾	7½
Yards in the ſail		502¼	448½	540	507	391	396¾	368½	357½	238½	220½	205⅝	138¾
——— reef-bands	1 to 2	17½	16	17¼	17	13¾	13¾	14½	13½	10⅜	10¾	10	7
——— middle band	5 to 6, 7	24½	23	24½	24½	21½	21½	20	19½	15⅞	15½	14½	11½
——— leech-linings	1 to 2	27¾	26	30	29½	24	24½	24	24	20	20	19½	16½
——— buntline-cloths	1 to 2	16	15¾	18¼	17½	14¼	14¾	14	14	12	12	11¾	7½
——— gores	1 to 2	11	10¾	10½	10	6	6	5¾	5¾	5⅞	5½	5¼	3¼
Totals		599	540	640½	605½	470½	477¼	446¾	434¼	303⅛	284¼	266⅝	184½
		Inches.											
Bolt-rope on the head		2¼	2¼	2	2	1¾	1¾	1¾	1¾	1½	1½	1¼	1¼
Bolt-rope on the foot		5½	5¼	5	5	4¼	4¼	4	4	3½	3	2½	2½
Bolt-rope on the leeches		5½	5¼	5	5	4¼	4¼	4	4	3½	3	2½	2½

Gores.—One cloth is gored on each *leech*, and a gore is made on the *foot*, to drop the clue five to ſix inches *per* cloth, beginning at two cloths within the neareſt buntline-cringle, and increaſing to the clues. Sometimes two cloths are gored on each leech in merchant-ſhips.

This ſail only differs from the former in the *buntline-cringles* having only two; the upper bowline-cringle is made in the middle of the leech, and the lower one equally diſtant from the upper one and the clue.

Marline-holes are made in the tabling, from the clue to the neareſt buntline-cringle on the foot, and one-eighth of the depth of the ſail up the leech. They are turned on the contrary ſide to the roping, in fixing the ſail.

To find the quantity of canvas, refer to Rule 1.

MIZEN-COURSE, 9. *Plate* IV. *fig.* 2.

This ſail is quadrilateral, and made of canvas N° 2, from 36 guns and upwards; N° 3, to 24 guns; and to 16 guns N° 4. The head is bent to the gaff, and extends within nine inches of the cleats. The fore-leech is attached to the mizen-maſt within ſix or ſeven feet of the deck.

Guns	110	98	80	74	50	44	38	36	24	18	16
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360
Number of cloths in the head	17	16	16	16	13	13	13	13	10	9	9
Number of cloths in the foot	18	17	17	17	14	14	14	14	11	10	10
Depth of the leech in yards fore	10½	9½	11	11	8½	11½	11¼	10¾	9	8	7¾
Depth of the leech in yards aft	20½	19½	21	21	16¼	18½	18¼	18¼	15½	14½	13½
Yards in the ſail	271¼	239¼	264	264	167	202½	199⅛	195¾	122½	103⅞	100¾
——— reef-band	3¾	3½	3½	3½	2¾	3	3	3	2	2	2
——— nock and peek-pieces	2	2	2	2	2	2	2	2	2	2	2
——— clue-pieces	5	5	5	5	5	5	5	5	5	5	5
——— gores	10	9	9½	9½	6	7½	7	7	5	4½	4
Totals	292	258¾	284	284	182¾	220	216⅛	212¾	136½	117⅜	113¾
	Inches.										
Bolt-rope on the head	1¾	1¾	1¾	1¾	1½	1½	1½	1½	1½	1½	1½
Bolt-rope on the foot	3½	3¼	3	3	2½	2½	2¼	2¼	2	1¾	1¾
Bolt-rope on the fore-leech	4½	4¼	4	4	3	2¾	2½	2½	2½	2¼	2¼
Bolt-rope on the after-leech	3¼	3	3	3	2½	2¼	2¼	2¼	2	1¾	1¾

Gores.—The head is cut with a gore of 16 to 22 inches *per* cloth, agreeable to the peek: the foot is gored one inch *per* cloth, leaving two cloths ſquare in the middle. One cloth is gored on the maſt-leech in the navy, and ſometimes two cloths in merchant-ſhips.

For *ſeams, tablings,* and *head-holes,* conſult the three proceſſes in ſail-making.

This ſail has a *reef-band* ſix or eight inches broad, at one-fifth of the depth of the maſt-leech from the foot.

Reef-hanks are pieces of log-line ſewed on to the reef-band, at each ſeam on both ſides of the ſail. One end of each hank is ſpread open, and each ſtrand ſecurely ſewed; the other end of each hank is whipped: or they may be fixed on thus: the line is thruſt through the ſail, and ſecurely ſewed to it on one ſide, by opening the ſtrands a little, ſo as to lay them flat on the canvas.

Lining.—The after-leech is lined from the clue with one breadth of canvas up the leech, and the *nock* and *peek* with pieces ſo cut from each other, that each contains one yard.

Marline-holes extend two feet each way from the clue.

Bolt-rope-clue, and ſewing it on, conſult the third proceſs in ſail-making.

One *cringle* is made on each leech at the ends of the reef-band; and one at the diſtance of every three-quarters of a yard on the maſt-leech; or ſometimes holes are worked in the tabling of the maſt-leech; a cringle is alſo made five yards from the clue on the after-leech for the throat-brails.

To find the quantity of canvas, refer to Rule 2.

SPRITSAIL-COURSE, 13. *Plate* IV. *fig.* 2.

This ſail is quadrilateral, ſquare on the head, foot, and leeches, and made of canvas N° 2, from 50 guns and upwards; and N° 3, to 18 guns; and all under of N° 4. It is bent at the head to the ſprit-ſail-yard, extending within nine inches of the cleats on the yard-arms.

Guns		110	98	80	74	50	44	38	36	24	18	16
Tons		2165	1970	1900	1860	1200	1120	1040	920	600	425	360
Number of cloths in the	head	30	28	29	29	25	25	25	24	19	17	17
	foot	30	28	29	29	25	25	25	24	19	17	17
Depth in yards		9	9	8½	8½	7	6½	6	6	5½	5	5
Yards in the ſail		270	252	246½	246½	175	162½	150	144	104½	85	85
——— reef-bands		9½	8¾	9	9	8	8	8	7	6	5	5
Totals		279½	260½	255½	255½	183	170½	158	151	110½	90	90
		Inches.										
Bolt-rope on the	head	1¾	1¾	1½	1½	1½	1½	1½	1½	1½	1¼	1¼
	foot	3¼	3¼	3	3	2½	2¼	2¼	2¼	2	1¾	1¾
	leeches	3¼	3¼	3	3	2½	2¼	2¼	2½	2	1¾	1¾

For *ſeams, tablings, reef* and *head-holes,* conſult the two firſt proceſſes of ſail-making.

Two *reef-bands,* one-third of the breadth of a cloth, are ſewed on diagonally; the ends on the leeches being 27 inches from the clues, and thoſe at the head on the ſecond or third ſeam from the earings. Sometimes a reef-band is ſewed on from leech to leech, at one-fifth of the depth of the ſail from the head.

A *water-hole,* from four to ſix inches diameter, is made in the ſecond cloth from each leech, near the foot, or oppoſite the reef-cringles.

Marline-holes extend two feet each way from the clues.

Bolt-rope and *clues,* and ſewing them on, conſult the third proceſs in ſail-making.

A reef-cringle is made on the leeches at the end of each reef-band, and two buntline-cringles are made on the foot-rope, at one-third of the breadth of the foot from each clue.

To find the quantity of canvas, refer to Rule 3.

MAIN-TOPSAIL, 2. *Plate* IV. *fig.* 2.

This ſail is quadrilateral, ſquare on the head and foot in the navy, and made of canvas N° 2, from 50 guns and upwards; and N° 3, all under. It is bent at the head to the main-topſail-yard, and extends within eighteen inches of the cleats on the yard-arms, and drops to the main-yard when the reſpective yards are hoiſted to the hounds.

Guns	110	98	80	74	50	44	38	36	24	18	16	Brig.	Cutt.
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200	180
Number of cloths in the head	31	30	31	31	26	26	25	24	20	18	17	13	23
Number of cloths in the foot	49	48	48	48	40	40	40	38	32	29	28	19½	27
Depth in yards	21	20	20¼	20¼	16¼	16¾	16½	16¼	13¾	13	12	9¾	13¾
Yards in the ſail	840	780	799⅞	799⅞	536¼	544¾	536¼	503¾	357½	305½	270	158¼	362
——— reef-bands	56	53	54	54	34	34	33	32	27½	27	25	9½	10
——— middle band	27	25	26	26	21½	22	22	21¾	17½	14½	14	2¾	Gores.
——— leech-linings	44	42½	42⅝	42⅝	34½	35	34	34	26	25	25	20½	6
——— top-lining	75	74	70	70	55¾	54	53	53	37½	28	26½	15	14
——— buntline-cloths	12	12	12	12	10	10¼	9¾	9¾	8¼	6¾	6½	11	
Totals	1054	986½	1004½	1004½	692	700	688	654¼	474¼	406¾	367	217	392
	Inches.												
Bolt-rope on the head	2½	2¼	2¼	2¼	2	2	2	1¾	1½	1½	1½	1½	1½
Bolt-rope on the foot	5¾	5½	5½	5½	5	5	5	4¼	3¾	3	3	2¼	2¼
Bolt-rope on the leeches	5	4¾	4¾	4¾	4¼	4¼	4¼	3½	3	2½	2½	2¼	2¼

Gores.—The cloths on the leeches are gored ſufficiently for the foot to ſpread the cleats on the arms of the main-yard. In merchant-ſhips the *foot* is gored from two to four inches *per* cloth, one-third of the breadth of the foot from the clues.

For *ſeams*, *tablings*, *reef* and *head-holes*, refer to the firſt proceſs in ſail-making.

Reef-bands.—This ſail has moſtly four reef-bands of N° 2 cloth, from 50 guns upwards; N° 3 to 18; and N° 4 for 16 guns; put on at one-eighth of the ſail aſunder, the upper one being kept at that diſtance from the head. In merchant-ſhips the reef-bands are moſtly put on farther diſtant from each other.

Middle band is of N° 5 cloth, from 74 guns upwards; N° 6 to 18; and N° 7 for 16 guns; put on half-way between the lower reef-band and the foot.

Leech-lining is of N° 2 cloth, from 50 guns upwards; N° 3 to 18; and N° 4 for 16 guns. (See firſt proceſs of ſail-making.) Merchant-ſhips have leech-linings nine inches broad at the head, and fifteen inches broad at the foot.

Top-lining of N° 6 cloth, from 18 guns upwards, and N° 7 for 16 guns; covers one-fifth of the cloths on the aft-ſide of the *foot* in the middle of the ſail. In merchant-ſhips the top-lining covers one-third of the cloths in the foot.

Two *maſt-cloths* are put on in the middle of the ſail, on the aft-ſide, between the middle band and lower reef-band.

Two *buntline-cloths* (the ſame N° of cloth as the leech-lining) are put on the fore-ſide of the ſail, and one each ſide of the top-lining; their ends are carried up under the middle band, which is tabled on them. In merchant-ſhips the buntline-cloths are half a yard ſhorter than the top-linings.

Bolt-rope.—Three inches of *ſlack-cloth* are taken up in ſewing on the bolt-rope in every cloth on the head and foot; two inches are allowed for every cloth left open in the top-brim; and one inch and a half is taken up in every yard in the leeches. The bolt-rope along the top-brim, and for one cloth and a half on each ſide beyond, is wormed, parcelled, and ſerved as the clues, and is marled to the ſail; but ſometimes the whole length of the foot-rope, from clue to clue, is wormed, parcelled, &c. See third proceſs in ſail-making.

Clues.—The clues are made of the foot-rope, which is left ſufficiently long for that purpoſe, and ſplice into the leech-rope at the lower bowline-cringle. It is wormed, parcelled, and ſerved at the clues, and three feet each way from them: it is marled on to the ſail the extent of the ſerving on each ſide of the clues, which are ſeized as thoſe of the main-courſe.

The *marline-holes* extend three feet each way from the clues, and along the breadth of the top-lining at the top-brim.

Cringles.—One *reef-cringle* is made on the leeches at the end of each reef-band, and a *reef-tackle-pendant-cringle* between the lower reef and upper bowline-cringle; below theſe are four *bowline-cringles;* the upper one is in the middle of the leech, and the other three are equally diſtant from each other between the upper one and the clue. One *buntline-cringle* is made in the middle of each buntline-cloth at the foot. In merchant-ſhips three bowline-cringles only are made on the leeches.

To find the quantity of canvas contained in this ſail, refer to Rule 1.

FORE-TOPSAIL, 6. *Plate* IV. *fig.* 2.

This ſail is quadrilateral, ſquare on the head and foot in the royal navy, and made of canvas, the ſame as the main-topſail. The head is bent to the fore-topſail-yard, extending at the head within 18 inches of the cleats on the yard-arms.

Guns - - - - -	110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons - - - - -	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200
Number of cloths in the head -	27	26	28	28	22	22	22	22	17	16	15	13
Number of cloths in the foot -	43	41	42	42	35	34	34	33	28	25	24	19½
Depth in yards - -	19	18	18½	18	14¾	14¾	14½	14¼	12¼	11¾	10½	9½
Yards in the ſail - -	665	603	647½	630	420⅜	413	406	391½	276⅝	240⅞	204½	154⅜
——— reef-band -	45	41	46	46	30	30	30	29½	23	22	21	9⅝
——— middle band -	23	22	23	23	19	19	19	19	15	13½	12⅛	Gores. 2⅝
——— leech-linings -	40	38	39	38	31½	31½	30½	30	25½	24½	21½	20
——— top-linings -	58	56	57	56	40¾	40	39	39	30½	27	23½	16
——— buntline-cloths	10½	10½	10	9½	9	9	8½	8½	7½	6½	6	9½
Totals -	841½	770½	822½	802½	550⅝	542½	533	517½	378⅛	334⅜	288⅝	212⅛
Bolt-rope on the head -	Inches. 2	2	2	2	1½	1½	1½	1½	1½	1¼	1¼	1½
Bolt-rope on the foot -	5¼	5	5	5	4	4	4	3¾	3¾	2¾	2¾	2¼
Bolt-rope on the leeches -	4½	4¼	4¼	4¼	3¼	3¼	3¼	3	3	2¾	2¼	2¼

Gores, and every other particular, the ſame as the main-topſail.

MIZEN-TOPSAIL, 10. *Plate* IV. *fig.* 2.

This ſail is quadrilateral, cut ſquare on the head, and made of canvas N° 4, from 50-gun ſhips and upwards; N° 5 to 18 guns; and of N° 6, thoſe of 16 guns. It is bent at the head to the mizen-topſail-yard, and drops to the croſs-jack-yard, extending within twelve inches of the cleats on the yard-arms.

Guns - - - - -	110	98	80	74	50	44	38	36	24	18	16
Tons - - - - -	2165	1970	1900	1860	1200	1120	1040	920	600	425	360
Number of cloths in the head -	21	20½	21	21	17	18	18	17	13½	12	12
Number of cloths in the foot -	31	29	30	30	25½	25½	25½	25	20	18	17½
Depth in yards - - -	14½	13¾	14¼	14	11¼	11¾	11¾	11¼	9¼	7¾	7¾
Yards in the ſail - - -	377	340	363¼	357	233¾	255½	255½	236¼	155	116¼	113¾
——— reef-bands -	21	20½	21	21	20¼	20½	20½	18¾	9½	8½	8½
——— middle band -	16¾	16	16	16	15¾	16	16	15	11	9½	9½
——— leech-linings -	31½	30½	31¼	31	27½	28	28	26	21	18½	18½
——— top-lining -	38½	37¾	38	38	33	34	34	32	18½	14	14
——— buntline-cloths	8¼	8¼	8¼	8	6¾	7	7	7	6	4½	4½
——— gores - -	4	4	4	4	4	4	4	4	4	4	4
Totals -	497	457	481¾	475	341	365	365	339	225	175¼	172¾
Bolt-rope on the head -	Inches. 1½	1½	1½	1½	1½	1½	1½	1½	1¼	1¼	1¼
Bolt-rope on the foot -	3½	3½	3½	3½	3	3	3	3	2¾	2¼	2¼
Bolt-rope on the leeches -	2¾	2¾	2¾	2¾	2½	2½	2½	2½	2¼	1¾	1¾

Gores.—The cloths on the leeches are gored ſufficiently for the foot to ſpread to the cleats on the arms of the croſs-jack-yard. The gore on the foot is three-quarters of a yard deep, and begins at two cloths from the buntline-cringle, on the ſide next the clues. In merchant-ſhips the foot is ſometimes ſquare.

For *ſeams, &c.* ſee MAIN-TOPSAIL.

Reef-bands.—For 36-gun ſhips and upwards, to have three reef-bands of N° 4 canvas, at one-eighth of the depth of the ſail aſunder from the head; and 24-gun ſhips and under of the ſame canvas the ſail is made of, and two reefs only one-ſeventh of the depth of the ſail aſunder. Merchant-ſhips have ſeldom more than two reef-bands.

Middle band, of N° 6 canvas, for 36-gun ſhips and upwards; and N° 7 all under, put on as main-topſail. Merchant-ſhips have none.

Leech-linings, &c. &c. ſimilar to the main-topſail.

MAIN-TOPGALLANT-SAIL, 3. *Plate* IV. *fig.* 2.

This ſail is quadrilateral, and ſquare on the head and foot, in the royal navy, and made of canvas N° 6, from 50-gun ſhips upwards; and all ſhips under, of N° 7. The head is bent to the main-topgallant-yard, and extends within ſix inches of the cleats on the yard-arms.

Guns	110	98	80	74	50	44	38	36	24	18	16	Brig.	Cutter.
Tons	2165	1970	1900	1860	1200	1120	1140	920	600	425	360	200	180
Number of cloths in the head	23	21	22	22	18	18	18	16	14	13	12	10½	7
Number of cloths in the foot	31	30	31	31	27	26	26	25	21	19	18	14	17
Depth in yards	10½	10	10	10	8	8¼	8¼	7¾	6¾	6½	6	5½	6½
Yards in the ſail	283½	255	265	265	180	181½	181½	159	117¾	104	90	70½	78
Yards in the clue and earing-pieces	3	3	3	3	3	3	3	3	3	3	3	2½	3
Totals	286½	258	268	268	183	184½	184½	162	120¾	107	93	73	81
	Inches.												
Bolt-rope on the head	1½	1½	1½	1½	1¼	1¼	1¼	1¼	1¼	1	1	1	1
Bolt-rope on the foot	2¾	2¾	2¾	2¾	2¼	2¼	2¼	2¼	2	1¾	1½	1½	1½
Bolt-rope on the leeches	2¾	2¾	2¾	2¾	2¼	2¼	2¼	2¼	2	1¾	1½	1½	1½

Gores.—The cloths on the leeches are gored ſufficiently for the foot to ſpread to the cleats on the arms of the main-topſail-yard. A gore of two or three inches *per* cloth is often made on the foot, in merchant-ſhips, beginning at one-third of the breadth of the foot from the clue.

For *ſeams, tablings, head-holes, ſewing on the bolt-rope,* and *clues,* refer to the three proceſſes of ſail-making.

The cloth at the clue is ſo cut as to fall to the foot, and form its own *lining;* and earing-pieces, of a quarter of a yard, are put on each corner, at the head.

Three *bowline-cringles* are made on each leech, the upper one in the middle, and the others equally aſunder between that and the clue.

To find the quantity of canvas, refer to Rule 1.

FORE-TOPGALLANT-SAIL, 7. *Plate* IV. *fig.* 2.

This ſail bends at the head to the fore-topgallant-yard, and is ſo much like the former as only to need the following dimenſions.

Guns	110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200
Number of cloths in the head	20	19	19	19	15	15	15	14½	12	11	10½	10½
Number of cloths in the foot	28	26	27	27	24	23	23	22½	18	17	16	14
Depth in yards	10	9	8½	8½	7½	7¼	7¼	6¾	6	6	5½	5½
Yards in the ſail	240	202½	195½	195½	146¼	137¾	137¾	125	90	84	73⅛	70½
Yards in the clue and earing-pieces	3	3	3	3	3	3	3	3	3	3	3	2½
Totals	243	205½	198½	198½	149¼	140¾	140¾	128	93	87	76⅛	73
Bolt-rope as the main-topgallant-ſail.												

MIZEN-TOPGALLANT-SAIL, 11. *Plate* IV. *fig.* 2.

This ſail is quadrilateral, ſquare on the head and foot, in the navy; made of canvas N° 7, from 50-gun ſhips upwards, and all under of N° 8. The head bends to the mizen-topgallant-yard, extending within ſix inches on the cleats on the yard-arms.

Guns	110	98	80	74	50	44	38	36	24	18	16
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360
Number of cloths in the head	15	15	15	15	12½	13	13	12½	10½	8	8
Number of cloths in the foot	22	21	21	21	17½	19	19	18	14	13	12
Depth in yards	7	7	7	7	6¼	6¼	6¼	6¼	5	4½	4½
Yards in the ſail	129½	126	126	126	93¾	100	100	95⅜	61¼	47¼	45
Yards in the clue and earing-pieces	1	1	1	1	1	1	1	1	1	1	1
Totals	130½	127	127	127	94¾	101	101	96⅜	62¼	48¼	46
	Inches.										
Bolt-rope on the head	1¼	1¼	1¼	1¼	1	1	1	1	1	1	1
Bolt-rope on the foot	2	2	2	2	1½	1½	1½	1½	1¼	1¼	1¼
Bolt-rope on the leeches	2	2	2	2	1½	1½	1½	1½	1¼	1¼	1¼

Gores.—The leeches are gored ſufficiently for the foot to ſpread to the cleats on the arms of the mizen-topſail-yard. In merchant-ſhips a ſmall gore is ſometimes made on the foot, beginning at one-third of the breadth from the clue.

Pieces, at the clues and earings, are each a quarter of a yard in length.

For the *ſeams, tablings, head-holes, clues,* and *bolt-rope,* conſult the three proceſſes of ſail-making.

To find the quantity of canvas, refer to Rule 1.

MAIN-ROYAL, 4. *Plate* IV. *fig.* 2.

This ſail is quadrilateral, ſquare on the head and foot, made of canvas N° 8. The head is bent to the main-royal-yard, and extends within four inches of the cleats on the yard-arms.

Guns	110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200
Number of cloths in the head	16	15	14	14	11½	11	11	11	9½	9	8	7½
Number of cloths in the foot	23	22	21	21	18	17	17	16	13½	13	12½	11
Depth in yards	8	7½	7	7	6	6¼	6¼	6¼	4¾	4	3¾	4
Yards in the ſail	156	138¾	121½	121½	88½	87½	87½	84¾	54⅝	44	38½	37
	Inches.											
Bolt-rope on the head	1¼	1¼	1¼	1¼	1	1	1	1	1	1	1	1
Bolt-rope on the foot	2	2	1¾	1¾	1½	1½	1½	1½	1¼	1¼	1¼	1¼
Bolt-rope on the leeches	2	2	1¾	1¾	1½	1½	1½	1½	1¼	1¼	1¼	1¼

Gores.—The cloths on the leeches are gored ſufficiently for the foot to ſpread to the cleats on the main-topgallant-yard-arms.

For *ſeams, tablings, head-holes,* and *clues,* conſult the three proceſſes in ſail-making.

To find the quantity of canvas, refer to Rule 1.

Fore-royal, 8. *Plate* IV. *fig.* 2.

This ſail is bent at the head to the fore-royal-yard, and is ſo much like the former, as only to need the following dimenſions.

Guns	110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200
Number of cloths in the head	13	12	12	12	10	10	10	10	8½	8	7½	7½
Number of cloths in the foot	20	19	19	19	15	15	15	15	12½	11½	11	11
Depth in yards	7	6¾	6¾	6¾	5	5	5	5	4½	3¾	3½	4
Yards in the ſail	115½	104⅝	104⅝	104⅝	62½	62½	62½	62½	47¼	36¾	32⅜	37
Bolt-rope the ſame ſize as the main-royal.												

Mizen-royal, 12. *Plate* IV. *fig.* 2.

This ſail is bent at the head to the mizen-royal-yard, and ſo like the main-royal, as only to need the following dimenſions.

Guns	110	98	80	74	50	44	38	36	24	18	16
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360
Number of cloths in the head	11	11	11	11	9	9	9	9	7	4	4
Number of cloths in the foot	15	15	15	15	13	13	13	13	11	8	8
Depth in yards	5½	5½	5½	5½	4¾	4¾	4¾	4¾	3¼	3¼	3
Yards in the ſail	71½	71½	71½	71½	52¼	52¼	52¼	52¼	29¼	19½	18
	Inches.										
Bolt-rope on the head	1	1	1	1	1	1	1	1	¾	¾	¾
Bolt-rope on the foot	1¾	1¾	1¾	1¾	1¼	1¼	1¼	1¼	1	1	1
Bolt-rope on the leeches	1¾	1¾	1¾	1¾	1¼	1¼	1¼	1¼	1	1	1

Main-staysail, 1. *Plate* IV. *fig.* 1.

This ſail is triangular, ſquare on the foot in the royal navy, and made of canvas N° 1, from 50-gun ſhips upwards, N° 2 to 18 guns, and all under of N° 3. It is extended upon the main-ſtayſail-ſtay, and drops to clear the foot of the boats upon the beams. This ſail is ſeldom uſed in large veſſels.

Guns	110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200
Number of cloths in the foot	32	31	32	32	26	25	24	24	22	18	17	head 13 foot 14
Depth in yards	15	14	16	16	13	13½	13¼	13	11½	9½	9½	9
Yards in the ſail	240	217	256	256	169	168¾	159	156	126½	85½	80¾	67½
Yards in the tack and peek-pieces	2	2	2	2	2	2	2	2	2	2	2	1
Yards in the clue-piece	2	2	2	2	2	2	2	2	2	2	2	1½
Totals	244	221	260	260	173	172¾	163	160	130½	89½	84¾	70
	Inches.											
Bolt-rope on the head	3¼	3¼	3	3	2¾	2¾	2½	2½	2¼	2	2	2
Bolt-rope on the foot	3¼	3¼	3	3	2¾	2¾	2½	2½	2¼	2	2	2
Bolt-rope on the after-leech	3¼	3¼	3	3	2¾	2¾	2½	2½	2¼	2	2	2

Gores.—A regular gore is made on the head, of from 17 to 19 inches *per* cloth; the depth of the gore on each cloth in the head, is found by dividing the depth of the leech by the number of cloths. The cloth at the tack is ſo cut as to fall to the foot, and form its own *lining*. The *clue-piece* extends two yards up the leech, and the *peek-piece* is one yard in length.

For *ſeams*, *tablings*, *holes*, *ſewing on the bolt-rope*, and *clue*, conſult the three proceſſes in ſail-making.

Iron thimbles are ſometimes ſtuck at the tack and peek; but when none, the tack and peek are the ſame as the clue.

A *cringle* is made on the leech for the brails, but is uſually done by the ſeamen on board.

In merchant-ſhips this ſail is frequently cut with a bunt, and a gore is ſometimes made on the foot, with a ſweep. It alſo frequently has a reef-band at about four feet from the foot, and ſometimes a bonnet.

To find the quantity of canvas, refer to Rule 5.

FORE-STAYSAIL, 5. *Plate* IV. *fig.* 1.

This ſail is triangular, ſquare on the foot, and made of canvas N° 1, from 50-gun ſhips upwards, N° 2 to 18 guns, and all under of N° 3. It is extended on the fore-ſtay or fore-preventer-ſtay.

Guns	110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200
Number of cloths in the foot	23	22	22	22	18	17	17	17	15	14	13	9
Depth in yards	13	12	13¼	13¼	11	11¼	11	11	9½	8½	8	9
Yards in the ſail	149½	132	145¾	145¾	99	95⅝	93½	93½	71¼	59½	52	40½
Yards in the tack and peek-pieces	1	1	1	1	1	1	1	1	1	1	1	3
Yards in the clue-piece	2	2	2	2	2	2	2	2	2	2	2	
Totals	152½	135	148¾	148¾	102	98⅝	96½	96½	74¼	62½	55	43½
Bolt-rope as the main-ſtay-ſail.												

Gores.—A regular gore is made on the ſtay or head, of from 21 to 23 inches *per* cloth. The remainder of this ſail is ſo much like the former as to need no further deſcription.

FORE-TOPMAST-STAYSAIL, 6. *Plate* IV. *fig.* 1.

This ſail is triangular, cut ſquare on the foot, and made of canvas N° 5, from 50-gun ſhips upwards, and all under of N° 6. It is hoiſted on the fore-topmaſt-ſtayſail-ſtay. The leech is generally the ſame depth as the fore-topſail. In merchant-ſhips, one cloth only is allowed in the foot for every yard in the depth of the leech.

Guns	110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200
Number of cloths in the foot	22	21	21	21	17	16	16	16	14	13	12	10
Depth in yards	19	18	18	18	15	15	14½	14	12½	11½	11	10
Yards in the ſail	209	189	189	189	127½	120	116	112	87½	74¾	66	50
Yards in the tack and peek-pieces	2	2	2	2	2	2	2	2	1	1	1	3
Yards in the clue-piece	2	2	2	2	2	2	2	2	2	2	2	
Totals	213	193	193	193	131½	124	120	116	90½	77¾	69	53
	Inches.											
Bolt-rope on the head	2¾	2¾	2¾	2¾	2½	2¼	2¼	2¼	2	2	2	2
Bolt-rope on the foot	2¾	2¾	2¾	2¾	2½	2¼	2¼	2¼	2	2	2	2
Bolt-rope on the after-leech	2¾	2¾	2¾	2¾	2½	2¼	2¼	2¼	2	2	2	2

Gores.—The ſtay or head is gored 30 inches *per* cloth. For *ſeams*, *tablings*, &c. &c. refer to the main-ſtayſail.

Jib, 7. *Plate* IV. *fig.* 1.

This ſail is triangular, made of canvas N° 6, from ſhips of 50 guns and upwards, and all under of N° 7. It is hoiſted on the jib-ſtay. The leech is about twice the depth of the leech of the fore-ſtayſail, and one cloth more is allowed for the breadth of the foot than the leech is yards in depth.

Guns - - - - -	110	98	80	74	50	44	38	36	24	18	16	Brig.	Cutter.
Tons - - - - -	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200	180
Number of cloths in the foot	27	26	26	26	23	22	22	21	19	17	16	12	22
Depth in yards - -	26	25	25	25	22	21	21	20	18	16	15	13	20
Yards in the ſail - -	351	325	325	325	253	231	231	210	171	136	120	78	230
Yards in the gores on the foot	28	24	24	24	17	13	13	12	11½	7	6¼	8	66
Yards in the clue, peek, and tack-pieces - -	3	3	3	3	3	3	3	3	3	3	3	3	6
Totals -	382	352	352	352	273	247	247	225	185½	146	129¼	89	302
	Inches.												
Bolt-rope on the head or ſtay -	3½	3¼	3¼	3¼	3	2¾	2¾	2¾	2½	2¼	2¼	2¼	6
Bolt-rope on the after-leech -	1¾	1¾	1¾	1¾	1½	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1½
Bolt-rope on the foot -	1¾	1¾	1¾	1¾	1½	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1½

Gores.—The head or ſtay is cut with a ſmall curve, or roach. The gores ſhould be allowed full, and the curve cut fair, after the ſail is ſewed together; which, it is ſuppoſed, makes it ſit better, when bent. The foot has an even gore of three inches *per* cloth, decreaſing from the tack to the clue, which is governed by the ſtive of the bowſprit.

For brigs, this ſail has a curve on the foot, and ſometimes in merchant-ſhips. The ſeams are generally one inch broader at the foot than at the head, when cut with a curve or roach-foot.

For *ſeams*, *tablings*, &c. &c. refer to the main-ſtayſail.

Flying Jib.

This ſail is made of canvas N° 8, and ſo ſimilar to the former, as only to need the following dimenſions.

Guns - - - - -	110	98	80	74	50	44	38	36	24	18	16	Brig.	Cutter.
Tons - - - - -	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200	180
Number of cloths in the foot	16	15	16	16	14	13	13	13	11	9	9	9	10
Depth in yards - -	20	19	20	20	17	15	15	15	14	11	11	11	10
Yards in the ſail - -	160	142½	160	160	119	97½	97½	97½	77	49½	49½	49½	50
Yards in the gores on the foot	19	17½	19	19	15	15	15	15	12	9	9	9	24
Yards in the clue, peek, and tack-pieces - -	3	3	3	3	3	3	3	3	3	3	3	3	6
Totals -	182	163	182	182	137	115½	115½	115½	92	61½	61½	61½	80

Mizen-staysail, 8. *Plate* IV. *fig.* 1.

This ſail is quadrilateral, cut ſquare on the foot, and made of canvas N° 2, from ſhips of 50 guns and upwards; N° 3, to 24-gun ſhips; and all under, N° 4. It is extended on the mizen-ſtay, and has a bunt, or fore-leech, three-fifths of the depth of the after-leech in the navy, and one-third or one-fourth of the depth of the after-leech in merchant-ſhips. The foot drops within ſix or ſeven feet of the quarter-deck.

Guns		110	98	80	74	50	44	38	36	24	18	16
Tons		2165	1970	1900	1860	1200	1120	1040	920	600	425	360
Number of cloths in the	head	23	21	21	20½	18	16½	16	16	14	13	13
	foot	25	23	23	22½	20	18½	18	18	16	15	15
Depth in yards of the	after-leech	14	13	13½	13½	11	12½	12	12	9½	9	9
	fore-leech	8½	8	9½	9½	7	7½	7	7	5½	5	5
Yards in the ſail		270	231	247½	247¼	171	170½	161½	161½	112	87½	87½
Yards in the peek and clue-pieces		3	3	3	3	3	3	3	3	3	3	3
Yards in the bunt-lining		4½	4	4¾	4¾	3½	4	3½	3½	2¾	2½	2½
Totals		277½	238	255¼	255	177½	177½	168	168	117¾	93	93
		Inches.										
Bolt-rope on the	head	3¼	3¼	3¼	3¼	3	3	2¾	2¾	2½	2¼	2¼
	foot	3¼	3¼	3¼	3¼	3	3	2¾	2¾	2½	2¼	2¼
	leeches	3¼	3¼	3¼	3¼	3	3	2¾	2¾	2½	2¼	2¼

Gores.—Two cloths are generally gored on the bunt, and the head or ſtay is gored from 10 to 12 inches *per* cloth. If the depth of the bunt be ſubtracted from the depth of the leech; the remainder, divided by the number of cloths on the head, gives the depth of each gore on the ſtay.

For *ſeams* and *tablings*, conſult the firſt proceſs in ſail-making.

Linings, &c.—The bunt is lined with half a breadth of cloth; the *clue-piece* is two yards long, and the *peek-piece* one yard. In merchant-ſhips the tack, peek, and nock-pieces, are generally but three-quarters of a yard in length.

Cringles.—One or two are made on the after-leech for the brails, and thimbles are ſtuck in the middle of the ſail, to lead them through; but this is uſually done by the ſeamen on board.

Holes on the ſtay, *marline-holes* at the *clue*, and *ſewing on the bolt-rope*, as directed in the third proceſs of ſail-making.

Thimbles are ſometimes ſtuck at the tack and peek; but when thimbles are not uſed, the tack and peek are frequently marled as the clue.

To find the quantity of canvas, refer to Rule 6.

MAIN-TOPMAST-STAYSAIL, 12. *Plate* IV. *fig.* 1.

This ſail is quadrilateral, cut ſquare on the foot, and made of canvas N° 5, from ſhips of 50 guns and upwards; and of N° 6, all under. It hoiſts on the main-topmaſt-preventer-ſtay. The leech is four or five yards deeper than the main-topſail, and there are one or two cloths more in the foot than the leech is yards in depth. In large merchant-ſhips, the leech is four or five yards deeper than the main-topſail; but in ſmaller ſhips, only one or two cloths more in the foot than the leech is yards in depth.

The bunt is two-fifths of the depth of the leech; but in merchant-ſhips, it is from two-fifths to one-half of the depth.

Guns		110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons		2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200
Number of cloths in the	head	26	25	25	25	21	20	19½	19½	17	15	14	12
	foot	28	27	27	27	23	22	21½	21½	19	17	16	13
Depth in yards of the	after-leech	26	25	25	25	21¾	21	20½	20½	18	16	15½	11
	fore-leech	10	9	9½	9½	8¾	8½	8	8	7	6	5½	5
Yards in the ſail		486	442	448½	448½	335½	309¾	292⅛	292⅛	234	176	157½	106¼
Yards in the peek and clue-pieces		3	3	3	3	3	3	3	3	3	3	3	3
Yards in the bunt-lining		5	4½	5	5	4½	4	4	4	3½	3	2¾	2½
Totals		494	449½	456½	456½	343	316¾	299⅛	299⅛	240½	182	163¼	111¾
		Inches.											
Bolt-rope on the	head or ſtay	3½	3½	3½	3½	2¾	2½	2½	2½	2¼	2	2	2
	foot	2	2	2	2	1¾	1½	1½	1½	1½	1¼	1¼	1¼
	leeches	2	2	2	2	1¾	1½	1½	1½	1½	1¼	1¼	1¼

Gores.—Two cloths are generally gored on the bunt, and the head is gored 22 inches *per* cloth. If the nock-ſeam be ſubtracted from the depth of the leech, the remainder, divided by the number of cloths on the head, gives the depth of each gore.

Seams, tablings, cringles, &c. &c. as the mizen-ſtayſail.

MIZEN-TOPMAST-STAYSAIL, 9. *Plate* IV. *fig.* 1.

This ſail is quadrilateral, cut ſquare on the foot, and made of canvas N° 6, from 50 guns upwards; and N° 7, all under. It has a bunt, or fore-leech, three-ſevenths or one-third of the depth of the after-leech, and is hoiſted on the mizen-topmaſt-ſtay. The after-leech is one or two yards deeper than the mizen-topſail, and there are from two to five cloths more in the foot than the leech is yards in depth.

Guns		110	98	80	74	50	44	38	36	24	18	16
Tons		2165	1970	1900	1860	1200	1120	1040	920	600	425	360
Number of cloths in the	head	20	19	19	19	15	13½	13	13	11	9	9
	foot	21	20	20	20	16	14½	14	14	12	10	10
Depth in yards of the	after-leech	16	14½	16	15½	13	12½	12	12	10½	9½	9½
	fore-leech	7	6½	7	6½	4½	4½	4	4	3	3	3
Yards in the ſail		235¾	204¾	224¼	214½	135⅝	119	108	108	77⅝	59½	59½
Yards in the peek and clue-pieces		3	3	3	3	3	3	3	3	3	3	3
Yards in the bunt-lining		3½	3¼	3½	3¼	2¼	2¼	2	2	1½	1½	1½
Totals		242¼	211	230¾	220¾	140⅞	124¼	113	113	82⅛	64	64
		Inches.										
Bolt-rope on the	head	2¾	2¾	2½	2½	2¼	2¼	2¼	2¼	2	1¾	1¾
	foot	1¾	1¾	1½	1½	1½	1½	1½	1½	1¼	1¼	1¼
	leeches	1¾	1¾	1½	1½	1½	1½	1½	1½	1¼	1¼	1¼

Gores.—One cloth is generally gored on the bunt, and the head is gored 24 inches *per* cloth.

Seams, tablings, &c. &c. as the mizen-ſtayſail.

Middle Staysail, 3. *Plate* IV. *fig.* 1.

This ſail is quadrilateral, cut ſquare on the foot, and made of canvas N° 6, from 50 guns and upwards; and N° 7, all under. It has a ſquare bunt, or fore-leech, five-twelfths of the depth of the after-leech, and is hoiſted on the middle ſtayſail-ſtay. The leech is from four to ſeven yards deeper than the main-topgallant-ſail, and there are from ſix to eight cloths more in the foot than the after-leech is yards in depth. Sloops and brigs in the royal navy have only from one to three cloths more in the foot than yards in the depth of the after-leech. In merchant-ſhips, the leech is ſometimes of the ſame depth as the main-topgallant-ſail, but generally one to three yards more; and has from five to ten cloths more in the foot than yards in the depth of the after-leech.

Guns	110	98	80	74	50	44	38	36	24	18	16
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360
Number of cloths in the head	25	24	24	24	20	19	18	18	16	14	13
Number of cloths in the foot	25	24	24	24	20	19	18	18	16	14	13
Depth in yards of the after-leech,	17	16½	16½	16½	13	13	12	12	10¾	10	10
Depth in yards of the bunt or fore-leech	8	7½	7½	7½	5½	5½	5	5	4¼	4	4
Yards in the ſail	312½	288	288	288	185	175¾	153	153	120	98	91
Yards in the clue and peek-pieces	3	3	3	3	3	3	3	3	3	3	3
Yards in the bunt-lining	4	3¾	3¾	3¾	2¾	2¾	2½	2½	2⅛	2	2
Totals	319½	294¾	294¾	294¾	190¾	181½	158½	158½	125⅓	103	96
	Inches.										
Bolt-rope on the head or ſtay	3¼	3	3	3	2½	2½	2½	2½	2	1¾	1¾
Bolt-rope on the foot	1¾	1¾	1¾	1¾	1½	1½	1½	1½	1¼	1¼	1¼
Bolt-rope on the leeches	1¾	1¾	1¾	1¾	1½	1½	1½	1½	1¼	1¼	1¼

Gores. The head is gored 13½ inches *per* cloth. *Seams, tablings,* &c. &c. as the above.

Main-topgallant-staysail, 4. *Plate* IV. *fig.* 1.

This ſail is quadrilateral, cut ſquare on the foot, and made of canvas N° 7, from 50 guns and upwards, and all under of N° 8. It has a bunt from one-third to three-ſevenths of the depth of the after-leech, and is hoiſted on the main-topgallant-ſtayſail-ſtay. The after-leech is nearly of the ſame depth as the leech of the middle ſtayſail, and there are from three to ſix cloths more in the foot than the leech is yards in depth. In merchant-ſhips there are from two to eight cloths more in the foot than the leech is yards in depth.

Guns	110	98	80	74	50	44	38	36	24	18	16
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360
Number of cloths in the head or ſtay	22	21	21	21	17	16	15	15	13	12	12
Number of cloths in the foot	22	21	21	21	17	16	15	15	13	12	12
Depth in yards of the after-leech	16½	15½	15½	15½	13½	12½	12	12	10¼	9½	9½
Depth in yards of the bunt or fore-leech	7	6	6½	6½	4½	4½	4	4	2¾	2½	2½
Yards in the ſail	258½	225¾	231	231	153	136	120	120	84½	72	72
Yards in the clue and peek-pieces	3	3	3	3	3	3	3	3	3	3	3
Yards in the bunt-lining	3½	3	3¼	3¼	2¼	2¼	2	2	1½	1¼	1¼
Totals	265	231¾	237¼	237¼	158¼	141¼	125	125	89	76¼	76¼

Gores.—The head is gored 24 inches *per* yard. *Seams, tablings,* &c. &c. as the mizen-ſtayſail.

Driver-boomsail, 11. *Plate* IV. *fig.* 1.

This ſail is quadrilateral, made of canvas N° 6, and is occaſionally hoiſted to the gaff in light fair winds. The fore-leech laces to the mizen-maſt, and the inner part of the head to the gaff, and the outer part to a ſmall yard.

The fore-leech is nearly the ſame depth as the fore-leech of the mizen-courſe, and the after-leech is from two to four yards deeper than the after-leech of the mizen-courſe.

Guns - - - - -	110	98	80	74	50	44	38	36	24	18	16
Tons - - - - -	2165	1970	1900	1860	1200	1120	1040	920	600	425	360
Number of cloths in the head	25	22½	26	25½	21	22½	22	19	16	15	14
Number of cloths in the foot	31	28½	33	32½	27	28½	27	25	21	19	18
Depth in yards of the after-leech	22½	22½	24	24	19	23	23	22	18	16	16
Depth in yards of the fore-leech	10	10	11	11	8½	11½	11½	11	8	8	7¾
Yards in the ſail - - -	455	414⅜	515¾	507½	330	440	422⅝	363	222	204	189½
Yards in the clue-piece -	5	5	5	5	5	5	5	5	5	5	5
Yards in the tack, nock, and peek-pieces - -	3	3	3	3	3	3	3	3	3	3	3
Yards in the gores - -	56	52	65½	63	47	53	47	36	26	20½	18
Totals -	519	474⅜	589¼	578½	385	501	477⅝	407	256	232½	215½
	Inches.										
Bolt-rope on the head -	1¾	1¾	1¾	1¾	1½	1¾	1¾	1¾	1¼	1¼	1¼
Bolt-rope on the foot -	3	3	3	3	2½	3	3	2½	2¼	2	2
Bolt-rope on the leeches -	3	3	3	3	2½	3	3	2½	2¼	2	2

Gores.—The head, foot, and maſt-leech are cut with a roach or curve; and as no ſtrict rule can be laid down, the gores muſt be judiciouſly increaſed or diminiſhed, according to the ſweep required. The gore on the head is at the rate of from nine to twelve inches *per* cloth; and on the foot from ſix to nine inches *per* cloth. From four to ſix cloths next the clue are cut ſquare; or the fifth cloth next the clue being ſquare, the other four cloths are ſhort-gored, one inch *per* cloth to the clue. From four to ſix cloths are gored on the maſt-leech; and if the depth of the leech be divided by the number of cloths in it, the quotient will be the regular gore *per* cloth, which muſt be increaſed on the middle cloths, ſo as to form the ſweep required.

Seams are ſix inches broad for ſix feet up the ſail from the foot; and two inches broad for four feet down from the head: the remainder is one inch broad. The ſeams are to decreaſe gradually from one breadth to the other, but the ſelvage is not cut.

Tablings and *head-holes*, ſee ſecond proceſs in ſail-making.

Clue-lining is five yards in length, and the *tack*, *nock*, and *peek-pieces* are each one yard in length.

Slack-cloth.—Two inches ſhould be taken up with the rope in every yard on the maſt-leech, and one inch in every cloth in the foot.

Iron thimbles are generally ſpliced in the rope at the tack, nock, and peek, which are otherwiſe fitted as the mizen-courſe.

Clue likewiſe is ſometimes made with an iron thimble; but if not, it is made as deſcribed in the third proceſs of ſail-making.

Cringles for the lacing are made on the maſt-leech, thirty inches aſunder.

To find the quantity of canvas, refer to Rule 4.

Lower Main-studding-sails, 18. *Plate* IV. *fig.* 2.

Theſe ſails are quadrilateral, cut ſquare on the head, foot, and leeches, and made of canvas N° 6, from 50 guns upwards, and N° 7 all under. They are ſpread beyond the leeches of the main-courſe, their heads being bent to their reſpective yards.

Theſe ſails are two or three yards deeper than the main-courſe. In large ſhips, two cloths more, and in ſmall ſhips one cloth leſs, are allowed for the breadth, than the number of yards in the depth. But in merchant-ſhips, they are only one yard deeper, or of the ſame depth as the main-courſe; and from two to ſeven cloths are allowed in the foot more than the number of yards in the depth.

Guns	110	98	80	74	50	44	38	36	24	18	16	Brig.	Cutter.
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200	180
Number of cloths in the head	20	19	19	19	16	16	15	15	12	11	11		10
Number of cloths in the foot	20	19	19	19	16	16	15	15	12	11	11		13
Depth in yards	17½	17	18½	18½	15½	15½	15¼	15¼	13	11	11		20
Yards in the ſail	350	323	351½	351½	248	248	228¾	228¾	156	121	121		225
Yards in the reef-band	3½	3¼	3¼	3¼	2⅞	2⅞	2½	2½	2	1¾	1¾		
Yards in the clue and earing-pieces	1	1	1	1	1	1	1	1	1	1	1		2
Totals	354½	327¼	355¾	355¾	251⅞	251⅞	232¼	232¼	159	123¾	123¾		227
	Inches.												
Bolt-rope on the head	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1	1		1¼
Bolt-rope on the foot	2¼	2¼	2¼	2¼	2	2	1¾	1¾	1¾	1½	1½		1¾
Bolt-rope on the leeches	2¼	2¼	2¼	2¼	2	2	1¾	1¾	1¾	1½	1½		1¾

For *ſeams, tablings, reef* and *head-holes,* conſult the two firſt proceſſes in ſail-making.

A *reef-band,* ſix inches wide, is put on at one-eighth of the depth from the head, and a *reef-cringle* made at each end of the reef-band.

Clues, earings, and *ſewing on bolt-rope,* ſee third proceſs in ſail-making.

To find the quantity of canvas, refer to Rule 3.

Lower Fore-studding-sail, 15. *Plate* IV. *fig.* 2.

This ſail is like the former, except that it has no reef.

Guns	110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200
Number of cloths in the head	19	18	18	18	15	15	14	14	11	10	10	10
Number of cloths in the foot	19	18	18	18	15	15	14	14	11	10	10	10
Depth in yards	14½	14	15	15	13	13	13	13	11	10	10	9
Yards in the ſail	285½	252	270	270	195	195	182	182	121	100	100	90
Yards in the clue and earing-pieces	1	1	1	1	1	1	1	1	1	1	1	1
Totals	286½	253	271	271	196	196	183	183	122	101	101	91
Bolt-rope the ſame as main-lower-ſtudding-ſail.												

MAIN-TOPMAST-STUDDING-SAILS, 19. *Plate* IV. *fig.* 2.

Theſe ſails are quadrilateral, and made of the ſame canvas as the lower ſtudding-ſails. They are ſpread beyond the leeches of the main-topſail.

The depth is one yard more than the main-topſail, and two cloths leſs are allowed for the breadth of the foot than the number of yards in the depth of the leech.

Guns - - - - -	110	98	80	74	50	44	38	36	24	18	16	Brig.	Cutter
Tons - - - - -	2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200	180
Number of cloths in the head -	16	15	15	15	12	11	11	11	8	8	8	8	8
Number of cloths in the foot -	20	19	19	19	16	15	15	15	12	12	11	10	12
Depth in yards - - -	22	21	21¼	21¼	17¼	17½	17½	17¼	14½	13	12½	10½	15
Yards in the ſail - - - -	396	357	361¼	361¼	241½	227½	227½	224¼	145	130	118¾	94½	150
Yards in the reef-band - -	2¾	2½	2½	2½	2	1⅛	1⅛	1⅛	1½	1½	1½	1½	1½
Totals - -	398¾	359½	363¾	363¾	243½	229⅜	229⅜	226⅙	146½	131½	120¼	96	151½
Bolt-rope the ſame ſize as the main-lower-ſtudding-ſail.													

Gores.—Four cloths are gored on the outer leech in the royal navy, and from four to ſeven cloths in merchant-ſhips; and a regular gore is made on the head and foot of four inches *per* cloth, decreaſing to the outer earing at the head, and increaſing to the tack or outer clue at the foot.

For *ſeams*, *tablings*, *reef* and *head-holes*, refer to the ſecond proceſs of ſail-making.

Reef-band is put on the ſame as the main-lower-ſtudding-ſail.

Reef-cringle, one is made on the leeches, at each end of the reef-band, and a *downhawl-cringle* is made on the outer leech, about half the depth of the leech from the head.

Clue and *ſewing on the bolt-rope*, refer to the third proceſs in ſail-making.

To find the quantity of canvas, refer to Rule 1.

FORE-TOPMAST-STUDDING-SAILS, 16. *Plate* IV. *fig.* 2.

Theſe ſails are ſo much like the former, *reef-bands* excepted, as only to need the following dimenſions.

Guns - - - - -	110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons - - - - -	2165	1970	1900	1860	1200	1120	1040	920	600	425	360.	200
Number of cloths in the head	15	14	14	14	11	10	10	10	7	7	7	8
Number of cloths in the foot	19	18	18	18	15	14	14	14	11	11	10	10
Depth in yards - -	20	19	18½	18½	15¾	15¼	15¼	15¼	13	12	11½	10¼
Yards in the ſail - -	340	304	296	296	204¾	183	183	183	117	108	97¾	92¼
Bolt-rope the ſame ſize as the main-topmaſt-ſtudding-ſail.												

MAIN-TOPGALLANT-STUDDING-SAILS, 20. *Plate* IV. *fig.* 2.

Theſe ſails are quadrilateral, and made of canvas N° 7, from 50-gun ſhips upwards, and all under of N° 8. They are ſpread beyond the leeches of the main-topgallant-ſail, the heads being bent to their reſpective yards.

The depth is half a yard more than the main-topgallant-ſail in large ſhips: there are five cloths more allowed for the breadth of the foot than the number of yards in the depth; but in ſmall ſhips there are only three cloths more, or the ſame number of cloths in the breadth of the foot as yards in the depth of the leech.

Guns		110	98	80	74	50	44	38	36	24	18	16	Brig.	Cutter.
Tons		2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200	180
Number of cloths in the	head	12	11	11	11	8	8	8	8	6	5	5	6	5
	foot	16	15	15	15	11	11	11	11	8	8	8	8	8
Depth in yards		11	10½	10½	10½	8½	8¾	8¾	8¼	7¼	6¾	6½	6¼	7
Yards in the ſail		154	136½	136½	136½	80¾	83⅛	83⅛	78⅜	50¾	43⅞	40⅝	43¾	45½
		Inches.												
Bolt-rope on the	head	1¼	1¼	1¼	1¼	1	1	1	1	1	1	1	1	1
	foot	2	2	2	2	1½	1½	1½	1½	1¼	1¼	1¼	1¼	1¼
	leeches	2	2	2	2	1½	1½	1½	1½	1¼	1¼	1¼	1¼	1¼

Gores.—The outer leech is gored from two to four cloths, and a regular gore is made on the head and foot, from three to five inches *per* cloth, decreaſing to the outer earing at the head, and increaſing to the tack on the foot.

For *ſeams, tablings,* and *head-holes,* conſult the firſt and ſecond proceſſes in ſail-making.

Clues and *ſewing on the bolt-rope,* ſee the third proceſs in ſail-making.

To find the quantity of canvas, refer to Rule 1.

FORE-TOPGALLANT-STUDDING-SAIL, 17. *Plate* IV. *fig.* 2.

This ſail is ſo much like the former, that the dimenſions need only be added.

Guns		110	98	80	74	50	44	38	36	24	18	16	Brig.
Tons		2165	1970	1900	1860	1200	1120	1040	920	600	425	360	200
Number of cloths in the	head	11	10	10	10	7	7	7	7	5	4	4	6
	foot	15	14	14	14	10	10	10	10	7	7	7	8
Depth in yards		10	9¼	9½	9½	7¾	7¾	7¾	7¼	6½	6½	5¾	6¼
Yards in the ſail		130	111	114	114	65⅞	65⅞	65⅞	61⅝	39	35¾	31⅝	43¾
Bolt-rope the ſame ſize as the main-top-gallant-ſtudding-ſail.													

Number of Sails in a Suit for eight Months' Service in the Royal Navy.

Two main-courſes.
Two main-topſails.
One main-topgallant-ſail.
One main-royal.
Two fore-courſes.
Two fore-topſails.
Two fore-topgallant-ſails.
One fore-royal.
One ſpritſail-courſe.
One ſpritſail-topſail.
One driver-boom-ſail.
Two mizen-courſes.
Two mizen-topſails.
One mizen-topgallant-ſail.
One main-ſtayſail.
Two fore-ſtayſails.
One mizen-ſtayſail.
Two main-topmaſt-ſtayſails.
One middle-ſtayſail.
One main-topgallant-ſtayſail.
One fore-topmaſt-ſtayſail.
One royal-ſtayſail.
Two jibs.
One flying-jib.
One mizen-topmaſt-ſtayſail.
Two main-ſtudding-ſails.
Two main-topmaſt-ſtudding-ſails.
Two main-topgallant-ſtudding-ſails.
Two fore-ſtudding-ſails.
Two fore-topmaſt-ſtudding-ſails.
One fore-topgallant-ſtudding-ſail.
One ſmoke-ſail.

The Quality of Canvas of which the different Sails are made in the Merchant Service.

Canvas of N° 1.

Main and fore-courſes, and main and fore-ſtayſails, of Eaſt India ſhips.

Canvas of N° 2.

Main and fore-courſes, and main and fore-ſtayſails, of Weſt India ſhips.

Canvas of N° 3.

Mizen-courſe, main and fore-topſails, ſprit-courſe, and mizen-ſtayſails, of Eaſt India ſhips.

Canvas of N° 4.

Mizen-topſails of Eaſt India ſhips.

Canvas of N° 5.

Driver-boom-ſails of large Eaſt India ſhips, main-topmaſt-ſtayſails of Eaſt India ſhips, and mizen-topſails of Weſt India ſhips.

Canvas of N° 6.

Driver-boom-ſails of Eaſt and Weſt India ſhips, fore-topmaſt-ſtayſails of Eaſt India ſhips, main-topmaſt-ſtayſails of Weſt India ſhips, ſpritſail-topſails, and main and fore-topgallant-ſails, of large India ſhips.

Canvas of N° 7.

Main and fore-topgallant-ſails, middle-ſtayſails, flying-jibs, lower ſtudding-ſail, main-topmaſt-ſtudding-ſails, main-topgallant-ſtayſail, of Eaſt and Weſt India ſhips, and fore-topmaſt-ſtayſail of Weſt India ſhips.

Canvas of N° 8.

Mizen-topgallant-ſails, and main-topgallant-ſtudding-ſails, of Eaſt and Weſt India ſhips, mizen-topmaſt-ſtayſails and royals of Eaſt India ſhips, and ſmall flying-jibs of Eaſt India ſhips, if any.

As there can be no fixed dimenſions of merchant-ſhips' ſails, the ſame number of cloths, or nearly ſo, of ſhips of the ſame tonnage in the royal navy may be taken, and about ſeven-eighths of their depth.

Quantity and Quality of Canvas of a ſingle Suit of Sails for Eaſt and Weſt India Ships of London Canvas, thirty-eight Yards to the Bolt.

		N° 1.	N° 2.	N° 3.	N° 4.	N° 5.	N° 6.	N° 7.	N° 8.	Total Number of Yards.
	Tons.	Yards.	Yards.	Yards.	Yards.	Yards.	Yards.	Yards.	Yards.	Yards.
Eaſt India ſhips of	1200	1373	—	1788	306	744	835	1331	496	6873
	700	952½	—	1291	262	270	436	1384½	285½	4881½
Weſt India ſhips of	500	—	582½	714	—	151½	262¼	1010½	130	2851
	400	—	446	615	—	156	297	847½	156	2517½

A Table of the Quantity of Materials uſed in making a Suit of Sails for a Ship of each Rate for eight Months' Service in the Royal Navy, and a ſingle Suit of Sails for Eaſt and Weſt India Ships.

			Old Canvas.	Twine Line.				Bees-Wax.	Roſin.	Turpentine.	Tallow.	Train-Oil.	Tar.	Spun-yarn.	Yards of ſewing Twine.		Bolt-rope.		
				Extra, or fine.	Ordinary, or great.	Hambro.	Log.								Waxed.	Dipped.			
	Guns.	Tons.	Yards.	Lb.	Lb.	No.	No.	Lb.	Lb.	Lb.	Lb.	Gall.	Barr.	Cwt.			Cwt.	qr.	lb.
Royal Navy of	110		100	340	170	43	21	56	50	14	122	39	6½	5½	42164	21822	32	2	24
	98		96	330	160	39	20	51	46	13	116	36	6	4¼	39554	20631	28	3	26
	80		96	336	165	42	21	56	48	14	121	36	6	5	41936	21018	29	0	21
	74		96	330	165	42	21	56	48	14	121	36	6	5	41711	20671	28	3	24
	50		70	250	120	37	17	40	36	10	90	21	3½	3¼	31264	14908	16	3	21
	44		70	246	118	36	16	39	34	10	88	20	3	3	31923	14150	14	3	22
	38		65	238	114	36	16	38	34	10	86	18	3	3	31173	13913	14	1	9
	36		57	228	114	35	16	38	34	10	84	18	3	2¾	30197	13650	13	3	26
	24		48	165	104	30	10	28	24	7	63	12	2	2	22475	10920	9	2	27
	18		40	130	70	23	8	24	20	6	50	10	1¾	1¾	17836	9083	8	1	7
	16		36	126	64	21	7	22	19	6	48	9	1½	1½	17240	8575	6	0	12
Eaſt India ſhips	-	1200	40	135	70	22	5				30	6	3	2½		41623	9	3	25
		700	30	107	60	20	4				26	5	2½	2		31395	7	0	12
Weſt India ſhips	-	500	16	64	34	13	3				16	4	2	1¾		22919	4	3	17
		400	12	60	30	9	2				13	3	1½	1½		20815	3	0	25

Brig's Mainſail.—This ſail is quadrilateral, and made of canvas N° 5 or 6. The fore-leech is in depth from the under part of the hounds of the main-maſt to the boom, and the depth of the after-leech is about one-third more than the depth of the fore-leech. The head is bent to the gaff, and ſpreads within nine inches of the cleats on the outer end, the fore-leech to hoops encircling the maſt; and the foot is ſpread on the boom within eighteen inches of the ſheave-hole at the outer end.

Gores.—The head and maſt-leech are gored with a roach. The *regular* gore on the head is from four to five inches *per* cloth, and the roach or ſweep ſhould be cut after the ſail is ſewed together. The foot is gored with a circular ſweep, at the rate of five or ſeven inches *per* cloth, leaving four or five ſquare cloths at the clue; or at the rate of fourteen to eighteen inches *per* cloth for every cloth in the maſt-leech, which has five or ſix gored cloths in it.

Seams are three inches broad for eight feet up the ſail from the foot, and two inches broad for eight feet down from the head; the remainder is one inch broad, the ſeams decreaſing gradually from one breadth to the other.

For *tablings*, *head-holes*, and *holes* on maſt or fore-leech, conſult the firſt and ſecond proceſſes in ſail-making.

Reef-bands.—This ſail has three, ſix inches broad, parallel to the foot. The upper reef is nearly half way up the fore-leech, and the other at equal diſtances between that and the foot.

Reef-hanks are generally ſewed on the reef-band at each ſeam, on both ſides of the ſail.

Linings.—The after-leech is lined with one breadth of cloth from the clue to one yard above the upper reef-band; at the upper part half a yard of the lining is cut down, and the inner part is doubled under, or cut off. The peek-piece is one yard in length, and the fore-leech is lined with half a breadth of cloth; or ſometimes pieces one yard in length are put on at the tack and nock, and ſmall triangular pieces at each hole.

In ſewing on the bolt-rope, four inches of ſlack-cloth ſhould be taken up with the rope in every yard on the maſt-leech.

Large iron thimbles are ſtuck in the cringles at the *clue*, *peek*, *nock*, and *tack;* alſo in the cringles made on the leeches at the ends of the reef-bands: a luff-cringle is made on the maſt-leech, equidiſtant from the lower reef-band and the foot, which alſo has a thimble.

To find the quantity of canvas, refer to Rule 4.

Cutter's mainſail only differs from the former in the following particulars, *viz.* the canvas is of N° 1 or 2.

The *head* is generally wider, and the peeks leſs, for the cuſtoms, revenue, ſmuggling-cutters, and merchant ſervice, than thoſe of the royal navy. The former are better adapted for velocity, the latter for handſome appearance.

Reef-bands.—To have four in number, eight inches broad, and put on parallel to the foot; the upper reef is about three-ſevenths of the depth of the maſt-leech from the foot, and the others equally divided between that and the foot.

The *ſeams* are five inches broad for twelve feet up the ſail from the foot, and three inches broad for eight feet down from the head; the remainder to be one inch and a half broad.

Slack-cloth to be taken up in ſewing on the bolt-rope is four or five inches in every yard in the depth of the maſt-leech.

Smack's mainſail is ſimilar to the above, and made of canvas N° 1 or 2. The after-leech is about one-fifth deeper than the maſt-leech.

Gores about ten cloths on the maſt-leech. The head is gored at the rate of four or five inches *per* cloth; and the foot, with a curve, at the rate of twelve or fourteen inches *per* cloth, for every cloth in the maſt-leech, it having a ſhort gore to the clue on five or ſix cloths, at the rate of three or four inches *per* cloth.

Linings.—The maſt-leech is lined with a breadth of cloth from the tack to the nock; the after-leech the ſame as the brig, and the peek is lined with a cloth one yard and a half in length.

Reef-bands the ſame as the cutter; and ſometimes a

Balance-reef is put on acroſs the ſail, from the nock to the upper reef-cringle on the after-leech.

Bolt-rope on the maſt-leech ſhould be three inches; and on the head, foot, and after-leech, one inch and a half; and four inches of ſlack-cloth ſhould be taken up with the rope in every yard on the maſt-leech.

Sloop's mainſail is like the ſmack's, but the after-leech is only one-third deeper than the maſt-leech.

Cutter's Tryſail.—This ſail is occaſionally uſed, inſtead of the main-ſail, in ſtormy weather, and made of canvas N° 1 or 2. In the head of this ſail there are only two-fifths of the number of cloths that are in the head of the main-ſail: the maſt-leech is about three-fourths of the depth of the maſt-leech of the main-ſail, and the after-leech is one-ſixth deeper than the maſt-leech.

Gores.—Eight or ten cloths are gored on the maſt-leech. The foot is gored with a curve at the rate of five or ſeven inches *per* cloth from the tack, leaving two or three ſquare cloths at the clue.

Reef-bands.—This ſail has three reef-bands, ſix inches wide, parallel with the foot, the upper one is three-eighths the depth of the maſt-leech from the foot, and the others are at equal diſtances between the foot and the upper one.

Strengthening-bands.—Three are put on, of half a breadth of cloth, at equal diſtances between the upper reef-band and the head, which are ſeamed on and ſtuck along the middle.

Seams ſhould be five inches broad for twelve feet up from the foot, and three inches broad for eight feet down from the head; the remainder is one inch and a half broad, to decreaſe gradually from one breadth to the other.

Linings, *tablings*, *reef-hanks*, &c. &c. as the main-ſail.

Veſſels having one maſt only, have ſails peculiar to that claſs, which we ſhall briefly notice. Such are the

Square Sail, or *Croſs-Jack.*—This ſail is quadrilateral, made of canvas N° 6 or 7, cut ſquare on the head and leeches: the head is bent to the croſs-jack yard, and extends within ſix inches of the cleats on the yard-arms. The depth of the ſail is about four-fifths of the depth of the fore-leech of the main-ſail.

Gores.—The foot is gored one inch or more *per* cloth, increaſing from the middle to each clue; having two or three ſquare cloths left in the middle.

Seams, *tablings*, and *head-holes*, as other ſails of the ſame ſize.

Reef-bands.—It has two, four inches broad; the lower one is at one-ſixth of the depth of the ſail from the foot, and parallel thereto; and the upper reef is at the ſame diſtance from the head.

Reef-hanks are ſewed on the reef-bands, as on the main-ſail.

Linings. — One yard of cloth is put on at each clue, half a yard at each earing, and half a yard againſt every cringle on the leeches. Theſe linings are all put on the aft-ſide.

Cringle.—One is made at each end of the upper reef-band; and three bowline-cringles are made on each leech; the upper bowline-cringle is made on the middle of the leech, and the others are equally diſtant from that and the clue.

Clues are ſometimes marled on; and, for this purpoſe, ten marline-holes are made each way from the clues.

Bolt-rope on the foot and leeches, ſhould be one inch and a half or two inches in circumference; and on the head, one inch, or one inch and a half.

Slack-cloth, when ſewing on the bolt-rope, one inch ſhould be taken up in every cloth in the head and foot.

Topſail is ſimilar to other topſails made of canvas N° 6 or 7. The depth in the middle is one-third of the depth of the croſs-jack.

Gores.—From one to two cloths are gored on the leeches, and the foot is hollowed from one-third to half of the depth of the ſail in the middle (to clear the jib-ſtay), or at the rate of ten to twelve inches *per* cloth from the middle to each clue, the middle cloth being left ſquare.

Reef-band of four inches broad is put on at one-third of the depth of the middle cloth from the head.

Bowline, cringles, &c. &c. as the ſquare ſail.

Gaff-topſail.—This ſail is quadrilateral, and made of canvas N° 8. The fore-leech is four-fifths of the depth of the maſt-leech of the main-ſail. This ſail is bent to the topgallant-maſt, with a ſmall yard on the head above the main-ſail, and is only uſed in light winds.

The foot has nearly the ſame number of cloths as in the head of the main-ſail, and nearly three-fourths of the number of cloths are gored on the maſt-leech.

Gores at the foot are the ſame as the gores on the head of the main-ſail, that the foot may anſwer to the peek of the main-ſail, the head-gores being the ſame.

Bolt-rope on the maſt-leech ſhould be one inch and a half; and on the head and foot and after-leech, one inch.

Saveall-topſail.—This ſail is quadrilateral, made of canvas N° 8, cut ſquare on the head and foot. The head is extended by haliards faſtened to the earing-cringles, under the hollow of the foot of the top-ſail, its foot ſpreading the croſs-jack yard between the clues of the topſail. It is ſeldom uſed but in light winds.

Gores.—Two or three cloths are left ſquare on the head, and the reſt are gored for the leeches.

Bolt-rope round the ſail is one inch in circumference.

Ringtail-ſail.—This ſail is quadrilateral, made of canvas N° 7 or 8. It is occaſionally hoiſted abaft the after-leech of the main-ſail, to which the fore-leech is made to anſwer. The head is bent to a ſmall yard at the outer end of the gaff; and the foot on the boom, which is prolonged by a piece laſhed to the outer end. The number of cloths in the foot is three-eighths the number of cloths in the foot of the main-ſail; and the head has three-eighths of the number of cloths in the foot.

Gores.—The head has a regular gore, the ſame as the main-ſail, and the foot is gored with a gore of one inch *per* cloth, increaſing to the tack.

Bolt-rope on the head, foot, and after-leech, ſhould be one inch in circumference; and on the fore-leech one inch and a half.

A ſail of this kind, but more ſquare, is ſometimes ſpread in light winds, on a ſmall maſt, erected at the taffarel of ſome veſſels; the foot being ſpread out on a boom that projects horizontally from the ſtern.

Fore-ſail.—This ſail is triangular, made of canvas N° 1 or 2; and bends with hanks to the ſtay next before the maſt. The depth of the leech is nearly the ſame depth as the maſt-leech of the main-ſail, and there are as many cloths in the foot as will bring it clear of the maſt.

Gores.—The depth of the hoiſt, or fore-part, divided by the number of gored cloths, gives the length of each gore. The foot has a ſhort gore of one inch or more *per* cloth, increaſing to the clue; leaving one or two ſquare cloths at the tack.

Linings, &c.—The leech-cloth is left three-quarters of a yard longer than the depth of the leech for the head-lining, and the cloth at the tack is ſo cut as to fall to the foot and form its own lining; it has one cloth at the clue, to run up above the reef-bands, the ſame as the main-ſail.

Seams ſhould be three or four inches broad at the foot, decreaſing to one inch at the hoiſt.

Reef-bands.—To have two four inches wide, are generally put on at one-eighth of the depth of the ſail aſunder, the lower one being at that diſtance from the foot. Sometimes a bonnet is uſed inſtead of the lower reef.

Reef-hanks are generally ſewed on, inſtead of uſing reef-points.

Bolt-rope on the ſtay to be two and a half or three inches in circumference, and on the foot and leech one inch and a half or two inches.

Slack-cloth.—Three or four inches of ſlack-cloth ſhould be taken up with the rope in every yard on the hoiſt.

Head-ſtick.—The hoiſt-rope is put through the holes in the head-ſtick, then ſerved with ſpun-yarn, and ſpliced into the leech-rope. The middle of the head-ſtick is then ſeized to the head of the ſail, and a thimble is ſeized in the bight of the rope.

Thimbles are generally ſtuck in the cringles at the tack and clue.

Jib.—This ſail is triangular, made of canvas N° 2 to 6, and is ſometimes bent with hanks to a ſtay before the fore-ſail, or hoiſts with haliards without a ſtay. The number of cloths in the foot is two-thirds the number in the foot of the main-ſail, or wide enough to ſpread the bowſprit, and the depth of the leech is about one yard for every cloth in the foot.

Gores.—The foot is gored with a ſweep, at the rate of from four, five, to ſix inches *per* cloth, increaſing to the clue, leaving one ſquare cloth at the tack; ſometimes the fourth and fifth cloths from the tack are left ſquare, and a ſhort gore from thence to the tack of one inch *per* cloth.

Linings.—The leech-cloth is left three-quarters of a yard longer than the depth of the leech, for the head-lining and tabling; the cloth at the tack is cut ſo as to fall to the foot and form its own lining; and the clue-piece is two yards in length.

Seams on the foot ſhould be three or four inches broad, and ſhould decreaſe to one full inch on the hoiſt.

Bolt-rope, if hoiſted on a ſtay, the rope on the hoiſt ſhould be two inches and a half or three inches in circumference; but if not hoiſted on a ſtay, the rope on the hoiſt ſhould be five inches. The rope on the foot and leeches ſhould be two inches and a half.

Slack-cloth.—Four or five inches of ſlack-cloth ſhould be taken up in every yard in the hoiſt, when roping, and the rope on the hoiſt put through the holes in the head-ſtick, and completed as the fore-ſail.

Obſerve, the *ſecond jib* is ſeven-eighths the ſize of the *firſt jib*, and the *third jib* is three-fourths the ſize of the *firſt jib;* but they are both made like the *firſt jib*, as above.

Storm Jib.—This ſail is triangular, and made of canvas N° 1 or 2. It is two-thirds the ſize of the firſt jib, and is uſed in ſtormy weather.

Gores.—The foot is gored at the rate of five or ſix inches *per* cloth, increaſing to the clue.

Seams.—To be three or four inches broad at the foot, and decreaſed to one inch on the hoiſt.

Lining.—The clue is lined with a breadth of cloth one yard and a half in length; a piece one yard long is put on the peek, and the cloth at the tack is ſo cut as to fall to the foot, and form its own lining.

Strengthening-bands, of half a breadth of cloth, are put on parallel to the foot, at one-third of the depth of the ſail aſunder.

Bolt-rope on the hoiſt ſhould be five inches in circumference, and on the foot and leech two inches and a half.

Slack-cloth.—Four inches of ſlack-cloth ſhould be taken up in every yard on the hoiſt when roping.

Flying Jib.—This ſail is triangular, made of canvas N° 6, and is two-thirds the ſize of the *firſt* jib. It is the foremoſt ſail, and hoiſts without a ſtay.

Gores.—The foot is gored with a ſweep, at the rate of eight or nine inches *per* cloth, increaſing to the clue.

The *piece* at the *clue* is one yard and a half in length; that at the *peek* is one yard; and the cloth at the tack is ſo cut as to fall to the foot.

Seams ſhould be two inches and a half broad at the foot, and decreaſe to one inch at the hoiſt.

Bolt-rope on the hoiſt ſhould be three inches and a half in circumference; on the foot two inches, and on the leech one inch.

Slack-cloth.—Three inches of ſlack-cloth ſhould be taken up with the rope in every yard in the hoiſt.

Thimbles are ſometimes ſpliced in the tack and peek.

Boat Sails.

Settee-ſail.—This ſail is quadrilateral, made of canvas N° 7 or 8. The head is bent to the latteen-yard, and extends within ſix inches of the cleats at the arms.

Gores.—The cloth at the tack is cut goring to the nock, and the bunt is the depth of the reef, which is one-fifth of the depth of the leech. The depth of the leech is five-ſixths of the length of the head. The length of the head, divided by the number of cloths in it, gives the length of each gore. The foot is cut with a curve, after the ſail is ſewed together.

Head-holes and *reef-hanks* as other ſails, with ſmall *cringles* made on the leech at the *reef, nock,* and *peek.*

Lug-ſail.—This ſail is quadrilateral, made of canvas N° 7 or 8. The head is bent to a yard, and extends within four inches of the arm-cleats. The fore-leech is as deep as the length of the head, and the after-leech is nearly one-half more in depth than the fore-leech.

Gores.—Two or three cloths are gored on the fore-leech, and an even gore of ſix inches *per* cloth is made on the head. The foot is gored with a curve; the cloth at the clue being cut with a three-inch ſhort gore; the next cloth is ſquare, and the cloths from thence to the tack are gored at the rate of ſix or eight inches *per* cloth.

Reefs.—Two in number parallel to the foot; the upper reef is half way up the fore-leech, and the other is equally diſtant from that and the foot. Sometimes *reef-bands,* three or four inches broad, are put on at the reefs; but when theſe are not uſed, holes are made one in every ſeam, for *points* or hanks are ſewed on inſtead.

Holes.—Two ſmall ones are made in each cloth in the head.

Cringles are made on the leeches at each reef; *earing-cringles* are made at the nock and peek; and ten or twelve ſtrands in the length of the bolt-rope are ſeized at the tack and clue.

Latteen-ſail.—This ſail is triangular, made of canvas N° 7 or 8. The head is bent to the latteen-yard, extending within ſix inches of the cleats at the arms.

Gores.—The length of the head, divided by the number of cloths, gives the length of the gore of each cloth. The foot is cut ſquare.

Two ſmall *holes* are made in each cloth along the head, through which it is laced on the yard.

Bolt-ropes for this and the two foregoing ſails are alike; that is, one inch on the head, and one inch and a half on the foot and leeches.

Obſerve, if this ſail is bent to the maſt the head becomes the fore-leech, and it is called a *ſhoulder-of-mutton ſail.* But if to the maſt and a top-maſt, which ſlides up and down, a *ſliding-gunter ſail.*

Spritſails.—Theſe ſails are quadrilateral, made of canvas N° 7 or 8. The fore-leeches are laced to their reſpective maſts; and their heads are elevated and extended by a ſprit, or ſmall yard, that croſſes the ſail diagonally from the lower part of the maſt to the peek.

The *fore-leech* is nearly the depth of the maſt, ſo as to clear the gunwale a few inches.

Gores.—The main and fore ſpritſails have one or two cloths gored at the fore-leech. The heads of them have a regular gore of twelve or fourteen inches *per* cloth, and the foot is cut ſquare. The fore-leech and foot of a mizen-ſpritſail are cut ſquare, but the head has a regular gore of eleven inches *per* cloth.

Holes are made on the fore-leeches about one yard aſunder for lacing them to the maſt, and the mizen three-quarters of a yard. Holes are alſo made at each ſeam acroſs the ſail of main and fore for a reef, at one-fifth the depth of the after-leech from the foot for the points or reef-hanks, inſtead of being ſewed to the ſail.

Small bights are made at the tack, nock, peek, and clue.

Fore-ſail and Jib.—Proportionally the ſame as the laſt mentioned.

SAIL-*Loft,* a room or ſhed wherein ſails are made.

SAIL-*Room,* in *Ship-Building,* an apartment or place of reſerve, built between decks, upon the lower deck or orlop, to contain the ſpare ſails.

SAILS alſo denote the vanes of wind-mills; or the arms or flights, by which the wind has its effect on them.

Theſe are either horizontal or perpendicular. See WIND-MILL.

SAILS, in *Falconry,* denote the wings of a hawk.

SAILERSHAUSEN, in *Geography,* a town of the duchy of Wurzburg; nine miles E.S.E. of Schweinfurt.

SAILING, in a general ſenſe, denotes the movement by which a veſſel is wafted along the ſurface of the water, by the action of the wind upon her ſails.

For the method of regulating this movement by the proper adjuſtment of the ſails and rudder, ſee SAILING in a *more confined ſenſe, infra.*

SAILING is alſo uſed for the art, or act, of navigating; or of determining all the caſes of a ſhip's motion, by means of ſea-charts. And as theſe charts are conſtructed either on the ſuppoſition that the earth is a large extended flat ſurface, whence we obtain thoſe that are called plane charts; or on the ſuppoſition that the earth is a ſphere, whence we derive globular charts; ſailing may be diſtinguiſhed into two general kinds, *viz. plane,* or *plain,* and *globular* ſailing.

SAILING, *Plain,* is that which is performed by means of a plain chart; in which caſe, as is evident from the conſtruction of the chart, the meridians are conſidered as parallel lines; the parallels of latitude are at right angles to the meridians; the lengths of the degrees on the meridians, equator, and parallels of latitude, are every where equal; and the degrees of longitude are reckoned on the parallels of latitude, as well as on the equator. We ſhall here ſuppoſe, that the terms *courſe*, *departure*, *diſtance*, *rhumb-line*, &c. are underſtood. And obſerve, that if a ſhip ſails either due north or ſouth, ſhe ſails on a meridian, makes no departure, and her diſtance and difference of latitude are the ſame: and if a ſhip ſails either due eaſt or weſt, ſhe runs on a parallel of latitude, makes no difference of latitude, and her departure and diſtance are the ſame. See RIGHT *Sailing*.

It is to be obſerved farther, that the difference of latitude and departure always make the legs of a right-angled triangle, whoſe hypothenuſe is the diſtance the ſhip has ſailed. See PLAIN *Sailing*.

It is obvious from the conſideration of ſuch a triangle, that when the courſe is 45 degrees, or 4 points, the difference of latitude and departure are equal; when the courſe is leſs than 45 degrees, the difference of latitude is greater than the departure; but when the courſe is greater than 45 degrees, the departure is greater than the difference of latitude.

In *Plate* II. *Navigation*, *fig*. 5. let the circle F H F H repreſent the horizon of the place A, whence the ſhip ſails; A C the rhumb on which ſhe ſails, whether it be in the N.E. or N.W. S.E. or S.W. quarters of the horizon; and C the place at which ſhe arrives: then H H repreſents the parallel of latitude from which ſhe ſailed, and C C the parallel of latitude at which ſhe arrives: ſo that A D is the difference of latitude, D C the departure, A C the diſtance ſailed, D A C the angle of the courſe, and D C A the complement of the courſe. From this conſtruction it appears, that the difference of latitude, departure, and diſtance, form the ſides of a right-angled triangle, whoſe angles are the courſe, its complement, and the right angle: and, therefore, if of theſe four things, *viz*. the courſe, diſtance, difference of latitude, and departure, any two of them be given, the reſt may be found by plane trigonometry.

For the ready working of any ſingle courſe, there is a table, called a *traverſe* table, uſually annexed to treatiſes of navigation, which is ſo contrived, that by finding in it the given courſe, and a diſtance not exceeding 100 miles, the difference of latitude and departure are had by inſpection. And this table will ſerve for greater diſtances, by taking their halves, thirds, fourths, &c. and doubling, trebling, quadrupling, &c. the difference of latitude and departure found to thoſe parts of the diſtance.

From the figure above referred to, in which A E, A F, or A H, repreſents the radius of the tables, E B the ſine of the courſe, G F its tangent, and A G its ſecant, A B the ſine of the complement of the courſe, H I its tangent, and A I its ſecant, we may deduce all the proportions, or canons, as they are uſually called by mariners, that can ariſe in plain ſailing; becauſe the triangles A D C and A B E, A D C and A F G, are evidently ſimilar. Theſe proportions are exhibited in the following table.

Caſe.	Given.	Required.	Solutions.
1	< A, A C, *i. e.* courſe and diſtance.	A D, D C, *i. e.* diff. of lat. and departure.	A E : A B :: A C : A D, *i. e.* rad. : diſt. :: coſine of courſe : diff. of lat. A E : E B :: A C : D C, *i. e.* rad. : diſt. :: ſine of courſe : departure.
2	< A, A D, *i. e.* courſe and diff. of lat.	A C, D C, *i. e.* diſtance and departure.	A B : A E :: A D : A C, *i. e.* coſ. courſe : diff. lat. :: rad. : diſtance. A B : B E :: A D : D C, *i. e.* coſ. courſe : diff. lat. :: ſine courſe : departure.
3	< A, D C, *i. e.* courſe and departure.	A C, A D, *i. e.* diſtance and diff. of lat.	B E : A E :: D C : A C, *i. e.* ſine courſe : departure :: rad. : diſtance. B E : A B :: D C : A D, *i. e.* ſine courſe : departure :: coſ. courſe : diff. lat.
4	A D, A C, *i. e.* diſtance and diff. of lat.	< A, D C, *i. e.* courſe and departure.	A C : A D :: A E : A B, *i. e.* diſtance : rad. :: diff. lat. : coſ. courſe. A E : E B :: A C : D C, *i. e.* rad. : diſtance :: ſine courſe : departure.
5	A C, D C, *i. e.* diſtance and departure.	< A, A D, *i. e.* courſe and diff. of lat.	A C : D C :: A E : E B, *i. e.* diſtance : rad. :: departure : ſine courſe. A E : A B :: A C : A D, *i. e.* rad. : diſtance :: coſ. courſe : diff. lat.
6	A D, D C, *i. e.* diff. of lat. and departure.	< A, A C, *i. e.* courſe and diſtance.	A D : D C :: A F : F G, *i. e.* diff. lat. : departure :: rad. : tangent courſe. B E : A E :: D C : A C, *i. e.* ſine courſe : departure :: rad. : diſtance.

We ſhall now give ſome examples of the application of theſe canons to the ſolution of ſingle courſes.

Caſe 1.—A ſhip from the latitude 47° 30′ N. has ſailed S.W. by S. 98 miles, what latitude is ſhe in, and what departure has ſhe made?

By the traverſe table.—In the column of the courſe, *viz*. 3 points, againſt the diſtance 98, ſtand 81.5 miles for the diff. of lat. and 54.45 miles for the departure.

By conſtruction.—Draw the meridian A D (*fig*. 6.) and make the quadrant A *m c p*. Make the arc *m c* equal to 3 points, and through *c* draw A B = 98 miles. Draw B D parallel to *p* A; and A D, the diff. of lat. meaſures about $81\frac{1}{2}$ miles, and B D, the departure, about 54.4 miles.

By computation.—For the diff. of lat. rad. : diſt. :: coſ. courſe : diff. lat. *i. e.* 10.00000 : 1.99123 (log. of 98) :: 9.91985 (coſ. 33° 45′) : 1.01108, the log. of 81.48 miles. For the departure : rad. : diſt. :: ſin. courſe : departure, *i. e.* 10.00000 : 1.99123 :: 9.74474 (ſine of 33° 45′) : 1.73597, the log. of 54.45 miles.

By Gunter's ſcale.—The extent from radius, or 8 points, to 3 points, on the line of ſine rhumbs, applied to the line of numbers, will reach from 98, in either interval, to

54.4.

54.4. And the extent from 8 points to 5 points, among the rhumbs, reaches from 98 to 81.5 on the line of numbers.

Caſe 2.—A ſhip has ſailed S.E. by S. from the lat. 47° 30′ N. to the lat. 46° 8′ N. What diſtance has ſhe run, and what departure has ſhe made?

By the traverſe table.—The diff. of lat. is equal to 47° 30′ − 46° 8′ = 82′. Under the courſe or 3 points in the column of lat. find the neareſt number to 82, which is 82.3, and the correſponding departure is 55, and the diſtance 99 miles.

By conſtruction.—Deſcribe the quadrant A mcp (*fig.* 7.); make mc = 3 points, and produce A m, till A D becomes = 82 miles; draw D B parallel to A p, meeting the line A B, drawn through c, in B: and the diſtance A B meaſures about 99 miles, and the departure D B meaſures about 55 miles.

By computation.—For the diſtance : coſ. courſe : diff. lat. :: rad. : diſt. *i. e.* 9.91985 (coſ. 33° 45′) : 1.91381 (log. of 82) :: 10.00000 : 1.99396, the log. of 98.62 miles. For the departure : coſ. courſe : diff. lat. :: ſine courſe : departure; *i. e.* 9.91985 : 1.91381 :: 9.74474 : 1.73871, the log. of 54.79 miles.

By Gunter's ſcale.—The extent from 5 points to 8 points, in the line of ſine rhumbs, will reach on the line of numbers, from 82 to 99. And the extent from 5 points to 3, on the ſine rhumbs, will reach from 82 to 55 on the line of numbers.

Caſe 3.—A ſhip from lat. 47° 30′ N. ſailing N.W. by W. finds ſhe has made 82 miles of departure. What is her diſtance run, and what latitude is ſhe now in?

By the traverſe table.—The courſe being 5 points, over that, in the column of departure, the neareſt number to 82 is 82.3: and the correſponding diff. of lat. is 55 miles, and the diſtance is 99 miles.

By conſtruction.—Deſcribe the quadrantal arc A mcp (*fig.* 8.); make mc = 5 points, and produce A p, till A b becomes = 82 miles; through b draw b B parallel to A m, meeting the line A B, drawn through c, in B; and through B draw B D, parallel to b A, meeting A m produced in D: then the diſtance A B meaſures about 99 miles, and the diff. of lat. A D meaſures about 55 miles.

By computation.—For the diſtance : ſine of courſe : dep. :: rad. : diſt. *i. e.* 9.91985 (ſine of 56° 15′) : 1.91381 (log. of 82) :: 10.00000 : 1.99396 the log. of 98.62, the diſtance. For the diff. of lat. ſine courſe : dep. :: coſ. courſe : diff. lat. *i. e.* 9.91985 : 1.91381 :: 9.74474 (coſ. 56° 15′) : 1.73870 the log. of 54.79 the diff. of lat.

By Gunter's ſcale.—The extent from 5 points to 8 points, on the line of ſine rhumbs, will reach, on the line of numbers, from 82 to 99. And the extent from 5 points to 3 points, on the line of ſine rhumbs, will reach from 82 to 55 on the line of numbers.

Caſe 4.—A ſhip from lat. 47° 20′ N. ſails between the north and eaſt 98 miles, and is arrived in lat. 48° 42′ N. What courſe did ſhe ſteer, and what departure has ſhe made?

By the traverſe table.—The diff. of lat. is 48° 42′ − 47° 20′ = 82′. Againſt the diſtance 98 ſtands the lat. 81.95, the neareſt to 82, and the correſponding departure is 53.73 miles, and the courſe is 33° 15′.

By conſtruction.—Deſcribe the quadrant A mcp (*fig.* 9.); produce A m, till A D becomes = 82; through D draw D B parallel to A p, and with the diſtance 98 interſect D B in B: the departure will be found to meaſure 53 miles, and the courſe D A B is meaſured by the arc mc of about 33°.

By computation.—For the courſe : diſt. : rad. :: diff. lat. : coſ. courſe, *i. e.* 1.99123 (log. of 98) : 10.00000 :: 1.91381 (log. of 82) : 9.92258, the coſine of 33° 13′. For the departure : rad. : diſt. :: ſine courſe : departure, *i. e.* 10.00000 : 1.99123 :: 9.73863 (ſine of 33° 13′) : 1.72986 log. of 53.69.

By Gunter's ſcale.—The extent from 98 to 82, on the line of numbers, will reach, on the line of ſines, from 90 to about 57°. And the extent from 90° to 33°, on the line of ſines, will reach, on the line of numbers, from 98 to about 53 miles. Thus it appears that the courſe is N. 33° 15′ E. or N.E. by N. nearly, and the departure is 53.69 miles to the eaſtward.

Caſe 5.—From lat. 50° 13′ N. a ſhip, in ſailing between the ſouth and eaſt 98 miles, makes her departure 82 miles. What courſe did ſhe keep, and what latitude is ſhe arrived at?

By the traverſe table.—Againſt the diſtance 98 ſtands 81.95, in the column departure, the neareſt to 82, and here the diff. of lat. is 53.73 miles, and the courſe is 56° 45′.

By conſtruction.—Deſcribe the quadrant A mcp (*fig.* 10.); produce A p till A b = 82; and through b draw b B parallel to A m; from A, with the diſtance 98, cut b B in B; through B draw B D parallel to A b, meeting A m produced in D: and the diff. lat. A D meaſures about 53 miles, and the courſe D A B, meaſured by the arc mc, of about 57°.

By computation.—For the courſe : diſt. : rad. :: dep. : ſine courſe, *i. e.* 1.99123 : 10.00000 :: 1.91381 : 9.92258 ſine of 56° 47′. For the diff. lat. rad. : diſt. :: coſ. courſe : dif. lat. *i. e.* 10.00000 : 1.99123 :: 9.73863 : 1.72986 the log. of 53.69; ſo that the lat. arrived at is 50° 13′ N. − 54′ = 49° 19′ N.

By Gunter's ſcale.—The extent from 98 to 82, on the line of numbers, will reach on the line of ſines from 90° to about 57°: and the extent from 90° to 33°, on the line of ſines, will reach from 98 to about 53 miles on the line of numbers. So that the courſe is S. 56° 47′ E. or S. E. by E. nearly, and the latitude arrived in is 49° 19′ N.

Caſe 6.—A ſhip from lat. 48° 32′ N. is arrived in lat. 49° 54′ N. and her departure is 54 miles W. What courſe did ſhe ſteer, and what the direct diſtance run?

By the traverſe table.—The diff. lat. = 49° 54′ − 48° 32′ = 82 m. The numbers in the table neareſt to 82 and 54 are 81.95 and 53.73; and the diſtance anſwering to theſe is 98 miles, and the courſe is 33° 15′.

By conſtruction.—Deſcribe the quadrant A mcp (*fig.* 11.), and produce A m, till A D = 82; through D draw D B, parallel to A p, and = 54, and draw A B. Then the diſtance A B meaſures about 98 miles, and the courſe D A B is meaſured by the arc mc of about 33°.

By computation.—For the courſe : diff. lat. : dep. :: rad. : tang. courſe, *i. e.* 1.91381 (log. of 82) : 1.73239 (log. of 54) :: 10.00000 : 9.81858 tang. of 33° 22′. For the diſtance : ſine courſe : dep. :: rad. diſt. *i. e.* 9.74036 (ſine of 33° 22′) : 1.73239 :: 10.00000 : 1.99203 the log. of 98.18 miles.

By Gunter's ſcale.—The extent from 82 to 54, on the line of numbers, will reach, on the line of tangents, from 45° to about 33°. And the extent from about 33° to 90°, on the line of ſines, will reach, on the line of numbers, from 54 m. to about 98 m. The courſe is, therefore, N. 33° 22′ W. or N. W. by N. nearly, and the diſtance 98.18 miles.

For the method of conſtructing or reſolving compound courſes, ſee Traverse.

Sailing, *Oblique.* In the preceding examples, the bearing

ing and diſtances of places were determined by the ſolution of right-angled triangles: but at ſea there are many caſes in which only oblique poſitions can be obſerved; and, therefore, it may not be improper to give a few examples of the ſolution of ſuch caſes.

Ex. 1.—Two ſhips, A and B (*Plate* II. *Navigation, fig.* 12.) ſail from two iſlands, bearing the one from the other N.E. and S.W. their diſtance being 76 miles; A ſails S. by E. and B runs E. by S.; at laſt they meet. How far has each ſailed?

Conſtruction.—With the chord of 60° deſcribe a circle repreſenting the horizon of one of the places ſailed from; *e. gr.* of A, the northern; draw the meridian N S, and, at right angles to it, draw the parallel of latitude E W. In this circle lay off the S.W. rhumb S *o*, the S. by E. rhumb S *p*, and the E. by S., S *m*; through *o* draw A B equal to 76 miles; through B draw B C parallel to A *m*, meeting A C drawn through *p*. Then A and B repreſent the places ſailed from; A C and B C the diſtances and courſes, when properly compared with the meridian, the ſhips had ſailed when they met at C: and theſe diſtances may be meaſured from the ſcale A B was taken from.

Computation.—In the triangle A B C there are given one ſide A B, and all the angles, to find the other ſides. Thus, $< A = 5$ points $= 56° 15'$; for $S o + S p = 5$ points; $< B = 5$ points $= 56° 15'$; for B C is parallel to A *m*; and $< B = B A n = 5$ points; and $< C = C A m = 6$ points $= 67° 30'$. Then by a well-known theorem in trigonometry, ſine of C : A B :: ſine of A : B C; *i. e.* ſine of 67° 30' : 76 m. :: ſine of 56° 15' : 68.4 m. And ſince the angle B = the angle A, A C = B C; conſequently A ſails S. by E. 68.4 miles, and B ſails E. by S. 68.4 miles.

Ex. 2.—At noon a headland bore N.W. by W. then ſailing N.N.E. 5 miles an hour, we anchored at nine in the evening, in a creek, 18 leagues diſtant from the headland. Required its diſtance at noon, and bearing from the creek?

Conſtruction.—Having deſcribed the horizon, and drawn the meridian and parallel, in the meridian take any point A (*fig.* 13.) for the ſhip's place at firſt; draw the N.W. by W. and N.N.E. rhumbs, and parallel to them draw A B, A C. Make A C = 45 miles = 9 h. × 5 m. and from C with 54 m. (= 18 leag. × 3) cut A B in B: then B is the headland, and C the creek.

Computation.—In the triangle A B C we have the ſide A C = 45 m. the ſide C B = 54 m. and $< A = 78° 45'$ = 5 points for N.W. by W. + 2 points for N.N.E. whence B C : S. A :: A C : S. B, *i. e.* 54 : S. 78° 45' :: 45 : S. B = 54° 49'; and the angle C = 46° 26'; and in the ſame manner we ſhall have A B = 39.9 miles; conſequently $< o a n - < n a w = < o a w = 21° 4'$, which taken from 90° leaves 68° 56'. Hence the headland's diſtance at noon is 39.9 miles, and its bearing from the creek is S. 68° 56' W. or W.S.W. ½ W. nearly.

Ex. 3.—A merchant-ſhip meeting with a ſhip of war, which had ſailed S.E. by E. 39 leagues from the latitude of 45° 30' N. informed them, that ſhe had been plundered the day before, in the ſame latitude; and had ſince run 67 leagues on a direct courſe, between the ſouth and weſt; and that the pirates were cruiſing about the place where they robbed her. What courſe muſt the man of war ſteer to come up with them?

Suppoſe A (*fig.* 14.) the place the man of war ſailed from, B the place where the merchant-man was robbed, C the place where they met; then the man of war muſt ſail along C B to meet the pirates, which courſe will be ſhewn by *c n* drawn parallel to C B. Here are two given ſides, and an angle oppoſed to one of them, to find the angle B oppoſite to the other ſide A C. C B : S. < A :: A C : S. < B; *i. e.* 67 leagues : S. 33° 45' :: 30 leagues : S. 18° 52'; conſequently the courſe the man of war muſt ſteer is N. 71° 8' E. for $n c B = C B c$, and $90° - n c B = N c n$.

Ex. 4.—Coming within ſight of two headlands, bearing north and ſouth of each other; the ſouthern one bore from the ſhip due eaſt, and the other N.E. by E. and after ſailing due eaſt 5 miles, the northern headland bore N.E. by N. ½ E. Required the diſtance of thoſe headlands from one another, and their diſtance from the ſhip at each time of ſetting them?

In the eaſt and weſt line take B A (*fig.* 15.) = 5 miles; draw the N.E. by E. and N.E. by N. ½ E. rhumbs B *n*, B D; through A draw A D parallel to B *n*, meeting B D in D; draw D C perpendicular to A B produced. Then D and C are the headlands; A, B, are the ſhip's places at the times of ſetting them; and A B the diſtance ſailed. The angle $A = C B n = 3$ points; the angle D B C = 4½ points; then A B D = 11½ points, A D B = 1½ point, and B D C = 3½ points. In the triangle A B D, having the ſide A B and all the angles given, find the ſides A D, B D: and in the right-angled triangle B C D, having the ſide B D and all the angles, it is eaſy to find the ſides B C, C D. A D will be = 13.31 m. B D = 9.565 m. B C = 6.07 m. and C D = 7.395 m.

Ex. 5.—Having caſt anchor, I obſerved the bearings of a tower, a mill, and a light-houſe, known to lie due eaſt and weſt of one another; the tower bore W.S.W. the mill S.W. by S. ½ W. and the light-houſe S. by W. ½ W. The diſtance of the tower from the mill is 5½ miles. How far are each of thoſe objects diſtant from the place where I anchored?

Draw the given rhumbs B *r*, B *o*, B *n*, (*fig.* 16.) make B A = 5½ miles; produce *o* B till it meets A D, drawn parallel to B *r*, in D C; draw D C parallel to B *n*; then D repreſents the ſhip's place, A the tower, B the mill, and C the light-houſe. The angles are found and the triangles ſolved, as in the laſt example; and we ſhall have D A = 9.021 m. D B = 4.466 m. and D C = 3.608 miles.

SAILING *to windward.* The doctrine of plane triangles is farther applicable to this method of ſailing; for the right underſtanding of which, it will be neceſſary to explain the terms that occur in this part of navigation, though moſt of them may be met with in their proper places in this work. See AFT, BEAM, LARBOARD, STARBOARD, &c.

It may be obſerved in general, that when the wind is directly, or partly, againſt the ſhip's direct courſe to the place whither ſhe is bound, ſhe reaches her port by a kind of zigzag, or z-like courſe; which is made by ſailing with the wind, firſt on one ſide of the ſhip, and then on the other ſide.

The windward or weather-ſide of a ſhip is that ſide on which the wind blows, the other being called the leeward, or lee-ſide.

When a ſhip ſails the ſame way the wind blows, ſhe is ſaid to ſail before the wind, and the wind is ſaid to be *right aft*, or *right aſtern;* and her courſe is then 16 points from the wind. When a ſhip ſails with the wind blowing directly acroſs her, ſhe is ſaid to have the wind *on the beam;* and her courſe is eight points from the wind. When the wind blows obliquely acroſs the ſhip, the wind is ſaid to be *abaft the beam*, or *afore the beam*, according as her courſe is more or leſs than eight points from the wind. When a ſhip endeavours to ſail towards that point of the compaſs from whence the wind blows, ſhe is ſaid to *ſail on a wind*, or to *ply to wind-*

ward. A veſſel ſailing as near as ſhe can to the point from whence the wind blows, is ſaid to be *cloſe-hauled;* moſt ſhips will lie within about ſix points of the wind; but ſloops, and ſome other veſſels, will lie much nearer. When a ſhip ſails on a wind, the windward tacks are always hauled forwards, and the leeward ſheets aft. The ſtarboard tacks are aboard when the ſtarboard ſide is to windward, and the larboard to leeward; and the larboard tacks are aboard when the larboard ſide is to windward, and the ſtarboard to leeward. In order to know how near the wind a ſhip will lie, obſerve the courſe ſhe goes on each tack, when ſhe is cloſe-hauled; then half the number of points between the two courſes will ſhew how near the wind that ſhip will lie.

The moſt common caſes in turning to windward may be conſtructed by the following precepts. Having drawn the meridian and parallel of latitude (or eaſt and weſt line) in a circle repreſenting the horizon of the place, mark in the circumference the place of the wind; draw the rhumb paſſing through the place bound to, and lay thereon the diſtance of that place from the centre. On each ſide of the wind, lay off in the circumference the points or degrees, ſhewing how near the wind the ſhip can lie; and draw theſe rhumbs: the firſt courſe will be on one of theſe rhumbs according to the tack the ſhip leads with; draw a line through the place bound to, parallel to the other rhumb, and meeting the firſt; and this will ſhew the courſe and diſtance on the other tack.

Ex. 1.—The wind at north, and I am bound to a port 25 miles directly to windward, being on my ſtarboard tacks, and can lie within ſix points of the wind. What muſt be my courſe and diſtance on each of two tacks to reach my port?

The conſtruction being made as directed, N (*fig.* 17.) is the place of the wind, A the port bound to, and B the place where the ſhip is ſuppoſed to be, when the port is 25 miles to windward of her. As the ſhip leads with her ſtarboard tacks, *i. e.* has the wind blowing on her ſtarboard ſide, ſhe muſt firſt ſail along the line B C drawn parallel to the rhumb A *n*, which is ſix points from the wind; and where the other rhumb A *o*, ſix points alſo from the wind, being produced from A towards C, meets with B C in the point C, is the place where ſhe muſt tack about to reach her port within ſix points of the wind on her larboard tacks. Since B C is parallel to A *n*, the $< B = < N A n$ = ſix points; and $B A C = N A o$ = ſix points; hence $< C$ = four points; and as $< B = B A C$, the ſide $B C = C A$; conſequently, as one ſide A B, and all the angles are given, we ſhall have ſine of C : A B :: ſine of B A C : B C, *i. e.* ſine of 45° : 25 m. :: ſine of 67° 30′ : 32.66. Hence it appears that the ſhip muſt ſail on her ſtarboard tacks W.N.W. 32.66 miles, and her larboard tacks E.N.E. 32.66 miles.

Ex. 2.—A privateer lying by with the wind at N.N.E. ſees a ſloop on her ſtarboard tacks, that had juſt doubled a point 18 miles to the W. by N. the ſloop run for her port within ſix points of the wind; the privateer gave chace at the rate of eight knots an hour, and in four hours came up with her. Required the ſloop's rate of ſailing, and alſo the courſes of both veſſels?

Draw B A (*fig.* 18.) to the E. by S. and equal to 18 miles; on A with 32 m. = 8 × 4, cut the rhumb B C, drawn ſix points from the wind, at *w*; then the privateer is firſt at A, ſees the ſloop at B, gives chace along the line A C, and takes the ſloop at C; and B *o*, drawn parallel to A C, ſhews the privateer's courſe from the north. Here are known two ſides, A B, A C, and the angle $A B C$ = thirteen points. Hence we may eaſily obtain the other parts of the triangle; and find that the ſloop ſails N.W. at the rate of 3.86 m. *per* hour = $\frac{BC}{4}$, and that the privateer's courſe is N. 63° 12′ W.

Ex. 3.—A ſhip that can lie within ſix points of the wind, ſees a headland 21 miles to the N.E. which ſhe is to weather, in order to reach an iſland nine miles to windward of it, the wind being at eaſt. What courſe and how far muſt ſhe go on each tack, leading with the ſtarboard?

Draw B A (*fig.* 19.) = 21 m. to the S.W. B C = 9 m. to the E.; join A C; draw A D and C D each ſix points from the wind; then A is the ſhip's place, B the headland, C the iſland, A D the run on the ſtarboard tacks, and D C that on the larboard. In the triangle A B C, we have B A, B C, and the angle $A B C$ = twelve points; and can hence find the other angles, and A C. Then in the triangle A C D, the ſide A C, and all the angles are known (becauſe $< D$ = four points, $D C A = D C B + B C A$, and $C A D = B A D + B A C$), and we may find A D, D C. On the ſtarboard the ſhip runs 30.19 miles on the N.N.E. rhumb, and on the larboard 23.12 miles on the S.S.E. rhumb.

SAILING, *Current,* for an account of, ſee CURRENT.

SAILING, *Globular,* is the method of eſtimating either the difference of latitude, difference of longitude, departure, courſe, or diſtance, from any two of them being known, upon principles deduced from the figure of the earth; and in this conſiſts the application and uſe of Mercator's chart. See the principles of this method explained and demonſtrated under MERIDIONAL *Parts.*

Globular ſailing, in the extenſive ſenſe here applied to the term, comprehends parallel ſailing, middle latitude ſailing, and Mercator's ſailing; to which we may alſo add circular ſailing. Of each of theſe we ſhall here give a brief account, with examples of their uſe.

SAILING, *Parallel,* is the art of finding what diſtance a ſhip ſhould run due eaſt or weſt, in ſailing from the meridian of one place to that of another place, in any parallel of latitude; the method of performing which is by ſailing to the parallel of latitude the place is in, keeping a good account, ſo as to be certain whether the place is then to the eaſtward or weſtward; and alſo, if poſſible, to know the longitude arrived at; and then to run due weſt or eaſt, till the ſhip comes near the longitude of the given place; where ſhe is then ſure to make the port required.

The computations, in parallel ſailing, depend on the following rule: as radius, R, to the coſine of the latitude of any parallel, S, ſo are the miles of longitude between any two meridians, L, to the diſtance of thoſe meridians in that parallel, D. For the demonſtration of this rule, ſee MERIDIONAL *Parts.*

From the preceding proportion is eaſily deduced the following rule; as the coſine of one latitude, S, is to the coſine of another latitude, *s*, ſo is a given meridional diſtance in the firſt parallel, D, to the correſponding meridional diſtance in the ſecond parallel, *d*. Hence ariſe the following proportions.

$$R : S :: L : D$$
$$S : R :: D : L$$
$$L : D :: R : S$$
$$S : s :: D : d$$
$$D : d :: S : s$$

By which all the caſes that can happen in this kind of ſailing are readily reſolved by the logarithms, and alſo by the following table, calculated for a difference of longitude of one degree, or ſixty nautical miles of the equator, by the firſt rule.

Lat.	Miles.	Lat.	Miles.	Lat.	Miles.
1	59.99	31	51.43	61	29.09
2	59.96	32	50.88	62	28.17
3	59.92	33	50.32	63	27.24
4	59.85	34	49.74	64	26.30
5	59.77	35	49.15	65	25.36
6	59.67	36	48.54	66	24.41
7	59.56	37	47.92	67	23.44
8	59.42	38	47.28	68	22.48
9	59.26	39	46.63	69	21.50
10	59.09	40	45.96	70	20.52
11	58.89	41	45.28	71	19.53
12	58.69	42	44.59	72	18.54
13	58.46	43	43.88	73	17.54
14	58.22	44	43.16	74	16.54
15	57.95	45	42.43	75	15.53
16	57.67	46	41.68	76	14.51
17	57.38	47	40.92	77	13.50
18	57.06	48	40.15	78	12.48
19	56.73	49	39.36	79	11.45
20	56.38	50	38.57	80	10.42
21	56.01	51	37.76	81	9.38
22	55.63	52	36.94	82	8.35
23	55.23	53	36.11	83	7.32
24	54.81	54	35.27	84	6.28
25	54.38	55	34.41	85	5.23
26	53.93	56	33.55	86	4.18
27	53.46	57	32.68	87	3.14
28	52.97	58	31.79	88	2.09
29	52.47	59	30.90	89	1.05
30	51.96	60	30.00	90	0.00

See tables exhibiting the meaſure of degrees on the earth, as a ſphere and ſpheroid, under DEGREE.

As a ſpecimen of the manner of uſing this table; let the meridional diſtance correſponding to any number of degrees and minutes be required; take the difference of the meridional diſtances to the given degrees, and thoſe which are next greater; multiply this difference by the given minutes, and divide by 60; then the quotient ſubtracted from the miles againſt the given degrees in the table, will leave the meridional diſtance required.

E. g. How many miles anſwer to a degree of longitude in the latitude of 48° 26′?

Lat. 48° 40.15 miles. } The difference is 0.79, which mul-
Lat. 49° 39.36 miles. } tiplied by 26 gives 20.55; and this
divided by 60 gives 0.34; which taken from 40.15 leaves 39.81, the miles required.

Again, if it were required to find the correſponding degrees and minutes to a given meridional diſtance, intermediate to thoſe in the table; ſubtract the given meridional diſtance from the next greater, found in the table; multiply the remainder by 60; divide the product by the difference of the meridional diſtances next greater and leſs than the given one; then the quotient, annexed as minutes to the degrees of the next greater meridional diſtance, will give the degrees and minutes ſought.

E. g. In what latitude do 46.08 miles anſwer to one degree of longitude?

From 46.63, the miles correſponding to 39°,
Take 46.08, the given miles.

The difference 0.55, multiplied by 60, gives 33; and this divided by 0.67, the difference between 39° and 40°, gives 49′; and, therefore, 39° 49′ is the latitude ſought.

We ſhall here ſubjoin an example to each of the above proportions or canons.

Caſe 1.—A ſhip in the lat. of 32° N. ſails thence due eaſt till her difference of longitude is 384 miles. Required the diſtance ſhe has run?

By conſtruction.—From any point P (*fig.* 20.) with the ſine of 90°, taken from the ſcale of natural ſines, deſcribe the arc E Q; draw the chord E Q equal to 384 miles taken from a ſcale of equal parts; and draw the radii P E, P Q. From the ſame point P, with a radius equal to the ſine of 58° (the complement of the lat.) taken from the natural ſines, deſcribe the arc A B; and draw the chord A B, whoſe meaſure is the diſtance ſought. In this figure P repreſents the north pole; the arc E Q the equator; the arc A B a parallel of latitude; the chord E Q is the difference of longitude; the chord A B is the meridional diſtance ſought; A is the place ſailed from; B the place arrived at; and the radii P E, P Q, expreſs the meridians of the places ſo ſailed from and come to.

By computation.—R : S :: L : D, *i. e.* 10.00000 : 9.92842 (coſ. of 32°) :: 2.58433 : 2.51275 the log. of 325.6 the miles of diſtance run.

By the table.—Find the miles anſwering to the given latitude; multiply them by the given difference of longitude; the quotient, divided by 60, will give the meridional diſtance ſought. To 32 degrees anſwer 50.88 miles, then 50.88 × 384 = 19537.92, which, divided by 60, gives 325.632, the meridional diſtance ſought.

Caſe 2.—A ſhip from the lat. 53° 36′ N. long. 10° 18′ E. ſails due weſt 236 miles. Required her preſent longitude?

By conſtruction.—From the point P (*fig.* 20.) with the ſine of 90°, and the coſine of 53° 36′, deſcribe the arcs E Q; C D; draw the chord C D = 236; through C and D draw the radii P E, P Q; then the chord E Q, being drawn, will be the difference of longitude.

By computation.—S : R :: D : L; or P C : P E :: C D : E Q; *i. e.* 9.90574 (coſ. of 53° 36′) : 10.00000 :: 2.37291 (log. of 236 m. the meridional diſtance) : 2.59955 (the log. of 397.7) the difference of longitude; which, divided by 60, gives 6° 38′ W. and this ſubtracted from 10° 18′ E. gives the longitude required = 3° 40′ E.

By the table.—Find the meridional diſtance to a degree of longitude in lat. 53° 36′, and make it a diviſor to the product of the given meridional diſtance by 60; and the quotient will be the difference of longitude ſought. Thus, the difference of the meridional diſtances to 53° and 54° is 0.85; which multiplied by 36′, and divided by 60′, gives 0.51; this taken from 36.11, the meridional diſtance to 53°, leaves 35.6 for the meridional diſtance to 53° 36′; then $\frac{236 \times 60}{35.6}$ = 397.7, the difference of longitude ſought.

Caſe 3.—In what latitude do 384 miles of meridional diſtance anſwer to 500 miles of difference of longitude?

By conſtruction.—From the point P (*fig.* 21.) with the ſine of 90°, deſcribe the arc E Q; draw the chord E Q = 500, and draw the radii P E, P Q; make E C = 384, draw C B parallel to E P; then the arc A B, being deſcribed with the radius P B, is the parallel of latitude ſought.

By computation. — L : D :: R : S, or E Q : A B :: P E : P A, *i. e.* 2.69897 : 2.58433 (log. of 384) :: 10.00000 : 9.88536, the coſine of 39° 49′, in which lat. 384 miles of meridional diſtance anſwers to 500 miles of longitude.

By the table. – The given meridional diſtance 384, being multiplied by 60, and the product divided by the given diff. of long. 500, gives 46.08, the merid. diſt. to one degree of longitude in the latitude ſought: and the latitude will be found to be 39° 49′.

Caſe 4.—From two ports in the lat. 32° 20′ N. diſtant 256 miles, two ſhips ſail directly north. How far are they diſtant from one another, when they come to the latitude 44° 30′ N.?

By conſtruction.—From the point P (*fig.* 22.) with radii equal to the coſines of 32° 20′ and 44° 30′, deſcribe the arcs A B, D E; draw the chord A B = 256, and draw P A, P B; then will the chord D E be the diſtance ſought.

By computation. — S : *s* :: D : *d*, or P A : P D :: A B : D E, *i. e.* 9.92683 (coſ. 32° 20′) : 9.85324 (coſ. 44° 30′) :: 2.40824 (log. of 256) : 2.33465 the log. of 216.1, the diſtance ſought.

By the table.—The meridional diſtances, correſponding to 32° 20′ and 44° 30′, are 50.7 and 42.8; then the given meridional diſtance 256 × 42.8 = 1095.68, which divided by 50.7 gives 216.1, the meridional diſtance ſought.

Caſe 5.—If two ſhips in the lat. 44° 30′ N. diſtant from one another 216 miles, ſhould both ſail hence directly ſouth, until their diſtance is 256 miles: what latitude are they come to?

By conſtruction.—From P (*fig.* 23.) with a radius of the coſine of 44° 30′, deſcribe the arc D E, draw the chord D E = 216; and through D and E draw P A, P B; produce D E till D F = 256; through F draw F B parallel to P A, meeting P B in B; then an arc deſcribed from P through B and A will be the parallel of latitude come to.

By computation.—D : *d* :: S : *s*, or D E : A B :: P D : P A, *i. e.* 2.33445 (log. of 216) : 2.40824 (log. of 256) :: 9.85324 (coſ. 44° 30′) : 9.92702, the coſine of 32° 17′, the latitude ſought.

By the table.—To lat. 44° 30′ find the merid. diſt. 42.8; then $\frac{42.8 \times 256}{216} = 50.72$, which will be the merid. diſt. correſponding to 32° 17′, the latitude ſought.

Sailing, *middle latitude*, is a method of ſolving the ſeveral caſes of globular ſailing, by the principles of plain and parallel ſailing jointly: and it is founded on the ſuppoſition, that the departure is reckoned as a meridional diſtance in that latitude, which is a middle parallel between the latitude ſailed from, and the latitude come to. This method is not quite accurate; becauſe the arithmetical mean of the coſines of two diſtant latitudes is not the coſine of the arithmetical mean of thoſe latitudes; nor is the departure between two places on an oblique rhumb, equal to the diſtance between their meridians in a mean latitude; yet when the parallels of thoſe places are near the equator, or not far diſtant from one another, in any latitude, the error is inconſiderable. The computations, in this method, depend on the following rules.

1. Add the latitude ſailed from to the latitude arrived at, and take half the ſum for the middle latitude.

2. As the coſine of the middle latitude, C, is to the radius, R, ſo is the departure, D, to the difference of longitude, L. See *Parallel* Sailing, and Meridional *Parts.*

3. As the coſine of the middle latitude, C, is to the tangent of the courſe, T, ſo is the difference of latitude, P, to the difference of longitude, L: for, from rule 2, we obtain rad. × dep. = coſ. mid. lat. × diff. long.; and from caſe 6. of plane ſailing, rad. × dep. = diff. lat. × tang. courſe: therefore, by equality and proportion, we ſhall have the rule. Hence ariſe the following proportions or canons.

$$\left.\begin{array}{l} C : R :: D : L \\ L : D :: R : C \\ R : C :: L : D \end{array}\right\} \begin{array}{l} C : T :: P : L \\ P : L :: C : T \end{array}$$

Sailing, *Mercator's*, is the art of reſolving the ſeveral caſes of globular ſailing, by plain trigonometry, with the aſſiſtance of a table of meridional parts, or of logarithmic tangents. The computations are performed by the following rules.

1. As the merid. diff. of lat. M, is to the diff. of long. L, ſo is the radius, R, to the tangent of the courſe, T: whence we have alſo, R : T :: M : L, and T : R :: L : M.

2. As the proper diff. of lat. P, is to the departure, D, ſo is the merid. diff. of lat. M, to the diff. of long. L: whence we have alſo, M : L :: P : D.

3. As the difference of the logarithmic tangents of $\frac{1}{2}$ co-latitudes, G, is to the tangent of 51° 38′ 9″ N. ſo is a given diff. of long. L, to the tangent of the courſe, T: whence we have alſo, N : G :: T : L, and T : L :: N : G.

The manner of working with the meridional parts and logarithmic tangents will appear from the two following caſes.

1. Let the latitudes of two places be given, and the meridional difference of latitude between them be required. By the meridional parts, when they are on the ſame ſide of the equator, ſay the difference; when on different ſides, the ſum of the meridional parts anſwering to each latitude, will give the meridional difference of latitude required.

By logarithmic tangents, when they are on the ſame ſide of the equator, ſay the difference of the logarithmic tangents; when on different ſides, the ſum of the logarithmic co-tangents, abating the index, of the half co-latitudes, divided by 12.63, will give the meridional difference of latitude required.

2. Let the latitude of one place, and the meridional difference of latitude between that and another place, be given; and the latitude of the other place be required.

The ſum of the meridional parts of the given latitude, and the given meridional difference of latitude, when they have like names, or their difference, when they have unlike names, found in the table of meridional parts, will give the latitude ſought. Or, multiply the given meridional difference of latitude by 12.63; and in the former caſe ſubtract, but in the latter caſe add, the product of the logarithmic tangent of the given half co-latitude, the degrees correſponding to the tangent of the remainder, or of the ſum being doubled, will give the co-latitude required.

The following example will ſerve to illuſtrate the application and uſe, both of middle latitude and Mercator's ſailing.

Ex.—What is the courſe and diſtance from Cape Clear, in Ireland, lat. 51° 18′ N. long. 9° 50′ W. to the iſland of St. Mary, one of the Azores, lat. 37° 0′ N. and long. 22° 56′ W.?

By middle latitude ſailing.—In this example the diff. of lat. = 14° 18′ = 858 min. and diff. of long. 13° 6′ = 786 min. ſum of the latitudes 88° 18′; middle lat. = 44° 9′; and co-mid. lat. 45° 51′.

By conſtruction.—Draw the meridian A D (*fig.* 24.); deſcribe the quadrant A *m p* with the ſine of 90°, and the arc E F with the coſine of the middle latitude; make the chord *m* B equal to 786, the difference of longitude; draw A B, cutting the arc E F in F, and draw the chord E F; make A D = 858, the difference of latitude; draw D C parallel to A *p* and equal to E F; and draw A C, which is the diſtance, and the angle D A C is the courſe.

By computation.—For the courſe; P : L :: C : T, *i. e.* 2.93349 (log. of diff. lat. 858) : 2.89542 (log. of diff. long. 786) :: 9.85583 (coſ. of mid. lat. 44° 9′) : 9.81776 the tangent of 33° 19′, the courſe. For the diſtance; ſin. < C : A D :: R : A C, *i. e.* 9.92202 (coſ. of 33° 19′) : 2.93349 :: 10.00000 : 3.01147 the log. of 1027 the diſtance.

By the traverſe table.—With the co-mid. lat. found among the degrees, and the diff. of long. or ſome part thereof (if too large) taken among the diſtances, find the departure, or ſome part of it, in its column: obſerving to multiply this departure by the ſame number the diff. of long. was divided by. Then, with the diff. of lat. and dep. together, or their like parts, find the courſe among the degrees, and the diſtance in its column.

Let the diff. long. 786 be broken into parts, *viz.* into 100 taken 7 times, and into 86; and as the co-mid. lat. is 45° 51′ = 45° $\frac{5}{6}$, proceed thus. The departures to 100 in the columns of 45° and 46° are 70.7 and 71.9; the diff. is 1.2; $\frac{5}{6}$ part of it is 1.0; which added to 70.7, makes 71.7 for the dep. to 100; and for 700 it will be 501.9. Alſo the departures to 86 in the columns of 45° and 46° are 60.8 and 61.9; $\frac{5}{6}$ of their diff. is 0.9; and this with 60.8 makes 61.7 the departure to 86; and the whole departure = 563.6.

Now take $\frac{1}{20}$ of the diff. of lat. 858, and of the dep. 564, *viz* 42.9 and 28.2; theſe will be found together under 33° 15′ for the courſe; and between 51 and 52 diſt. Suppoſe $51\frac{1}{2}$; which taken 20 times gives 1030 for the diſtance.

By Mercator's ſailing.

Lat. Cape Clear, 51° 18′ } Mer. parts 3597, diff. lat. 858 m.
Lat. St. Mary's, 37° } ——— 2393, diff. long. 786 m.
Merid. diff. lat. 1204

By conſtruction.—Draw the meridian A B (*fig.* 25.) and deſcribe the quadrant A *m p*; make A D = 858, the proper diff. lat. and A B = 1204, the meridional diff. lat.; draw D C, B E parallel to A *p*; make B E = 786 the diff. long. and draw A E. Then A is the place of Cape Clear, C that of St. Mary's, A C is the diſtance, C D the departure, and the angle D A C is the courſe.

Computation by meridional parts.—For the courſe; M : L :: R : T, *i. e.* 3.08063 (log. of 1204) : 2.89542 (log. of 786) :: 10.00000 : 9.81479, the tangent of 33° 8′, the courſe. For the diſtance; ſine of C : A D :: R : A C, *i. e.* 9.92293 (coſ. courſe) : 2.93349 (log. of 858) :: 10.00000 : 3.01056 the log. of 1024, the diſtance.

Computation by Logarithmic tangents.

Cape Clear's lat. 51° 18′. Co-lat. 38° 42′. $\frac{1}{2}$ Co-lat. 19° 21′.
St. Mary's lat. 37° 0′. Co-lat. 53° 0′. $\frac{1}{2}$ Co-lat. 26° 30′.
Log. tang. of $\frac{1}{2}$ Co-lat. 26° 30′ = 9.69774
— — — — — 19° 21′ = 9.54552
Diff. = 1522.2 = G.

For the courſe; G : N :: L : T, *i. e.* 3.18240 (log. of 1522) : 10.10151 (log. tang. of 51° 38′ 9″) :: 2.89542 (log. of 786) : 9.81452 tang. of 33° 7′, the courſe. The diſtance will be the ſame as in the former computation; for the difference of near a minute in the courſe would not happen in working by tables containing more places.

By the traverſe table.—Seek the merid. diff. lat. and diff. long. together, like diff. lat. and departure, and the courſe is given among the degrees. Then with the courſe and proper diff. lat. find the diſtance. Thus, taking $\frac{1}{20}$ of 1204 and 786, *viz.* 60.2 and 39.3, they will be found together under 33° 15′ for the courſe. And taking $\frac{1}{20}$ of the diff. lat. 858, *viz.* 42.9, and the courſe 33° 15′, we ſhall have about $51\frac{1}{2}$ for the diſtance, which taken 20 times gives 1030 the diſtance.

Sailing, *circular*, or *great circle*, is the art of finding what places a ſhip muſt go through, and what courſes to ſteer, ſo that her track ſhall be in the arc of a great circle, or nearly ſo, paſſing through the place ſailed from and that bound to. This method of ſailing has been propoſed, becauſe the ſhorteſt diſtance between two places on the ſphere is an arc of a great circle intercepted between them, and not the ſpiral or rhumb paſſing through them, unleſs that rhumb coincides with a great circle, which can only be on the meridian or on the equator. As the ſolutions of the caſes in Mercator's ſailing are performed by plane triangles, in this method of ſailing they are reſolved by the means of ſpheric triangles. A great variety of caſes might be here propoſed, but thoſe that are the moſt uſeful and moſt commonly recur pertain to the following problem.

Problem I.—Given the latitudes and longitudes of two places on the earth, required their neareſt diſtance on the ſurface, together with the angles of poſition from either place to the other. This problem comprehends ſix caſes.

Caſe 1.—When the two places lie under the ſame meridian; their difference of latitude will give their diſtance, and the poſition of one from the other will be directly north and ſouth.

Caſe 2.—When the two places lie under the equator; their diſtance is equal to their difference of longitude, and the angle of poſition is a right angle, or the courſe from one to the other is due eaſt or weſt.

Caſe 3.—When both places are in the ſame parallel of latitude. *E. g.* What is the leaſt diſtance between St. Mary's, in lat. 37° 0′ N. long. 22° 56′ W. and Cape Henry, lat. 37°, and long. 76° 23′ W.?

Let P E S Q (*fig.* 26.) repreſent the meridian of St. Mary's, E Q the equator, P S the axis, P the north pole, and S the ſouth pole; and from P to A lay off the complement of the latitude of St. Mary's. From Q to C on the equator, lay off the difference of longitude between the two places; and through P, C, S, deſcribe the circle P C S, which will be the meridian of Cape Henry, on which, from P to B, lay its co-latitude, by deſcribing the arc A *a*, about the pole P, at the diſtance of the co-latitude. Through the points A, B, D, deſcribe a great circle A B D. Then A repreſents St. Mary's, B Cape Henry, P A and P B their co-latitudes, the angle A P B, meaſured by the arc Q C, their difference of longitude; the arc A B their neareſt diſtance; the angle P A B the angle of poſition from A to B; and the angle P B A that of poſition from B to A. As the places have the ſame latitude, P A = P B, and P A B = P B A; and if the arc P I be deſcribed, making the angle A P I = 26° $43\frac{1}{2}$′ = half the difference of longitude = I P B, P I will be perpendicular to A B, and biſect it. And in the triangle A I P, right-angled at I, we ſhall have the hypothenuſe A P = 53°, and A P I = 26° $43\frac{1}{2}$′, whence we can find the leg A I = half the diſtance ſought, and the angle P A I = the angle of poſition.

For the diſtance; rad. : ſin. hyp. P A :: ſine of A P I : ſine of A I, *i. e.* 10.00000 : 9.90235 (coſ. of 37°) :: 9.65292 (ſine of 26° $43\frac{1}{2}$′) : 9.55527 ſine of 21° 3′, half the diſtance, which doubled gives 42° 6′, the whole diſtance A B;

A B; and this reduced to nautical miles, is 2526, which is 35 miles leſs than 2561, the diſtance given by parallel ſailing.

For the angle of poſition; rad. : coſ. P A :: tang. A P I : cotang. A, *i. e.* 10.00000 : 9.77946 (coſ. of co-lat. or ſin. lat. 37°) :: 9.76199 (tang. 26° 43½′) : 9.48145 co-tang. of 73° 9′, the angle of poſition. Conſequently, to ſail from A to B, or from B to A, the ſhip muſt firſt ſteer N. 73° 9′ W. or E. and then gradually increaſe her courſe till ſhe comes to I, where it will be due W. or E.; and from thence the courſe is to be gradually diminiſhed again till ſhe comes to the other port, where it will be 73° 9′, the ſame as ſhe ſet out with. How theſe courſes are to be altered will be ſhewn in Prob. II.

Caſe 4.—When one place has latitude, and the other is under the equator: *e. gr.* what is the neareſt diſtance between the iſland of St. Thomas in lat. 0° 0′, and long. 1° 0′ E. and port St. Julian, in lat. 48° 51′ S. and long. 65° 10′ W.?

Let A (*fig.* 27.) repreſent St. Thomas, A C the meaſure of the angle A S C = 66° 10′ = diff. of long. about the ſouth pole S, at the diſtance of St. Julian's co-lat. deſcribe the arc *a a*, interſecting S C P, the meridian of St. Julian in B, and through A, B, E, deſcribe a great circle; and A B is the diſtance ſought; and the angles of poſition are at A and B.

For the diſtance; in the triangle A C B, rad. : coſ. of either leg A C :: coſ. of the other C B : coſ. hyp. A B, *i. e.* 10.00000 : 9.60646 (coſ. of 66° 10′) :: 9.81825 (coſ. of 48° 51′ = diff. of lat.) : 9.42471, the coſ. of 74° 35′, the diſtance required; which is 4475 miles, leſs by 57 miles than the diſtance found by Mercator's ſailing.

For the angle of poſition at A; rad. : ſin. A C :: cotang. C B : cotang. A, *i. e.* 10.00000 : 9.96129 (ſin. 66° 10′) :: 9.94146 (cotang. 48° 51′) : 9.90275, cotang. of 51° 22′, the angle at A.

For the angle at B; rad. : ſin. C B :: cotang. A C : cotang. B, *i. e.* 10.00000 : 9.87679 (ſin. 48° 51′) :: 9.64517 (cotang. 66° 10′) : 9.52196, cotang. of 71° 36′, the angle at B. Hence it appears, that a ſhip ſailing from the iſland of St. Thomas, muſt firſt ſhape her courſe S. 51° 22′ W. and then by conſtantly altering her courſe towards the weſt, ſo as to arrive at port St. Julian, on a courſe S. 71° 36′ W. ſhe will have ſailed the ſhorteſt diſtance between thoſe places.

Caſe 5.—When the latitudes of the given places are both north, or both ſouth: *e. gr.* what is the neareſt diſtance between the Lizard and the iſland of Bermudas, and alſo what are the angles of poſition at each place?

Lat. Lizard	49° 57′ N. and long.	5° 14′ W.
Lat. Bermudas	32° 25′ N. and long.	66° 38′ W.
	Diff. long.	61° 24′

Make P A (*fig.* 28.) = 57° 35′, the co-lat. of Bermudas; P *a* = 40° 3′, the co-lat. of the Lizard; and with the tangent of P *a* deſcribe the arc *a a*. With the ſecant of 61° 24′ arcs, deſcribed from P and S, give the centre of the circle P C S, the meridian of the Lizard, and its interſection with *a a* gives B, the place of the Lizard: the intercepted arc A B of the great circle deſcribed through A, B, and D, is the diſtance ſought, and the angles P A B, P B A, are the poſitions ſought.

For the diſtance; in the triangle A P B, rad. : coſ. A P B :: tang. P A : to tang. of a fourth arc M, *i. e.* 10.00000 : 9.68006 (coſ. 61° 24′) :: 10.19721 (tang. 57° 35′) : 9.87727, tang. of 37° 1′ = M, which, taken from the co-lat. of the Lizard, = 40° 3′, leaves a fifth arc 3° 2′ = N; then coſ. M : coſ. N. :: coſ. of ſide firſt uſed, P A : coſ. required A B, *i. e.* 9.90225 (coſ. 37° 1′) : 9.99939 (coſ. 3° 2′) :: 9.72922 (coſ. co-lat. or ſin. lat. 32° 25′) : 9.82636, coſ. 47° 54′, the required diſtance.

For the angle P B A; as this angle is oppoſite to the ſide uſed in the firſt proportion, therefore the fourth and fifth arcs here uſed are the ſame as above; ſin. N : ſin. M :: tang. A P B : tang. P B A, *i. e.* 8.72359 (ſin. 3° 2′) : 9.77963 (ſin. of 37° 1′) :: 10.26343 (tang. of 61° 24′) : 11.31947, tang. of 87° 15′ = P B A.

For the angle P A B; ſin. P A : ſin. P B A :: ſin. B P : ſin. P A B, *i. e.* 9.92643 (ſin. 57° 35′) : 9.99950 (ſin. 87° 15′) :: 9.80852 (ſin. 43° 3′) : 9.88159, ſin. of 49° 35′ = P A B.

Hence, the ſhorteſt diſtance between the Lizard and Bermudas is 47° 54′ = 2874 ſea-miles, leſs by 178 miles than the diſtance found by Mercator's ſailing. And a ſhip muſt ſail from the Lizard S. 87° 15′ W. and gradually leſſen the courſe ſo as to arrive at Bermudas on the rhumb bearing S. 49° 35′ W.; whereas the direct courſe from one to the other, as found by Mercator's ſailing, is S. 69° 2′ W.

Caſe 6.—When one of the given places has north latitude, and the other ſouth latitude; *e. gr.* what is the neareſt diſtance from the iſland of St. Helena to the iſland of Bermudas; and alſo what are the angles of poſition at each place?

Bermudas, lat.	32° 25′ N. and long.	66° 38′ W.
St. Helena, lat.	16° 0′ S. and long.	6° 15′ W.
	Diff. long.	60° 23′

Make Q A (*fig.* 29.) = 16°, the lat. of St. Helena; with the tang. of P *a* = 57° 35′, the co-lat. of Bermudas, deſcribe the arc *a a* about P; arcs deſcribed from P, S, with the ſecant of 60° 23′, will give the centre of the circle P C S, the meridian of Bermudas, and its interſection B with *a a*, is the place of Bermudas. Deſcribe a great circle through A, B, D, and the intercepted arc, A B, is the diſtance ſought, and the angles P A B, A B S, are the poſitions required.

For the diſtance A B; in the triangle A B P, rad. : coſ. P :: tang. P B : tang. of fourth arc M, *i. e.* 10.00000 : 9.69590 (coſ. 60° 23′) :: 10.19721 (tang. 57° 35′) : 9.89111, tang. of 37° 54′; which taken from 106° = St. Helena's N. polar diſtance, leaves a fifth arc = 68° 6′ = N. Then coſ. M : coſ. N :: coſ. P B : coſ. A B; *i. e.* 9.89712 (coſ. 37° 54′) : 9.57169 (coſ. 68° 6′) :: 9.72922 (ſin. 57° 35′) : 9.40379, coſ. of 75° 19′, the diſtance ſought.

For the angle of poſition P A B; ſin. N : ſine M :: tang. P : tang. A, *i. e.* 9.96747 (ſin. 68° 6′) : 9.78837 (ſin. 37° 54′) :: 0.24530 (tang. 60° 23′) : 10.06620, tang. of 49° 20′ = the angle P A B.

For the angle A B P; rad. : coſ. P :: tang. P A : tang. M, *i. e.* 10.00000 : 9.69590 (coſ. 60° 23′) :: 10.54250 (tang. 106°) : 10.23640, tang. of 59° 53′; but this fourth arc muſt be like P A, or obtuſe, and, therefore, the ſupplement of 59° 53′, or 120° 7′, is the fourth arc M; and the difference between this and P B is 62° 32′ for N, or the fifth arc. And ſin. N : ſin. M :: tang. P : tang. A B P, *i. e.* 9.94806 (ſin. 62° 32′) : 9.93702 (ſin. 120° 7′) :: 10.24530 (tang. 60° 23′) : 10.23426, tang. of 59° 45′; therefore, as the angle A B P ought to be obtuſe, it is the ſupplement of 59° 45′ = 120° 15′. A ſhip, in order to ſail from St. Helena to Bermudas on the arc of a great circle, muſt firſt ſhape her courſe N. 49° 20′ W. and gradually deflect from the north, ſo as to arrive at Bermudas on a courſe N. 59° 45′ W. after having run 75° 19′, or 4519 ſea-miles. The courſe by Mercator's ſailing is N. 50° 5′ W. and the diſtance 4527 miles. Whence it appears, that when the places are one in N. lat. and the other in S. lat. there is but a ſmall difference between the reſults found by Mercator's and great circle ſailing; for near the equator the rhumb-lines do not much differ from great circles.

From the ſolutions of the preceding caſes it appears, that to ſail on the arc of a great circle, the ſhip muſt continually alter her courſe; but as this is a difficulty too great to be admitted into the practice of navigation, it has been thought ſufficiently exact to effect this buſineſs by a kind of approximation, that is, by a method which nearly approaches to the ſailing on a great circle: upon this principle, that in ſmall arcs, the difference between the arc and its chord or tangent is ſo ſmall, that they may be taken for one another in any nautical operations: and, accordingly, it is ſuppoſed, that the great circles on the earth are made up of ſhort right lines, each of which is a ſegment of a rhumb-line.

On this ſuppoſition the ſolution of the following problem is deduced.

Prob. II.—Having the latitudes and longitudes of the places ſailed from and bound to, given; to find the ſucceſſive latitudes on the arc of a great circle in thoſe places where the alteration in longitude ſhall be a given quantity; together with the courſes and diſtances between thoſe places.

1. Find the angle of poſition at each place, and their diſtance by one of the preceding caſes. 2. Find the greateſt latitude the great circle runs through, *i. e.* find the perpendicular from the pole to that circle; and alſo find the ſeveral angles at the pole, made by the given alterations of longitude between this perpendicular and the ſucceſſive meridians come to. 3. With this perpendicular and the polar angles, ſeverally find as many correſponding latitudes, by ſaying, as rad. : tang. greateſt lat. :: coſ. 1ſt polar angle : tang. 1ſt lat. and :: coſ. 2d polar angle : tang. of 2d lat. &c. 4. Having the ſeveral latitudes paſſed through, and the difference of longitude between each, find, by Mercator's ſailing, the courſes and diſtances between thoſe latitudes. And theſe are the ſeveral courſes and diſtances the ſhip muſt run, to keep nearly on the arc of a great circle. The ſmaller the alterations in longitude are taken, the nearer will this method approach the truth; but it is ſufficient to compute to every five degrees of difference of longitude, the length of an arc of five degrees, differing from its chord or tangent only by 0.0002.

As an example of this method of ſolution; a ſhip, being bound from the iſland of St. Mary to Cape Henry, propoſes to ſail as near the arc of a great circle as ſhe can by altering her courſe at every five degrees difference of longitude. Required the latitude at each time of altering the courſe, and alſo the courſes and diſtances between thoſe ſeveral latitudes?

Let the figure be deſcribed, and the computation made, as in *Caſe* 3. of *Prob.* I.; the diſtance B A (*fig.* 30.) is found to be 42° 6′, and the < A or < B = 73° 9′, the angle of poſition. The triangle A P B being iſoſceles, the perpendicular P I falls in the middle of A B; and the latitudes, courſes, and diſtances being known in running the half B I, thoſe in the half I A will alſo be known. Let the points *a*, *b*, *c*, *d*, &c. be the places come to on each alteration of five degrees longitude: then will the arcs P *a*, P *b*, P *c*, P *d*, &c. be the reſpective co-latitudes of thoſe places, and they are the hypothenuſes of the right-angled ſpheric triangles P I *a*, P I *b*, P I *c*, P I *d*, &c. In the triangle P I B, given P B = 53°, P B I = 73° 9′, to find P I, rad. : ſin. P B :: ſin. B : ſin. P I, *i. e.* 10.00000 : 9.90235 (ſin. of 53°) :: 9.98094 (ſin. 73° 9′) : 9.88329 ſine of 49° 51′ = P I. Now $\mathrm{I\,P\,B} = \frac{53^\circ\,27'}{2} = 26^\circ\,43\frac{1}{2}'$; $\mathrm{I\,P}a = 21^\circ\,43\frac{1}{2}'$; $\mathrm{I\,P}b = 16^\circ\,43\frac{1}{2}'$; $\mathrm{I\,P}c = 11^\circ\,43\frac{1}{2}'$; $\mathrm{I\,P}d = 6^\circ\,43\frac{1}{2}'$: and theſe are the ſeveral polar angles.

	21° 43½′	16° 43½′	11° 43½′	6° 43½′
Then rad. - -	10.00000	10.00000	10.00000	10.00000
To co-tang. PI = 49° 51′	9.92612	9.92612	9.92612	9.92612
As coſine polar angle -	9.96800	9.98122	9.99084	9.99700
To tang. lat. -	9.89412	9.90735	9.91696	9.92312
Which are	38° 5′	38° 56′	39° 33′	39° 57′

The degrees and minutes ſet over each column are the polar angles uſed in that proportion, and the correſponding latitudes ſtand at bottom.

Hence it appears the ſhip muſt firſt ſail from the lat. 37° 0′ N. to lat. 38° 5′ N.; thence to lat. 38° 56′ N.; thence to lat. 39° 33′ N.; thence to lat. 39° 57′ N.; thence to lat. 40° 9′ N. which is the greateſt latitude ſhe muſt go to; and from thence ſhe muſt proceed through the latitudes 39° 57′, 39° 33′, 38° 56′, 38° 5′, and ſo to 37° 0′, the parallel ſhe ſet out from, and in which ſhe is to find Cape Henry. Now between theſe ſeveral latitudes, with the reſpective differences of longitude, find, by Mercator's ſailing, the courſes and diſtances. If the reſult of the ſeveral operations, in the queſtions of great circle ſailing, be entered in ſuch a table as the following, it will be found convenient to the operator.

Polar Angles.		Succeſſ. Longs.	Succeſſ. Lats.	Diff. Longs.	Diff. Lats.	Merid. Parts.	Merid. D. Lat.	Courſe.	Diſtance.
< I P B	26° 43½′	22° 56′	37° 00′	300	65	2392.6	82.0	74.43	246.6
< I P *a*	21 43½	27 56	38 05	300	51	2474.6	65.2	77.44	240.0
< I P *b*	16 43½	32 56	38 56	300	37	2539.8	47.8	80.57	235.2
< I P *c*	11 43½	37 56	39 33	300	24	2587.6	31.2	84.04	232.2
< I P *d*	6 43½	42 56	39 57	403,5	12	2618.8	15.7	87.46	307.9
		49 39½	40 09			2634.5			
									1261.9

The column of diſtances being ſummed up amounts to 1261.9, which being doubled gives 2523.8 miles for the diſtance between St. Mary and Cape Henry; differing from the diſtance found in a great circle (*Caſe* 3. *Prob.* I.) by

2.3 ſea-miles. And the courſes the ſhip muſt ſteer are, firſt, N. 74° 43′ W. then N. 77° 44′ W. &c. on the courſes in the table, and to run the diſtances 246.6, &c. miles correſponding to them.

The track of a ſhip, when directed nearly in the arc of a great circle, may be delineated on the Mercator's chart, by marking on it, by the help of the latitudes and longitudes, the ſucceſſive places where the ſhip is to alter her courſe; then thoſe places or points being joined by right lines will ſhew the path along which the ſhip is to ſail under the propoſed circumſtances. See, on the ſubject of theſe articles, Robertſon's Elements of Navigation, vol. ii. paſſim.

SAILING, in a *more confined ſenſe*, is the art of conducting a veſſel from place to place, by the working or handling of her ſails and rudder: though what is done by means of this latter, is more properly called *ſteering*.

To bring ſailing to certain rules, M. Renau computes the force of the water, againſt the ſhip's rudder, ſtem, and ſide; and that of the wind againſt her ſails. In order to this, he, 1. Conſiders all fluid bodies, as the air, water, &c. as compoſed of little particles, which when they act upon, or move againſt, any ſurface, do all move parallel to one another, or ſtrike againſt the ſurface after the ſame manner. 2. That the motion of any body, with regard to the ſurface on which it is to ſtrike, muſt be either perpendicular, parallel, or oblique. In the firſt caſe, the body ſtrikes with all its force, which will be greater or leſs, according as the body moves ſwifter or ſlower. In the ſecond caſe, the line of motion *a b* (*Plate* II. *Navigation*, *fig.* 31.) will not affect the ſurface at all, becauſe it is no way oppoſed to it; nor can the moving body ſtrike upon it, or touch it. In the third, if the line of motion, A D, be oblique to the ſurface, D C, ſo that the angle of the incidence be A D C, then the motion of the body in the line A D may be reſolved into two directions, *viz.* into A E, or B D, and into A B. But the direction or line of motion, A E, being parallel to the ſurface, D C, cannot affect it at all: ſo that the whole motion of the body, A, in that oblique manner of ſtriking on the ſurface, will be expounded by the perpendicular line A B. And if D A be made the radius of a circle, whoſe centre is at D, B A will be the ſine of the angle of incidence A D C.

Hence it is deduced, that the force of a particle of air, or water, as A, ſtriking againſt the ſurface, D C, which may repreſent, either a ſail, or the rudder of a ſhip, in the oblique direction, A D, will be to the perpendicular force thereof, as B A is to D A; that is, as the ſine of the angle of incidence is to the radius.

And ſince what is thus true of one particle, ſingly conſidered, will be true of all the particles of any fluid body collectively; it will follow, that the force of the air or water, ſtriking perpendicularly upon a ſail or rudder, to the force of the ſame, in any oblique impingency, will be as the ſquare of the radius to the ſquare of the ſine of the angle of incidence: and conſequently, that all oblique forces of the wind againſt the ſails, or of the water againſt the rudder, will be to one another, as the ſquares of the ſines of the angles of incidence.

If the different degrees of velocities be conſidered, it will be found, that the forces will then be as the ſquares of the velocities of the moving air or water: that is, a wind that blows thrice as ſtrong, or moves thrice as ſwift, as another, will have nine times the force upon the ſail. And it being alſo indifferent, whether you conſider the motion of a ſolid in a fluid, whoſe particles are at reſt; or of thoſe particles moving all parallel againſt a ſolid that is at reſt; the reciprocal impreſſions being always the ſame; if a ſolid be moved with different velocities in the ſame fluid matter (as ſuppoſe water), the different reſiſtances which it will receive from that water, will be in the ſame proportion as the ſquares of the velocities of that body.

Let H M (*fig.* 32.) repreſent a ſhip, C D the poſition of the ſail, and A B the courſe of the wind blowing towards B. Draw B G perpendicular to the ſail, and G K perpendicular to the line of the keel produced, H M K. By what is ſaid above, the ſail C D will be driven by the wind A B, according to the direction of the line B G. So that if ſhe could divide the water every way with the ſame facility, as ſhe doth with her head, the ſhip would go directly to the point G, along the line B G. And if H K repreſents her direct courſe, ſhe ſhould have got forward the length B K, and ſideways ſhe would have gone the quantity K G. But as her length is much greater than her breadth, ſo ſhe will divide the water, to make her way in it with more difficulty with her ſide than with her head or ſtern; on which account, ſhe ſhall not run ſideways ſo far as K G, but will fall ſhort of it in proportion to the ſaid difficulty of dividing the water with her ſide; that is, if the reſiſtance ſhe finds in her paſſing through the water ſideways, be to that of paſſing lengthways, ſuppoſe as ten to one, then will not the ſhip get ſideways above a tenth part of the line G K. Wherefore, if G K be found to G L in the ratio of the reſiſtance of the ſide to that of the ſtern, and the line B L be drawn; the ſhip will go to the point L, along the line B L, in the ſame time as it would have gone to G, if it could have divided the water every way equally. This part, K L, is called the *drift*, or *lee-way* of a ſhip, and the angle K B L is her degrees of lee-way; as the angle A B K expreſſes how near the wind ſhe lies.

After this, the author proceeds to demonſtrate, that the beſt poſition or ſituation of a ſhip, ſo as ſhe may make the leaſt lee-way, but go windward as much as poſſible, is this: that, let the ſail have what ſituation it will, the ſhip be always in a line biſecting the complement of the wind's angle of incidence upon the ſail; that is, ſuppoſing the ſail in the poſition B C (*fig.* 33.), the wind blowing from A to B, and, conſequently, the angle of the wind's incidence on the ſail A B C, and its complement C B E; then muſt the ſhip be put in the poſition B K, or move in the line B K, biſecting the angle C B E.

He ſhews farther, that the angle which the ſail ought to make with the wind, *i. e.* the angle A B C ought to be but 24°; that being the moſt advantageous ſituation to go to windward the moſt that is poſſible. And in order to bring this to bear in practice, he directs to put marks to the ſheets, braces, and bowlines of the lower ſails, to know when they are in their beſt ſituation; and then, even in the night, when the marks of a brace, or of a ſheet, ſhall come to the cleat, one may be pretty well aſſured that the ſail trims well.

To this might be added many curious things from Borelli de Vi Percuſſionis, concerning the different directions given to a veſſel from the rudder, when ſailing with a wind, or floating without ſails in a current: in the former caſe, the head of the ſhip always coming to the rudder, and in the latter, always flying off from it.

We ſhall here ſubjoin ſome obſervations on the moſt advantageous angle of the ſails with the keel and the wind, in order to obtain the greateſt rate of ſailing on an oblique courſe. In moſt ſhips the ſails make with the keel an angle, A D R, (*Plate* IV. *Navigation*, *fig.* 1.) of about 40° (more or leſs), when cloſe-hauled. But this angle, it is ſaid, is not the moſt favourable for running with the greateſt velocity in getting to windward; but it ſhould be much more oblique, ſo that in large ſhips, the angle A D R ſhould be reduced to 30°. Of all the angles A D R, B D R, and H D R, which the ſail A Z can make with the keel in the ſame courſe D R, it is obvious, that one muſt be more advantageous than the reſt, in order to produce the greateſt velocity poſſible in the moſt oblique courſe. This angle cannot, in practice, be rendered more acute than 30°; but it will ſerve to determine the moſt favourable angle of incidence A D V of the wind upon the ſail, and that which is the moſt advantageous for running with the greateſt rapidity on all oblique courſes between cloſe-hauled and wind abaft. In order to eſtabliſh the principle which ſerves to demonſtrate its utility, it ſhould be recollected, that different impulſions of fluids on ſurfaces are reſpectively as the ſquares of the ſines of incidence: conſequently, if we wiſh to judge whether it be advantageous to render the angle of incidence A D S, or A D V, of the wind upon the ſail A Z more or leſs acute, it is neceſſary to examine, if the ſquare of the ſine of incidence A F, or the total impulſion D E, increaſes more or leſs than the ſquares of the ſines of incidence B C and H I, or than their correſpondent impulſions D G and D K, in proportion to the diminution or increaſe of the ſines of the angle of obliquity of the ſail with the keel A T, B Y, and H L: for, if the ſquare of the ſine of incidence H I, or the impulſion D K, does not proportionally increaſe ſo much as the ſine of obliquity A T is diminiſhed in becoming equal to L H, it is evident that the poſition of the ſail A D is more favourable than when it is ſituated in the direction D H: and if the ſquare of the ſine of incidence B C, or its correſpondent impulſion D G, diminiſhes more in proportion than the ſine A T augments, in becoming equal to the other ſine of obliquity B Y, in the other poſition of the ſail; it is an evident proof that its ſituation A D is ſtill more favourable than if it were in the poſition B D, and that there is even no better ſituation than A D, whether the angle of incidence A D V be increaſed or diminiſhed.

To prove it, we ſhall conſider the abſolute impulſions D K, D E, and D G, as correſponding with the ſines of incidence H I, A F, and B C, and proportional to the ſquares of theſe ſines; then, on theſe diagonal lines, if we deſcribe the rectangles X N and M O in order to reſolve thoſe total impulſions D E and D G, it will appear evident that the direct effort D X, in the direction of the keel, is the greateſt poſſible, when the tangent A S of the angle of incidence is double the tangent A R of the angle of obliquity of the ſail with the keel; for if the angle of incidence be opened 10°, by placing the ſail in the ſituation H D, it will appear that, though the total impulſion D K is augmented in the ratio of the ſquare of the new ſine of incidence H I to the firſt A F, the partial effort D M, in the direction of the keel, will be nearly one-tenth leſs in this ſituation of the ſail H D, than in the firſt A D. The direct impulſions D M, proceeding from the total ones D K and D G, are equal, becauſe theſe laſt have augmented or diminiſhed in the ſame ratio as the ſines H L and B Y have leſſened or increaſed in proportion to the ſquare of the ſine of incidence A F, and to the ſine of obliquity A T. Theſe direct partial impulſions D M and D X are in a compounded ratio of the ſines of obliquity H L, A T, B Y, equal to thoſe of the angles D K M, D E X, D G M, and of the total impulſions D K, D E, and D G; for, if the total impulſion augment by a movement of the ſail, the ſine of obliquity diminiſhes: ſo that from the total impulſions can at any time be deduced the direct ones for every poſſible angle of incidence. We might very well verify by calculation this demonſtration, which proves that the tangent A S of the angle of incidence muſt always be double the tangent A R of the angle formed between the ſail and the keel, agreeably to the ſituation of the ſail A Z; ſince if any other poſition be given to it with reſpect to the wind V, whether it be in the direction H D, 10° more open than A Z, or like B D, 10° more oblique, a reſult, as D M, in the direction of the keel, will ever be found leſs than D X.

We may here obſerve, that as the vanes always indicate the apparent direction of the wind, on all the courſes the ſhip can ſail, the angle which the wind makes with the courſe, or the keel, cannot fail being eaſily known if there is no lee-way; let that angle with the ſails be parted into two others, ſo that the angle of obliquity of the ſails with the courſe may have its tangent equal to half the tangent of the apparent angle of incidence of the wind upon the ſails. On this foundation, it will be eaſy to form a table which will always ſhew both the apparent angle of incidence, and that of the obliquity of the ſail with the keel, or with the courſe. This table will ſerve for all oblique courſes, provided the after-ſails cover thoſe forward only in a trifling degree; for, ſhould they becalm them much, they muſt, for other conſiderations, be braced up a little more to the windward; but always leave the apparent angle of incidence of the wind upon the ſail more open than that between the ſail and the keel, or the courſe.

When it is deſired to gain to windward as much as poſſible, without abſolutely wiſhing to ſail with the greateſt velocity, let the direction of the coaſt under the lee be ſuppoſed to make with the abſolute direction of the wind (which muſt as nearly as poſſible be known) an angle of 90°; or, in the ſea phraſe, *blowing dead on ſhore;* let the angle A C E, (*fig.* 2.) formed by the ſail and the keel, be known to be 30°, let the lee-way be alſo known to be 10°, the angle E C I between the ſail and the courſe will conſequently be 40°, which you muſt take from the total angle V C L 90°; then there will remain 50°, the half of which, 25°, is to be taken for the abſolute angle of incidence V C E, and for its equal I C L; ſo that the ſhip A B will go 55° from the wind when ſhe is cloſe-hauled, and will conſequently recede as much as poſſible from the point D on the coaſt, the direction of which makes an angle of 90° with the abſolute direction of the wind V K.

But, if the ſituation C L, (*fig.* 3.) of the point D, from which you wiſh to move, make an obtuſe angle V C L with the poſitive direction of the wind V M; then the tangent of the apparent angle of incidence V C E muſt be made double the angle of obliquity E C I, which the ſail makes with the courſe, at the ſame time that the angle I C L of the courſe and the coaſt ſhall be made equal to the angle V C E, formed by the real direction of the wind V K, and of the ſail F E: ſo that two conſiderations muſt at once be attended to. For example, the angle A C E, formed by the ſail and the keel, is 30°; then, according to the firſt principle, it will be neceſſary that the apparent angle of incidence V C E ſhould be 49° 6′; and if the difference between the apparent and real direction of the wind be 10°, there will be 59° 6′ for the angle which the ſail E F makes with the real direction of the wind V M: ſo that the angle L C I of the courſe, and the object ſtood from, muſt be found alſo to be 59° 6′, and the total angle L C V will then be 148° 12′, adhering to the two principles of ſailing with the greateſt velocity, and of getting to windward of the point D as much as poſſible, at the ſame time; while the angle L C V, formed by the apparent direction of the wind, and that of the coaſt from which the ſhip moves, will be only 138° 12′. The yawing and the different velocities of the ſhip render the angle formed by the two directions of the wind, (the real and the apparent,) more or leſs open. If the ſhip has more velocity at the ſame time, or if the courſe approaches more to the direction of the wind, it will appear by the vanes that the wind draws forward, and the angle of the two directions of the wind will increaſe. If the ſhip fall off, and yet ſtill preſerve the ſame velocity, or if her velocity decreaſe without altering her courſe, the wind will ſeem by the vanes to draw aft, and the angle of the two directions will be diminiſhed; ſo that whenever the ſhip ſhall have velocity, or run obliquely to the wind, there will always be a difference between its real and its apparent direction. In ſhort, if the ſhip run exactly before the wind, or have no motion at all, there will then be no other but the real direction of the wind ſhewn by the vanes: but happen how it will, in oblique courſes this is however certain, that the ſails are always ſtruck by the abſolute direction of the wind; becauſe their poſition being once fixed by the braces and bowlines, it can no more change, but continues as ſteady as the real direction of the wind; for they are the vanes only, which, being moveable, fix themſelves in a middle direction between the abſolute tendency of the wind and the courſe of the ſhip; whence we may eaſily conclude, as we did before, that the apparent direction of the wind ſhewn by the vanes, is a medium between the reſpective velocities of the ſhip and of the wind; ſince that direction neceſſarily partakes more of the greater velocity than of the leſs: ſo that if the ſhip run E. with the wind at S. having the fourth part of the velocity of the wind, the vanes will ſhew S.S.E. 4° 30′ S. for the apparent direction of the wind.

Theorem of M. Bouguer.—The velocity and real direction of the wind is C M (*fig.* 3.); ſuppoſe the ſhip A B, of which E F is the ſail ſituated at pleaſure, to draw the courſe C I, while the particles of air run in the direction C M: if, from the point I, be drawn I K, parallel to the ſail E F, till it cuts the direction of the wind V K, in the point K, there will be given the three points C, I, K, through which draw the circumference of a circle C I L K, and that circumference will ſhew the extent of the forces acting on the ſhip, at the ſame time, in following the courſe C I, provided her ſail be always trimmed in the ſame manner with reſpect to her keel.

Demonſtration.—The apparent or relative velocity of the wind is repreſented by I M (*fig.* 3.) in the courſe C I; and as I K is parallel to the ſail E F, the angle M I K is equal to the apparent angle of incidence V C E. But to be more explicit: the wind ſtrikes the ſail with its apparent or relative velocity I M, (and not with its abſolute velocity, becauſe of the motion of the ſhip,) and with an angle of incidence M I K = V C E: ſo that, if the ſhip runs cloſe-hauled or perpendicular to the direct wind V C, I M will become in both caſes ſtronger than the abſolute velocity; becauſe the ſhip will either approach to the ſource of the wind, or not recede from it. But the impulſe on the ſail is proportional to the ſquare of the velocity I M, multiplied by the ſquare of the ſine of the angle of incidence M I K, equal to the angle V C E, and the proportion M K : ſine K I M :: M I : ſine M K I, which gives us the triangle K I M, ſhews that M K × ſine M K I = M I × ſine K I M; ſquaring the two products, and ſubſtituting the ſine of the angle V K I in the room of the ſine of the angle M K I, which is equal to it, ſince they are the ſupplements of each other, we ſhall then have this other equation: ſine $\overline{VKI}^2 \times \overline{MK}^2 =$ ſine $\overline{KIM}^2 \times \overline{MI}^2$; whence it follows, that inſtead of expreſſing the actual impulſe of the wind upon the ſail by the ſquare of I M, multiplied by the ſquare of the ſine of the angle K I M, it may be expreſſed by the ſquare of M K, multiplied by the ſquare of the ſine of the angle V K I, or of its equal V C E, formed by the abſolute direction of the wind V M, and the ſail E F.

We muſt not forget to be very attentive to this; *viz.* that the impulſe of the wind upon the ſails is in equilibrium with the effort of the water on the bows, or that they are exactly equal and contrary when the ſhip is come to an uniformity of motion, as here we ſuppoſe her to be. Beſides, the impulſe of the water on the bows is proportional or equal to the ſquare of the velocity of ſailing C I, ſo that the ſquare of the velocity of ſailing C I, is equal to the actual impulſion of the wind upon the ſail expreſſed by the ſquare of K M, multiplied by the ſquare of the ſine of the angle V C E; and if S be ſuppoſed equal to the ſine of V C E, or of V K I, we ſhall always find $\overline{CI}^2 = \overline{S}^2 \times \overline{KM}^2$. The firſt term in this equation repreſents the impulſe of the water on the bows, and the ſecond expreſſes the effort of the wind upon the ſails; and if the ſquare roots of the one and of the other be taken, it will be found C I = S × K M; that is to ſay, that the very velocity of ſailing C I, will be continually equal or proportional to the product of K M by the ſine S of the angle V C E or C K I. The proportion between theſe quantities depends on the denſity of the two fluids, and on the magnitude of the ſurfaces ſtruck: but it will be the ſame in all the different courſes.

The different velocities of ſailing C I, have a conſtant and given proportion to the products S × C K and C I × ſine C I K; for the triangle C I K gives S : C I :: ſine C I K : C K, which forms this equation, S × C K = ſine C I K × C I; and all the angles C, I, K, are conſtant and known, ſince they are equal, being alternate to that which the ſail makes with the courſe. But, as the velocity C I bears a continual and conſtant proportion to the product S × K M, and as it bears alſo a conſtant proportion to S × C K, it follows that S × K M : S × C K :: K M : K C; ſo that the point K always divides C M in the ſame proportion: the point K is then invariable when the ſail, as well as the lee-way, are both the ſame; but, in admitting thoſe two hypotheſes, which never can deviate from the truth but in reſpect to the lee-way, which is always variable in the ſame ſhip, according to the different circumſtances of wind, ſea, velocity, ſail, and courſe, it ought then to be concluded that all the points, I, &c. will be ſituated on the circumference of a circle; for, without that, the angles C I K, equal to thoſe which are formed by the courſe and the ſail, and which are ſupported on the ſame chord C K, would not be equal.

Corollary.—Admitting, therefore, (*fig.* 3.) that the velocities are continually proportional to the ſines (whatever they be) of the angle V C E, which the ſail makes with the abſolute direction of the wind, provided the ſail be always trimmed in the ſame manner with reſpect to the keel, and that, in the triangle C I K, the ſide C K and the angle C I K are conſtant, and the velocities of ſailing C I are proportional to the ſine of the angle C K I equal to the angle of incidence V C E; it follows, that, all the other conditions being the ſame, the more the ſine of the angle V C E is augmented, the greater will the rate of ſailing be; ſo that, if you want to carry it to the greateſt rapidity, you have only to make a right angle of the angle V C E formed by the abſolute or real direction of the wind with the ſail; then the velocity C I will no longer be a ſimple chord in the circle C K I, but a diameter. This holds good for all the ſhips which have but one ſail ſet; but, whenever they ſhall have ſeveral, the greateſt velocity will be when the apparent angle of incidence of the wind upon the ſail makes a right angle with the courſe; becauſe then the ſails will eaſily make with the apparent wind an angle, of which the tangent will be double that of the angle they make with the courſe, without their becalming one another; while, at the ſame time, the ſhip will receive all the abſolute impulſe of the wind, becauſe ſhe does not recede from it, and it is the time when the greateſt ſurface of ſail is expoſed to its impulſe. The ſame advantage of the greateſt velocity will ſtill be had, when the apparent direction of the wind makes an angle of 100° with the courſe ; and in this ſituation, the velocity will, in ſome degree, be increaſed. In a word, whenever the after-ſails do not becalm thoſe forward, the ſhip's rapidity may always be increaſed, by trimming the ſails as there directed, but when the ſails take the wind from one another, an increaſe of velocity can no longer be pretended to.

We are now going to demonſtrate the exactneſs of the rule given before. When it is required to get off ſhore, or recede from a given right line with all poſſible expedition, or to keep abſolutely as cloſe to the wind as the ſhip will lie ; C M (*fig.* 3.) is the abſolute direction of the wind ; the circle C K L I marks all the points at which the ſhip can arrive with the ſame ſail, the ſame diſpoſition, without alteration of lee-way, and at the ſame time ; and C L is the right line from which ſhe is to move. Knowing the angle that line makes with the abſolute direction of the wind V M, it is evident that the point I of the circumference, where the courſe ought to end, is in the middle of the arc C I L, of which C L is the chord : and all the points from one part to the other of C I, where the ſhip can come to at the ſame time, are leſs diſtant from C L, ſince D I, perpendicular to C K, divides it into two equal parts, and is the longeſt of all the perpendiculars which can be drawn from the circumference C I L : but the point I cannot be taken without rendering the angle L C I equal to the angle C K I, which itſelf is equal to the angle V C E.

M. Bouguer has given the following table of the ſituation of the ſails for running with the greateſt velocity.

Angles of the apparent Direction of the Wind and Courſe.		Angles of the Sails with the Keel.		Angles of apparent Incidence of the Wind on the Sails.	
°	′	°	′	°	′
180	00	90	00	90	00
176	15	87	30	88	45
174	37	86	25	88	12
172	30	85	00	87	30
168	44	82	30	86	14
164	58	80	00	84	58
161	10	77	30	83	40
157	22	75	00	82	20
153	33	72	30	81	03
149	41	70	00	79	41
145	48	67	30	78	18
141	53	65	00	76	53
137	55	62	30	75	25
133	54	60	00	73	54
129	50	57	30	72	20
125	42	55	00	70	42
121	31	52	30	66	01
117	14	50	00	67	14
112	53	47	30	65	23
108	26	45	00	63	26
a - - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - - b
103	53	42	30	61	23
99	13	40	00	59	13
94	25	37	30	56	55
89	28	35	00	54	28
84	23	32	30	51	53
79	06	30	00	49	06
73	39	27	30	46	09
68	00	25	00	43	00

N. B. The foregoing table can be of no great ſervice, except in the eight laſt circumſtances under the line *a*, *b* ; becauſe, in all the caſes mentioned above that line, the ſails will cover one another too much.

Obſervations.—When a faſt-ſailing ſhip (ſuch as will, on a direct courſe, or right before it, take a third or a fourth part of the velocity of the wind) comes to run with the ſame quantity, or more ſail, on a perpendicular to the apparent direction of the wind, then ſhe acquires a greater rapidity of ſailing with reſpect to the velocity of the wind ; the angle made by the two directions, the apparent and the abſolute, is at that time very conſiderable ; it may be from 18° to 22° 30′ ; and if the ſhip hauls quite cloſe by the wind, the angle will ſtill be nearly the ſame ; for, her velocity diminiſhes : but, as it is in ſailing by the wind that it is moſt eſſential to know the greatneſs of the angle between the two directions of the wind, let the angle between the directions of the ſhip's head on the different tacks be obſerved, without paying any regard to the lee-way, but juſt to the exact point on which the ſhip ſtands, before and after going about, when ſtrictly by the wind, neither too much to leeward nor to windward ; and when you have determined that angle, from two or three obſervations, halve it, and then you will have the angle formed by the keel and the abſolute direction of the wind ; by which you will know the quantity ſhe will come to upon the different tacks, and will never be deceived with reſpect to the lying on after having gone about ; a miſtake pretty commonly made by thoſe who pay attention only to the apparent direction of the wind, which always makes with the real one an angle more or leſs open in a compound ratio of the greateſt velocity with the greateſt obliquity of the courſe of the ſhip, with reſpect to the direction and the abſolute velocity of the wind ; things which vary in all ſhips, becauſe they have not all the ſame advantage of ſailing with the ſame rapidity in ſimilar circumſtances.

In order to illuſtrate, by examples, the various modes of ſailing, as they depend on the different degrees and ſituations of the wind, with regard to the courſe of the veſſel, the plan of a number of ſhips proceeding on various courſes is repreſented in *Plate* II. *Navigation*, *fig.* 34, which exhibits the 32 points of the compaſs, of which C is the centre ; the direction of the wind, which is northerly, being expreſſed by the arrow.

It has been obſerved, in the article Close-hauled, that a ſhip in that ſituation will ſail nearly within ſix points of the wind. Thus, the ſhips B and *y* are cloſe-hauled, the former being on the larboard tack, ſteering E.N.E., and the latter on the ſtarboard tack, ſailing W.N.W., with their yards, *a*, *b*, braced obliquely, as ſuitable to that manner of ſailing. The line of battle, on the larboard tack, would accordingly be expreſſed by C B, and on the ſtarboard by C *y*.

When a ſhip is neither cloſe-hauled, nor ſteering afore the wind, ſhe is in general ſaid to be ſailing large. The relation of the wind to her courſe is preciſely determined by the number of points between the latter and the courſe cloſe-hauled. Thus the ſhips *c* and *x* have the wind one point large, the former ſteering E. by N. and the latter W. by N. The yards remain almoſt in the ſame poſition as in B and *y* ; the bowlines and ſheets of the ſails being only a little ſlackened.

The ſhips *d* and *u* have the wind two points large, the one ſteering E. and the other W. In this manner of ſailing, however, the wind is more particularly ſaid to be upon the beam, *perpendiculaire du vent*, as being at right angles with the keel, and coinciding with the poſition of the ſhip's beams. The yards are now more acroſs the ſhip, and the bowlines are caſt off, and the ſheets more relaxed; ſo that the effort of the wind being applied nearer to the line of the ſhip's courſe, her velocity is greatly augmented.

In *e* and *t* the ſhips have the wind three points large, or one point abaft the beam, the courſe of the former being E. by S. and that of the latter W. by S. The ſheets are ſtill more flowing; the angle which the yards make with the keel farther diminiſhed; and the courſe accelerated in proportion.

The ſhips *f* and *s*, the firſt of which ſteers E.S.E. and the ſecond W.S.W. have the wind four points large, or two points abaft the beam. In *g* and *r* the wind is five points large, or three points abaft the beam, the former ſailing S.E. by E. and the latter S.W. by W. In both theſe ſituations the ſheets are ſtill farther ſlackened, and the yards laid yet more athwart the ſhip's length, in proportion as the wind approaches the quarter.

The ſhips *h* and *q*, ſteering S.E. and S.W., have the wind ſix points large, or more properly on the quarter; which is conſidered as the moſt favourable manner of ſailing, becauſe all the ſails co-operate to increaſe the ſhip's velocity; whereas, when the wind is right aft, as in the ſhip *m*, it is evident that the wind, in its paſſage to the foremoſt ſails, will be intercepted by thoſe which are farther aft. When the wind is on the quarter, the fore-tack is brought to the cat-head; and the main-tack being caſt off, the weather-clue of the main-ſail is hoiſted up to the yard, in order to let the wind paſs freely to the fore-ſail; and the yards are diſpoſed ſo as to make an angle of about two points, or nearly 22°, with the keel.

The ſhips *i* and *p*, of which the former ſails S.E. by S. and the latter S.W. by S. are ſaid to have the wind three points on the larboard or ſtarboard quarter; and thoſe expreſſed by *k* and *o*, two points; as ſteering S.S.E. and S.S.W., in both which poſitions the yards make nearly an angle of 16°, or about a point and a half, with the ſhip's length.

When the wind is one point on the quarter, as in the ſhips *l* and *n*, whoſe courſes are S. by E. and S. by W., the ſituation of the yards and ſails is very little different from the laſt-mentioned; the angle which they make with the keel being ſomewhat leſs than a point, and the ſtay-ſails being rendered of very little ſervice. The ſhip *m* ſails right afore the wind, or with the wind right aft. In this poſition the yards are laid at right angles with the ſhip's length; the ſtay-ſails, being entirely uſeleſs, are hauled down; and the main-ſail is drawn up in the brails, that the fore-ſail may operate; a meaſure which conſiderably facilitates the ſteerage, or effort of the helm. As the wind is then intercepted, by the main-top-ſail and main-top-gallant-ſail, in its paſſage to the fore-top-ſail and fore-top-gallant-ſail, theſe latter are by conſequence entirely becalmed, and might therefore be furled, to prevent their being fretted by flapping againſt the maſt, but that their effort contributes greatly to prevent the ſhip from broaching-to, when ſhe deviates from her courſe to the right or left of them.

Thus all the different methods of ſailing may be divided into four, *viz.* cloſe-hauled, large, quartering, and afore the wind; all which relate to the direction of the wind to the ſhip's courſe, and the arrangement of the ſails. See DRIFT and LEEWAY.

SAILING, *Order of*, denotes the general diſpoſition of a fleet of ſhips, when proceeding on a voyage or expedition. See FLEET and *Naval* TACTICS.

SAILING *Cove*, in *Geography*, a bay on the S. coaſt of Newfoundland; ſix miles N. of cape Pine.

SAILLAGOUSE, a town of France, in the department of the Eaſtern Pyrenées, and chief place of a canton, in the diſtrict of Prades. The town contains 326, and the canton 6618 inhabitants, on a territory of 477½ kiliometres, in 24 communes.

SAILLANS, a town of France, in the department of the Drôme, and chief place of a canton, in the diſtrict of Dié; nine miles S.W. of Dié. The place contains 1490, and the canton 4448 inhabitants, on a territory of 230 kiliometres, in 14 communes.

SAILLY, a town of France, in the department of the Upper Marne, and chief place of a canton, in the diſtrict of Waſſy. The place contains 259, and the canton 5891 inhabitants, on a territory of 252½ kiliometres, in 24 communes.—Alſo, a town of France, in the department of the Moſelle; 12 miles S.E. of Metz.

SAILLY *ſur Lys*, a town of France, in the department of the Straits of Calais; eight miles N.E. of Bethune.

SAILLY *le Sec*, a town of France, in the department of the Somme; ſix miles N.N.W. of Abbeville.

SAILOOR, a town of Hindooſtan; 18 miles E. of Coimbetore.

SAILOR, a perſon trained in the exerciſe of fixing the machinery of a ſhip, and managing her, either at ſea, or in a road or harbour. See MARINER.

SAILOR's *Horn*, in *Geography*, a cape of Denmark, on the W. coaſt of Jutland. N. lat. 55° 32′. E. long. 8° 3′.

SAIL-YARD. See YARD.

SAIM, in *Farming*, a term provincially applied to the fatty ſubſtance from which hog's-lard is made. It is properly the unrendered fat which is taken out of fattened hogs.

SAIMA, in *Geography*, a conſiderable lake, partly in the Swediſh government of Savolax, and partly in the Ruſſian government of Viborg; 200 miles in length, and full of mountainous iſlands. The river Vokſa forms a communication between it and lake Ladoga. N. lat. 46° 15′ to 46° 50′. E. long. 27° 14′ to 28° 44′.

SAIN, a ſmall iſland near the coaſt of France, oppoſite to the S. point of Breſt harbour.

SAINCTES, CLAUDE DE, in *Biography*, a learned French prelate, was born in the province of Perche, in the year 1525. At the age of 15 he was admitted a canon-regular in the abbey of St. Cheron, near Chartres, where his love of ſtudy recommended him to the patronage of the cardinal de Lorrain, who placed him in the college of Navarre at Paris. In this ſeminary he went through ſeveral courſes of ſtudy with conſiderable applauſe, and very much diſtinguiſhed himſelf as a diſputant. Having entered into prieſt's orders, and taken his degree of doctor of divinity, he was preſented to the benefice of Belleville-le-Comte, in the dioceſe of Chartres, and in 1561 he was made principal of the college of Boiſſy at Paris. He was now, by the recommendation of his patron, employed by queen Catharine de Medici, as a champion for the Catholic cauſe, in the famous conference of Poiſſy. He acquitted himſelf ſo well on this occaſion, that he was ſelected by king Charles IX. to be one of the twelve doctors who were ſent to attend the council of Trent. The ſervices which he rendered the Catholic cauſe againſt the Proteſtants, were conſidered as ſo very meritorious, that in 1575 king Henry III. made him biſhop of Evreux. His zeal againſt the heretics was equalled by the fury with which he ſupported the intereſts of the *league*, whoſe forces he introduced into his epiſcopal city. Being afterwards taken priſoner by the troops of Henry IV. his papers were examined, and among them was found an argument to juſtify the aſſaſſination of Henry III., for which he was tried and capitally condemned; but the ſentence of death was commuted for perpetual impriſonment. He died in the caſtle of Crevecœur, in 1591, at about the age of 66 years. He was author of many works, but the moſt conſiderable was a treatiſe, written in the Latin language, "On the Euchariſt;" and an edition of a curious collection, entitled "Liturgiæ ſive Miſſæ Sanctorum Patrum; Jacobi Apoſtoli, et fratris Domini, Baſilii magni, Johannis Chryſoſtomi." A liſt of all the works of this author may be found in Dupin.

SAINFOIN, in *Botany*, &c. See Saintfoin.

SAINS, in *Geography*, a town of France, in the department of the Aiſne, and chief place of a canton, in the diſtrict of Vervins; ſeven miles W. of Vervins. The place contains 1800, and the canton 11,217 inhabitants, on a territory of 187½ kiliometres, in 21 communes.—Alſo, a town of France, in the department of the Somme, and chief place of a canton, in the diſtrict of Amiens. The place contains 606, and the canton 10,448 inhabitants, on a territory of 185 kiliometres, in 21 communes.

SAINT, a river of North Wales, which runs into the Menai, at Carnarvon.

Saint, or *Biolai*, a cape of Ruſſia, in the Frozen ocean. N. lat. 74° 15′. E. long. 132° 14′.

Saint, a town on the N.W. coaſt of Borneo. N. lat. 2° 51′. E. long. 111° 50′.

St. *Abb's Head.* See Abb's *Head.*

St. *Adrian.* See Adrian.—Alſo, a town of France, in the department of the Lys; three miles N.E. of Bruges. —St. *Adrian.* See Sierra *d'Adriana.*—St. *Ægidius*, or St. *Gilling*, a town of Salzburg, on the Aber See; 14 miles E.S.E. of Salzburg.—St. *Afrique.* See Afrique.—St. *Agata*, a town of Italy, in the department of the Lower Po; nine miles S.W. of Cento.—Alſo, a town of Naples, in Calabria Citra; 17 miles N.W. of Biſignano.—Alſo, a town of Naples, in Calabria Ultra; ſix miles S.E. of Reggio.—St. *Agata di Gothi*, a town of Naples, in Principato Ultra; the ſee of a biſhop, ſuffragan of Benevento, containing eight pariſh churches, one abbey, and three monaſteries; 15 miles W.S.W. of Benevento.—St. *Agathona*, a ſmall iſland of Ruſſia, in the North Pacific ocean. N. lat. 63° 55′. E. long. 189° 14′.—St. *Agnan*, a town of France, in the department of the Dordogne; 15 miles E.N.E. of Perigueux.—St. *Agnes.* See Agnes.—St. *Agnola*, a town of the duchy of Urbino; five miles S.W. of Peſaro.—St. *Agoſtino*, a town of Naples, in Principato Citra; 21 miles N. of Policaſtro.—Alſo, a town of New Navarre; 35 miles S. of Caſa Grande.—St. *Agrêvé*, a town of France, in the department of the Ardêche, and chief place of a canton, in the diſtrict of Tournon; 18 miles W. of Tournon. The place contains 2537, and the canton 7552 inhabitants, on a territory of 205 kiliometres, in eight communes.—St. *Aguſtino*, a ſmall iſland near the coaſt of Braſil. S. lat. 8° 30′. —St. *Aignan*, a town of France, in the department of the Lower Charente, and chief place of a canton, in the diſtrict of Marennes. The place contains 845, and the canton 6039 inhabitants, on a territory of 205 kiliometres, in 11 communes. —Alſo, a town of France, in the department of the Loir and Cher, and chief place of a canton, in the diſtrict of Blois; 19 miles S. of Blois. The place contains 2494, and the canton 10,673 inhabitants, on a territory of 325 kiliometres, in 15 communes. N. lat. 48° 15′. E. long. 1° 27′.—St. *Aignan-ſur-Roé*, a town of France, in the department of Mayenne, and chief place of a canton, in the diſtrict of Chateau-Gonthier. The place contains 500, and the canton 7544 inhabitants, on a territory of 230 kiliometres, in 12 communes.—St. *Alban*, a town of France, in the department of the Lozere, and chief place of a canton, in the diſtrict of Marvejols; 4½ miles E. of St. Chely. The place contains 3158, and the canton 4590 inhabitants, on a territory of 150 kiliometres, in 3 communes.—Alſo, a town of France, in the department of the Gard, with a mineral ſpring; 3 miles S. of St. Alais.—Alſo, a town of France, in the department of Mont Blanc; 6 miles W. of Chambery.—St. *Albans.* See *St.* Albans.—St. *Albrecht*, a town of Pruſſia, in the province of Samland; 6 miles N. of Pillau.—Alſo, a town of Pomerelia; 5 miles S. of Dantzick.—St. *Alphonſo.* See *St.* Alphonso.—St. *Alvère*, a town of France, in the department of the Dordogne, and chief place of a canton, in the diſtrict of Bergerac; 15 miles S. of Perigueux. The place contains 1805, and the canton 7164 inhabitants, on a territory of 142½ kiliometres, in 9 communes.—St. *Amand.* See Amand.—Alſo, a town of France, in the department of the Cher, and principal place of a diſtrict; 21 miles S. of Bourges. N. lat. 46° 43′. E. long. 2° 35′. See Amand.—Alſo, a town of France, in the department of the Nievre, and chief place of a canton, in the diſtrict of Coſne; 9 miles N.E. of Coſne. The place contains 1430, and the canton 6456 inhabitants, on a territory of 195 kiliometres, in 7 communes.—Alſo, a town of France, in the department of the Lozere, and chief place of a canton, in the diſtrict of Mende; 9 miles N. of Mende. The place contains 3382, and the canton 7637 inhabitants, on a territory of 280 kiliometres, in 10 communes.—Alſo, a town of France, in the department of the Loire and Cher, and chief place of a canton, in the diſtrict of Vendôme; 14 miles N.W. of Blois. The place contains 435, and the canton 5678 inhabitants, on a territory of 197½ kiliometres, in 14 communes.—St. *Amand de Boueux*, a town of France, in the department of the Charente, and chief place of a canton, in the diſtrict of Angoulême; 9 miles N. of Angoulême. The place contains 1408, and the canton 10,404 inhabitants, on a territory of 190 kiliometres, in 17 communes.—Alſo, a town of France, in the department of the Puy de Dôme; 2 miles N.W. of Ambert.—Alſo, a town in the ſame department; 7 miles S. of Clermont.—Alſo, a town in the department of the Marne; 6 miles N. of Vitry le Français. —St. *Amand de Valboret*, a town of France, in the department of the Tarn; 13 miles S.E. of Caſtres.—St. *Amans*, a town of France, in the department of the Tarn, and chief place of a canton, in the diſtrict of Caſtres; 13 miles S.E. of Caſtres. The place contains 2014, and the canton 6959 inhabitants, on a territory of 182½ kiliometres, in 6 communes.—St. *Amans des Copts*, a town of France, in the department of the Aveiron, and chief place of a canton, in the diſtrict of Eſpalion; 21 miles N. of Rhodez or Rodes. The place contains 746, and the canton 6160 inhabitants, on a territory of 195 kiliometres, in 13 communes.—St. *Amant-Roche-Savine*, a town of France, in the department of the Puy de Dôme, and chief place of a canton, in the diſtrict of Ambert. The place contains 1874, and the canton 6189 inhabitants, on a territory of 82½ kiliometres, in 5 communes.—St. *Amant-Tallende*, a town in the ſame department, and chief place of a canton, in the diſtrict of Clermont. The place contains 1712, and the canton 10,290 inhabitants, on a territory of 167½ kiliometres, in 8 communes.—St. *Amarin*, a town of France, in the department of the Upper Rhine, and chief place of a canton, in the diſtrict of Befort; 15 miles N. of Befort. The place contains 1398, and the canton 9822 inhabitants, on a territory of 217½ kiliometres, in 16 communes.—St. *Amaro*, a river of Braſil, which runs into the Atlantic, S. lat. 24°.—Alſo, a river of Braſil, which runs into the Atlantic, S. lat. 16° 55′.—Alſo, a town of Braſil, on a river of the ſame name; 50 miles S. of Porto Seguro.

—St. *Ambrogio,* a town of France, in the department of the Po; two miles N. of Avigliano.—Alſo, a town of Italy, in the Veroneſe; ſix miles N.N.W. of Verona.—St. *Ambroix,* a town of France, in the department of the Gard, and chief place of a canton, in the diſtrict of Alais; nine miles N.N.E. of Alais. The place contains 2250, and the canton 10,440 inhabitants, on a territory of 272½ kiliometres, in 15 communes.—St. *Ambroſe,* a ſmall iſland in the Pacific ocean, near the coaſt of Chili, being one of the group called St. Felix.—St. *Amour,* a town of France, in the department of the Jura, and chief place of a canton, in the diſtrict of Lons-le-Saulnier; 16 miles S. of it. The place contains 2700, and the canton 8498 inhabitants, on a territory of 105 kiliometres, in 21 communes.—St. *Anaſtaſia,* an iſland in the Atlantic, near the E. coaſt of Eaſt Florida, 18 miles long, and from one to three wide. N. lat. 29° 48′. W. long. 82° 36′.—St. *Anatoglia,* a town of Naples, in Abruzzo Ultra; 13 miles S.S.W. of Aquila.—St. *Andero.* See Santander.—St. *André,* a town of France, in the department of the Lower Alps, and chief place of a canton, in the diſtrict of Caſtellane; ſix miles N. of Caſtellane. The place contains 581, and the canton 2845 inhabitants, on a territory of 457½ kiliometres, in 10 communes.—Alſo, a town of France, in the department of the Eure, and chief place of a canton, in the diſtrict of Evreux; 9 miles S.S.E. of Evreux. The place contains 680, and the canton 13,032 inhabitants, on a territory of 265 kiliometres, in 42 communes.—Alſo, a town of the duchy of Carinthia, on the river Lavant, the ſee of a biſhop; 20 miles E.N.E. of Clagenfurt. N. lat. 46° 47′. E. long. 14° 32′.—Alſo, a town of Auſtria, four miles W. of Cloſter Neuburg.—Alſo, a ſmall iſland in the Adriatic; 16 miles W. of Liſſa.—Alſo, a ſmall iſland, ſurrounded with rocks, in the Spaniſh Main. N. lat. 12° 30′. W. long. 80° 55′.—Alſo, a town in the northern part of the iſland of Palma, well ſituated, handſome though ſmall.—Alſo, a town of Mexico, in the province of Chiapa.—Alſo, a town of France, in the department of Mont Blanc, on the Sier; ſix miles S.E. of Seiſſel.—Alſo, a town in the ſame department, on the Arch, near mount Cenis; 38 miles E.S.E. of Chambery.—St. *André de Culſac,* a town of France, in the department of the Gironde, and chief place of a canton, in the diſtrict of Bourdeaux; 13 miles N. of Bourdeaux. The place contains 2579, and the canton 7761 inhabitants, on a territory of 105 kiliometres, in 11 communes.—St. *André de la Marche,* a town of France, in the department of the Maine and Loire; ſix miles N.W. of Chollet.—St. *André en Royans,* a town of France, in the department of the Iſere; four miles S. of St. Marcellin.—St. *André de Rozans,* a town of France, in the department of the Higher Alps; nine miles W.S.W. of Serres.—St. *André de Sangonis,* a town of France, in the department of the Herault; four miles E.N.E. of Clermont.—St. *André de Valbergue,* a town of France, in the department of the Gard; 12 miles N. of Le Vigan.—St. *Andrea,* a town of the iſland of Sardinia; 13 miles E. of Cagliari.—Alſo, a ſmall iſland in the gulf of Venice, near the coaſt of Iſtria. N. lat. 45° 8′. E. long. 13° 43′. See *St.* Andrew.—Alſo, a town of Naples, in the province of Otranto; three miles W. of Tarento.—St. *Andreas,* a town of the duchy of Carinthia; three miles S. of Ebernſtein. See *St.* Andrew.—Alſo, a town of France, in the department of the Dordogne; 12 miles N. of Bourdeaux.—St. *Andreas Berg,* a town of Weſtphalia, in the Hartz Foreſt, on a mountain near the Oder, in which there are a ſmelting-houſe for ſilver, and a manufacture of powder-blue; 10 miles S.S.E. of Goſlar.—St. *Andreia,* a ſmall iſland in the North Pacific ocean. N. lat. 62° 25′. E. long. 188° 14′.—St. *Andres,* a town of the iſland of Cuba; 55 miles N. of St. Jago.—Alſo, a town of New Navarre; 32 miles W. of Caſa Grande.—Alſo, a town of South America, in the audience of Quito; eight miles N. of St. Joachim de Omaguas.—St. *Andrew,* a river of Guinea, which runs into the Atlantic, N. lat. 4° 55′. W. long. 6° 20′.—Alſo, a town of Hungary, on an iſland of the ſame name, in the Danube; 10 miles N. of Buda.—Alſo, a town in America. See *St.* Andrew.—St. *Andrew's bay, cape, iſland, point, river, ſound.* See *St.* Andrew.—St. *Andrew's iſlands,* two ſmall iſlands in the North Pacific ocean, firſt diſcovered in 1710; afterwards by Capt. Carteret in 1767; dangerous to navigators, and lying N. and S. about half a league apart. S. lat. 5° 28′. E. long. 131° 18′.—St. *Andrew's,* a river of Weſt Florida, which runs into a bay of the Atlantic, to which it gives name. See *St.* Andrew's.—St. *Andrew's,* a town and univerſity in Scotland. See *St.* Andrew's.—St. *Angel,* a town of France, in the department of the Corrèze; three miles from Uſſel.—St. *Angelo,* a town of Auſtria, in the county of Goritz; 12 miles S.E. of Goritz.—Alſo, a town of Naples, in Lavora; nine miles S.E. of Naples.—Alſo, a town of Naples, in Principato Citra; 60 miles N. of Policaſtro.—Alſo, a town of Naples, in Abruzzo Ultra; 10 miles E.S.E. of Teramo.—Alſo, a town of Naples, in Bari; 8 miles S.S.E. of Bittetto.—Alſo, a town of Naples, in Baſilicata; 10 miles N.N.E. of Lauria.—Alſo, a town of Naples, in Calabria Citra; eight miles W.S.W. of Cariati Vecchia.—Alſo, a town of Italy, in the Lodeſan; ſix miles S.S.W. of Lodi.—Alſo, a town of Naples, in Calabria Citra; three miles N.E. of Scalea.—Alſo, a mountain of Carniola; four miles N. of Duino.—St. *Angelo di Lombardi,* a town of Naples, in Principato Citra, once the ſee of a biſhop; ſix miles N.W. of Conza.—St. *Angelo di Vado,* a town of Italy, in the duchy of Urbino, the ſee of a biſhop, ſuffragan of Urbino; 12 miles S.W. of Urbino. N. lat. 43° 43′. E. long. 12° 28′.—St. *Angelon,* a town of Naples, in Baſilicata; 13 miles S.S.W. of Matera.—St. *Ann,* a town of the iſland of Cuba; 36 miles E. of Havanna.—Alſo, a town of the iſland of Guadaloupe, on the S. coaſt. N. lat. 16° 21′. W. long. 61° 27′.—St. *Ann,* or *Annimpig lake,* a lake of Canada. N. lat. 49° 30′. W. long. 88° 15′.—St. *Ann,* a town of Canada, on the right bank of the river St. Lawrence. N. lat. 46° 36′. W. long. 72° 2′.—Alſo, a river of Canada, which runs into the St. Lawrence, N. lat. 46° 38′. W. long. 72° 4′.—Alſo, a town of Canada, on the left bank of the St. Lawrence. N. lat. 47° 2′. W. long. 70° 53′.—St. *Ann, bay, cape, fort, harbour, lake, point, town.* See *St.* Ann.—St. *Anna,* a town of the duchy of Holſtein; 3 miles N.E. of Lunden.—Alſo, a river of Braſil, which runs into the Atlantic, S. lat. 2° 20′. W. long. 45° 10′.—Alſo, a river of Braſil, which runs into the Atlantic, S. lat. 22° 10′.—Alſo, a river of Mexico, which runs into the gulf of Mexico, N. lat. 18° 15′. W. long. 94° 50′.—Alſo, a town of New Mexico, in the province of Mayo; 110 miles E.N.E. of Santa Cruz.—Alſo, a town of Italy, in the department of the Rubicon; 6 miles S.W. of Ravenna.—Alſo, a ſmall iſland in the Atlantic, near the coaſt of Africa, S.E. of St. Thomas.—Alſo, a ſmall iſland in the Atlantic, near the coaſt of Braſil; 20 miles N.E. of Maranhao.—Alſo, a town of Braſil, in the government of Ilheos; 20 miles S.W. of St. Jorge.—Alſo, a town of South America, in the government of Buenos Ayres; 205 miles E. of Corrientes.—St. *Anna-ter-Muyden,* a town of Flanders; 2 miles W. of Sluys.—St. *Annaperg,* a town of Auſtria; 28

miles S. of St. Polten.—St. *Ann's Bay*, &c. See *St.* ANN'S.—St. *Ann's Head*, a cape on the S.E. coaſt of the Iſle of Man; 5 miles N.E. of Longneſs Point.—St. *Ann's Iſlands*, three ſmall iſlands in the bay of St. Luis de Maranhao.—St. *Ann's Point*, a cape on the S. coaſt of Cornwall. N. lat. 50° 8′. W. long. 4° 52′.—St. *Anne*, a town of the iſland of Marigalante. N. lat. 15° 54′. W. long. 60° 58′.—St. *Anne's River*, a river of Canada, which runs into the St. Lawrence, 30 miles above Quebec.—St. *Anne's bay, cape, foreland, gulf, harbour, iſland.* See *St.* ANNE'S.—St. *Antheme*, a town of France, in the department of the Puy de Dome, and chief place of a canton, in the diſtrict of Ambert; 7 miles E. of Ambert. The place contains 3007, and the canton 6284 inhabitants, on a territory of 135 kiliometres, in five communes.—St. *Anthony*. See *St.* ANTHONY.—St. *Antioco*, anciently *Enoſis*, an iſland about two miles from the S.W. coaſt of Sardinia, 14 miles long and from two to four wide. N. lat. 39° 6′. E. long. 8° 34′.—St. *Antoine*, a town of France, in the department of the Iſere; 4 miles W.N.W. from St. Marcellin.—St. *Antouin*, a town of France, in the department of the Aveiron, and chief place of a canton, in the diſtrict of Villefranche; 21 miles N.W. of Alby. The place contains 5396, and the canton 12,857 inhabitants, on a territory of 210 kiliometres, in 21 communes.—St. *Antonio*. See *St.* ANTHONY.—St. *Antonio*, a town of Iſtria; 3 miles S.E. of Capo d'Iſtria.—Alſo, a cape on the N. coaſt of the iſland of Rhodes; 8 miles N.W. of Rhodes.—Alſo, a town in the iſland of Cuba; 25 miles S.W. of the Havanna.—Alſo, a town of Peru, in the dioceſe of La Paz; 25 miles W. of Chucuito.—Alſo, a town of New Granada; 40 miles N. of Pamplona.—Alſo, a river of Braſil, which runs into the Atlantic, S. lat. 15° 25′.—Alſo, a town of Paraguay; 330 miles E. of Aſſumption.—Alſo, a town of South America, in the province of Cordova; 70 miles N. of Cordova.—Alſo, a town of South America, in the province of Tucuman; 18 miles N. of St. Jago del Eſtero.—Alſo, a town of South America, in the province of Carthagena; 40 miles S. of Tolu.—Alſo, a town of Braſil, on a river of the ſame name, near the coaſt of the Atlantic; 50 miles N. of Porto Seguro.—Alſo, a river of Mexico, which runs into the Spaniſh Main, N. lat. 9° 33′. W. long. 82° 48′. For other towns, &c. of this name, ſee *St.* ANTONIO.—St. *Antonio de Amaguajes*, a town of South America, in Popayan; 100 miles E.S.E. of Paſto.—St. *Antonio de Senecu*, a town of New Mexico; 150 miles S. of Santa Fé.—St. *Antonio de Uruba*, a town of Braſil, in the government of Ilheos, on the river Franciſco; 200 miles W. of St. Salvador.—St. *Antonio in der Heyde*, a town of France, in the department of the Roer; 14 miles N.W. of Duſſeldorf.—St. *Antonio de Laredo*, a ſea-port town of Spain, in Biſcay, near a mountain of the ſame name; 12 miles W. of Laredo.—St. *Antonio de Cabo*. See ANTONIO.—St. *Antonio Cloſter*, or *Tonnieſtein*, a town of France, in the department of the Rhine and Moſelle; 4 miles N.W. of Andernach.—St. *Arcangelo*, a town of Naples, in Baſilicata; 14 miles W. of Turſi.—St. *Arnould*, a town of France, in the department of the Seine and Oiſe; 27 miles S.S.W. of Paris.—St. *Arſiero*, a town of Naples, in Principato Citra; 16 miles N.N.W. of Policaſtro.—St. *Aſaph*. See *St.* ASAPH, inſerting in that article *Bagot* for *Shipley*.—St. *Aſtier*, a town of France, in the department of the Dordogne; 9 miles S.W. of Perigueux.—St. *Aubin*, a town of Jerſey, ſituated on a bay of its name (ſee AUBIN), with a ſafe harbour, defended by a caſtle; 3 miles W. of St. Helier. See JERSEY.—St. *Aubin*, a town of France, in the department of the Aveiron, and chief place of a canton, in the diſtrict of Villefranche. The place contains 2935, and the canton 10,827 inhabitants, on a territory of 190 kiliometres, in 16 communes.—Alſo, a town of France, in the department of the Jura; 7 miles S.W. of Dole.—Alſo, a town of France, in the department of the Meuſe; 10 miles E.S.E. of Bar-le-Duc.—St. *Aubin d'Arquenay*, a town of France, in the department of the Calvados; 4 miles N.N.E. of Caen.—St. *Aubin d'Aubigné*, a town of France, in the department of the Ille and Vilaine, and chief place of a canton, in the diſtrict of Rennes; 9 miles N. of Rennes. The place contains 106, and the canton 12,476 inhabitants, on a territory of 235 kiliometres, in 14 communes.—St. *Aubin du Cormier*, a town of France, in the department of the Ille and Vilaine, and chief place of a canton, in the diſtrict of Fougeres; 9 miles S.W. of it. The place contains 1102, and the canton 8832 inhabitants, on a territory of 185 kiliometres, in 10 communes.—St. *Aubin de Luigné*, a town of France, in the department of the Maine and Loire; 9 miles S.W. of Angers.—St. *Aubin de Terre Gâte*, a town of France, in the department of the Channel; 9 miles S. of Avranches.—St. *Aubin des Ponts de Cês*, a town of France, in the department of the Maine and Loire; 3 miles S. of Angers.—St. *Avé*, a town of France, in the department of the Morbihan; 2 miles N. of Vannes.—St. *Augel*, a town of France, in the department of the Correze; 5 miles S.S.W. of Uſſel.—St. *Auguſtin*, a town of the iſland of Cuba; 30 miles S.E. of Havanna.—Alſo, a town of Canada, on the river St. Lawrence; 10 miles S.W. of Quebec.—Alſo, a mountain on the W. coaſt of North America, at the entrance of Cook's river.—St. *Auguſtine*. See *St.* AUGUSTINE.—For *Bay and Cape*, ſee the ſame.—St. *Avit*, a town of France, in the department of the Gers; 5 miles N. of Lectoure.—St. *Aulaye*, a town of France, in the department of the Dordogne, and chief place of a canton, in the diſtrict of Riberac, 9 miles S.W. of it. The place contains 1064, and the canton 8914 inhabitants, on a territory of 302½ kiliometres, in 14 communes.—St. *Avold*, a town of France, in the department of the Moſelle, and chief place of a canton, in the diſtrict of Sarraguimines; 9 miles E. of Metz. The place contains 3340, and the canton 11,211 inhabitants, on a territory of 180 kiliometres, in 26 communes. N. lat. 48° 9′. E. long. 6° 48′.—St. *Auſtin*, a lake of America, in the ſtate of Vermont; 30 miles N. of Bennington.—St. *Auſtle*. See AUSTIL.—St. *Ay*, a town of France, in the department of the Loiret, on the Loire; 6 miles S.W. of Orleans.

St. *Babel*, a town of France, in the department of the Puy de Dome; 13 miles E. of Brioude.—St. *Baldrin's Cradle*, a cape of Scotland, on the N.E. coaſt of the county of Haddington; 3 miles N.W. of Dunbar.—St. *Barbara*, a river of Africa, which runs into the Atlantic, N. lat. 4° 40′. E. long. 5° 52′.—Alſo, a ſea-port, on the E. coaſt of the iſland of Curaçao.—Alſo, a town of the iſland of Sardinia; 14 miles S.S.W. of Cagliari.—Alſo, a town of the duchy of Stiria; 4 miles N.N.W. of Pettau.—St. *Barbara, bay, canal, channel, iſland,* and *town of.* See *St.* BARBARA.—St. *Barbe*, a town of France, in the department of the Voſges; 18 miles N.E. of Epinal.—Alſo, a channel in the Straits of Magellan, on the ſide of Terra del Fuego. S. lat. 53° 55′. W. long. 72°.—St. *Barbe*, or *Purling*, a ſmall iſland in the Eaſt Indian ſea. N. lat. 0° 2′. E. long. 107° 36′.—St. *Barbe, iſlands and town of.* See *St.* BARBE.—St. *Barnabas*. See BARNABAS and BARNABE.—St. *Barthelemy*, a town of France, in the department of the Lot and Garonne; 8 miles N. of Tonneins.—St. *Bartholome*, a town of Bavaria, near the Konigſee; 7 miles S.S.W.

S.S.W. of Berchteſgaden.—St. *Bartholomeo,* a town of Mexico, in the province of Chiapa, peopled chiefly with Indians.—Alſo, a town of Naples, in Otranto; 19 miles E.S.E. of Matera.—Alſo, a town of Naples, in Capitanata; 6 miles S. of Volturara.—Alſo, a town of South America, in the audience of Quito, on the river Napo; 5 miles N.W. of St. Joſef de Hualés.—St. *Bartholomeo de Xongopani,* a town of New Mexico.—St. *Bartholomew.* See *St.* Bartholomew.—Alſo, a river of Africa, which runs into the Atlantic, N. lat. 4° 40′. E. long. 6°.—St. *Bartolomeo,* a town of Granada, on the Madalena; 100 miles N. of Mariquita.—Alſo, a town of New Navarre; 20 miles W. of Caſa Grande.—St. *Baſile.* See *St.* Basile.—St. *Batello.* See *St.* Batello.—St. *Baume.* See *St.* Baume.—St. *Bauzely,* a town of France, in the department of the Aveiron, and chief place of a canton, in the diſtrict of Milhau; 6 miles N.W. of it. The place contains 823, and the canton 5850 inhabitants, on a territory of 242½ kiliometres, in 12 communes.—St. *Bazeille,* a town of France, in the department of the Lot and Garonne; 1 mile N.W. of Marmande.—St. *Bauzille de Putois,* a town of France, in the department of the Herault; 18 miles N. of Montpellier.—St. *Beat,* a town of France, in the department of the Upper Garonne, on the river Garonne; the houſes of which are built of marble, no other ſtone being found in that neighbourhood; 32 miles S.E. of Tarbes.—Alſo, *Mountains of.* See *St.* Beat.—St. *Bees-head.* See *St.* Bees-*Head.*—St. *Bel.* See *St.* Bel.—St. *Bellino.* See *St.* Bellino.—St. *Benedetto.* See *St.* Benedetto.—St. *Benedict.* See *St.* Benedict.—St. *Benin d'Azy,* a town of France, in the department of the Nievre, and chief place of a canton, in the diſtrict of Nevers. The place contains 1583, and the canton 10,565 inhabitants, on a territory of 350 kiliometres, in 21 communes.—St. *Benito.* See *St.* Benito.—St. *Benoiſt.* See *St.* Benoist.—St. *Bernard.* See *St.* Bernard.—St. *Bernardino,* a ſmall iſland among the Philippines, near the coaſt of Luçon. N. lat. 12° 54′. E. long. 124° 14′.—St. *Bernardo.* See *St.* Bernardo.—Alſo, a ſmall iſland in the lake of Nicaragua; 12 miles N.W. of St. Sebaſtian.—Alſo, a cluſter of ſmall iſlands in the Spaniſh Main. N. lat. 9° 36′. W. long. 75° 46′.—St. *Berthevin.* See *St.* Berthevin.—St. *Bertel,* a town of Sweden, in the government of Abo; 30 miles E. of Abo.—St. *Bertrand de Comminges.* See *St.* Bertrand, &c.—St. *Biagio.* See *St.* Biagio.—St. *Biaſi.* See *St.* Biasi.—St. *Blain,* a town of France, in the department of the Upper Marne, and chief place of a canton, in the diſtrict of Chaumont; 15 miles N.E. of Chaumont. The place contains 486, and the canton 5021 inhabitants, on a territory of 205 kiliometres, in 15 communes.—St. *Blaiſe.* See *St.* Blaise.—St. *Blancat.* See *St.* Blancat.—St. *Blas.* See *St.* Blas.—St. *Blaſe.* See *St.* Blase.—St. *Bonifacio,* a town of Italy, in the Veroneſe; 15 miles E. of Verona.—St. *Bonnet.* See *St.* Bonnet.—St. *Borja,* a town of South America, in the province of Moxes; 100 miles N.W. of Trinidada.—St. *Boy.* See *St.* Boy.—St. *Brances.* See *St.* Brances.—St. *Branchier.* See *St.* Branchier.—St. *Brelade's Bay.* See *St.* Brelade's.—St. *Briac.* See *St.* Briac.—St. *Brice.* See *St.* Brice.—St. *Bride's Bay.* See *St.* Bride's, &c.—St. *Brieuc.* See *St.* Brieuc.—St. *Briſſon.* See *St.* Brisson.—St. *Buenventura,* a town of Peru, in the dioceſe of Lima; 35 miles E. of Naſca.—St. *Buono,* a town of Naples, in Abruzzo Citra; 15 miles N.E. of Civita Borella.

St. *Calais.* See *St.* Calais.—St. *Calogero,* and *Caloguro.* See *St.* Calogero, &c.—St. *Canciano,* or *St. Roſien,* a town of Carniola; 10 miles N.E. of Trieſte.—St. *Canice,* or *Iriſhtown,* in the county of Kilkenny, Ireland, adjacent to the city of Kilkenny on the N.N.W., and ſo united with it as to appear one town. It has, however, peculiar privileges by charter, amongſt which, before the Union, was that of being repreſented by two members in the Iriſh parliament. At this place is one of the ancient round towers, and in it ſtand the cathedral and biſhop's palace. See Kilkenny.—St. *Caradeo,* a town of France, in the department of the North Coaſts; 4 miles W. of Loudeac.—St. *Carlos.* See *St.* Carlos.—Alſo, a ſettlement and miſſion of Spaniſh monks in New Albion, for the purpoſe of converting the Indians; 3 miles S.S.E. of Monterey.—St. *Carlos Iſlands,* a cluſter of iſlands in the Pacific ocean, near the weſt coaſt of America; the moſt conſiderable being about two leagues in circumference. N. lat. 54° 48′. W. long. 134°.—St. *Caſimiro,* a town of New Mexico, in New Navarre; 225 miles W. of Caſa Grande.—St. *Caſſano.* See Cassano.—St. *Caſſino,* a town of Italy, in the Treviſan; 7 miles E. of Ceneda.—St. *Caſt Bay,* a bay of the Engliſh Channel, on the weſt coaſt of France, ſo named from a village, 10 miles W. of St. Maloes. N. lat. 48° 34′. W. long. 2° 10′.—St. *Cataldo,* a town of Naples, in the province of Otranto, on the coaſt; 8 miles E. of Lecce.—St. *Catalina,* a town of Mexico, in the province of Xaliſco; 12 miles N. of Compoſtella.—Alſo, a town of New Mexico, in New Navarre; 30 miles S.W. of Caſa Grande.—Alſo, an iſland in the Pacific ocean, about 40 miles in circumference, and 16 miles from the coaſt of New Albion. N. lat. 33° 25′. E. long. 241° 54′.—Alſo, a ſmall iſland in the Pacific ocean, between Chiloe and the coaſt of Chili. S. lat. 46°.—Alſo, a town of Mexico, in New Biſcay; 140 miles S.S.W. of Parral.—Alſo, a ſmall iſland in the Caribbean ſea. N. lat. 13° 20′. W. long. 81°.—Alſo, a town of South America, in the province of Cordova; 36 miles N. of Cordova.—St. *Catarina,* a town of Naples, in Calabria Ultra; 15 miles S. of Squillace.—St. *Catharina,* a town of the duchy of Carinthia; 6 miles W. of Tarvis.—St. *Catherina,* an iſland in the gulf of Venice, near the coaſt of Iſtria. N. lat. 45° 9′. E. long. 13° 44′.—Alſo, a town of Naples, in Calabria Citra; 12 miles E. of Coſenza.—Alſo, a town of the iſland of Malta; 4 miles S. of Malta.—Alſo, an iſland in the Mediterranean, about five miles in circumference, near the iſland of Rhodes. N. lat. 36° 5′. E. long. 27° 33′.—St. *Catharina de Torre,* a town of Portugal, in Algarve; 5 miles N. of Tavira.—St. *Catherine.* See *St.* Catherine.—Alſo, a ſmall iſland near the ſouth coaſt of Wales, ſouth of Tenby.—Alſo, a ſmall iſland near the ſouth coaſt of Hiſpaniola. N. lat. 18° 13′. W. long. 70° 19′.—Alſo, an iſland in the Atlantic, near the coaſt of Georgia, 16 miles in circumference. N. lat. 31° 32′. W. long. 81° 22′.—St. *Catherine's Bay.* See *St.* Catherine.—St. *Catherine de Fierbois,* a town of France, in the department of the Indre and Loire, celebrated for its plums; 13 miles S. of Tours.—St. *Catherine's Fork,* a river of Weſt Florida, which runs into the Miſſiſippi, N. lat. 31° 36′. W. long. 91° 28′.—St. *Catherine's Point,* a cape on the ſouth coaſt of the Iſle of Wight. N. lat. 50° 35′. W. long. 1° 19′.—St. *Catherine's Sound.* See *St.* Catherine.—St. *Cayetano,* a town of Braſil, on the Rio Negro; 130 miles W. of Fort Rio Negro.—St. *Cecilia,* a river of Eaſt Florida, which runs into the Atlantic, N. lat. 29° 53′. W. long. 81° 38′.—St. *Ceré.* See *St.* Ceré.—St. *Cernin.* See *St.* Cernin.—St. *Ceſario.* See *St.* Cesario.—St. *Chamand,* a town of France, in the department of the Cantal; 9 miles N. of Aurillac.—St. *Chamant,* a town of France, in the department of the Correze; 9 miles S.S.E. of Tulle.—St. *Chamas,* a town of France, in the department of the Mouths of the Rhone, celebrated for its olives; 18 miles W. of Aix.—St. *Chamond.* See *St.* Chamond.—St. *Chaptes,* a town of France, in the department of the Gard, and chief place of a canton, in the diſtrict of Uzés; 7 miles S.W. of Uzés. The place contains 474, and the canton 7260 inhabitants, on a territory of 210 kiliometres, in 17 communes.—St. *Charles.* See *St.* Charles.—St. *Chartier.* See *St.* Chartier.—St. *Chef.* See *St.* Chef.—St. *Chely.* See *St.* Chely.—St. *Chinian.* See *St.* Chinian.—St. *Chirico,* a town of Naples, in Baſilicata; 10 miles S.E. of Acerenza.—St. *Chriſtina,* a town of Naples, in Calabria Ultra; 2 miles S. of Oppido.—St. *Chriſtina,* a town of Spain, in Galicia; 6 miles from Lugo.—St. *Chriſtina.* See *St.* Christiania.—St. *Chriſtofle,* a town of Auſtria; 9 miles S. of Tullo.—St. *Chriſtogoro,* a town of Naples, in Capitanata; 11 miles W. of Manfredonia.—St. *Chriſtophe,* a town of France, in the department of the Indre, and chief place of a canton, in the diſtrict of Iſſoudun. The place contains 460, and the canton 7984 inhabitants, on a territory of 257½ kiliometres, in 12 communes.—Alſo, a town of France, in the department of the Indre and Loire, and chief place of a canton, in the diſtrict of Tours; 15 miles N.N.W. of Tours. The place contains 1950, and the canton 12,114 inhabitants, on a territory of 327½ kiliometres, in 13 communes.—Alſo, a town of France, in the department of the Saone and Loire; 5 miles N. of Marcigny.—Alſo, a town of France, in the department of the Iſere; 6 miles S.W. of Grenoble.—Alſo, a town of France, in the department of the Mayne and Loire; 16 miles N. of Chollet.—St. *Chriſtopher.* See *St.* Christopher.—St. *Chriſtopher de Montferrand,* a town of France, in the department of the Dordogne; 7 miles S.W. of Belvez.—St. *Chriſtoval,* a town of Chili; 30 miles E. of La Conception. S. lat. 36° 40′. W. long. 72° 46′.—Alſo, an iſland in the Pacific ocean, about 110 leagues in circumference, diſcovered by Mendana in 1575. S. lat. 6° 50′. E. long. 152° 30′.—Alſo, a town of South America, in the province of Cordova; 22 miles N.W. of Cordova.—Alſo, a town of New Mexico; 10 miles S. of Santa Fé.—Alſo, a town of New Mexico, on the Bravo; 60 miles E. of Sumas.—Alſo, a town of Mexico, in the province of Vera Paz; 20 miles S.S.W. of Vera Paz.—Alſo, a town of South America, in Grenada; 60 miles N. of Pamplona. N. lat. 7° 4′. W. long. 71° 10′.—St. *Chriſtoval le Lampangui,* a mountain of Chili, abounding in gold, ſilver, iron, lead, copper, and tin; ſituated near Coquimbo.—St. *Chriſtoval de Laguna.* See Laguna.—St. *Chriſtoval Bay.* See *St.* Christoval.—St. *Chriſtovan,* a river of Africa, which runs into the Indian ſea, S. lat. 32° 20′.—St. *Chriſtovao,* a town of Braſil, in the government of St. Salvador, near the coaſt; 20 miles N. of Sergipo. S. lat. 11° 30′.—Alſo, a town of Braſil; 10 miles N.W. of Rio Janeiro.—St. *Ciers,* a town of France, in the department of the Gironde; 12 miles N. of Bourg.—St. *Cire,* a town of France, in the department of the Rhone and Loire; 3 miles N. of Lyons.—St. *Cirq,* a lake of France, in the department of the Lot; 9 miles E. of Cahors.—St. *Clair.* See *St.* Clair.—St. *Claire ſur Epte,* a town of France, in the department of the Eure, on the river Epte; 7 miles S.W. of Giſors.—St. *Claire,* a ſmall iſland in the Indian ſea, near the eaſt coaſt of Madagaſcar. S. lat. 24° 54′. E. long 47° 10′.—St. *Clar.* See *St.* Clar.—St. *Clare,* or *Clere,* a town or rather village in South Wales, in the county of Carmarthen, on the Tave. Here was formerly a caſtle, and an alien priory of Cluniacs, which was ſuppreſſed by Henry VI., and given to All-Souls college in Oxford. In 1215 the town was taken by Llewelyn ap Jorwath, and the caſtle levelled with the ground. In 1256 it was taken by Llewelyn ap Gryffyth; 10 miles W. of Carmarthen.—St. *Claude.* See *St.* Claude.—St. *Clement,* a town of France, in the department of the Higher Alps; 7 miles N. of Embrun.—Alſo, a town of France, in the department of the Yonne; 2 miles N. of Sens.—Alſo, a town of the duchy of Holſtein; 5 miles S. of Weſlingburen.—Alſo, a town of France, in the department of the Correze; 6 miles N.W. of Tulle.—Alſo, a ſmall iſland in the Engliſh Channel, near the coaſt of Cornwall; 2 miles S. of Penzance. N. lat. 50° 6′. W. long. 5° 35′.—St. *Clement de la Place,* a town of France, in the department of the Mayne and Loire; 7 miles N.W. of Angers.—St. *Clement's Point,* a cape on the ſouth coaſt of Cornwall, on the weſt ſide of Mount's bay. N. lat. 50° 6′. W. long. 5° 23′.—St. *Clemente,* a town of Spain, in New Caſtile; 18 miles S.W. of Alarçon.—Alſo, an iſland in the Pacific ocean, about 25 miles in circumference, and 40 from the coaſt of New Albion. N. lat. 33°. E. long. 241° 56′.—St. *Cloud,* a town of France, in the department of the Charente; 18 miles N.N.E. of Angouleſme.—Alſo, a town of France, in the department of the Seine and Oiſe, where the kings of France had a palace, ſituated on an eminence near the Seine; before the revolution the ſee of a biſhop, and a duchy united to the archbiſhopric of Paris; 15 miles W. of Paris.—St. *Coloma,* a town of Spain, in Catalonia; 12 miles E.S.E. of Cervera.—St. *Colombe,* a town of France, in the department of the Aude; 13 miles S.W. of Limoux.—Alſo, a town of France, in the department of the Eure; 10 miles N.E. of Evreux.—St. *Columb.* See *St.* Columb.—St. *Columbano,* a town of Italy; 8 miles S. of Lodi.—St. *Combado,* or *St. Comba di Dao,* a town of Portugal, in Beira; 15 miles S.W. of Viſeu.—St. *Combe,* a town of France, in the department of the Rhine and Loire, on the eaſt ſide of the Rhone, oppoſite to Vienne.—St. *Come,* a town of France, in the department of the Aveiron; 15 miles N.E. of Rhodez.—St. *Conſtant,* a town of France, in the department of the Cantal; 18 miles S.W. of Aurillac.—St. *Conſtantin,* a town of Naples, in Baſilicata; 14 miles S. of Turſi.—St. *Coſmo,* an iſland in the gulf of Venice, near the coaſt of Friuli. N. lat. 45° 46′. E. long. 13° 25′.—Alſo, a town of South America, in Paraguay; 190 miles E. of Corrientes.—St. *Coſmo de Vair,* a town of France, in the department of the Sarthe; 6 miles S.S.E. of Mamers.—St. *Coulombo,* a town of France, in the department of the Ille and Vilaine; 4 miles N.E. of St. Malo.—St. *Croce,* a town of the Ligurian republic; 2 miles S.W. of Spezza.—Alſo, a town of Auſtria; 10 miles E. of Goritz.—Alſo, a town of Italy; 7 miles S.E. of Belluno.—Alſo, a town of Italy; 10 miles N. of Bergamo.—Alſo, a town of Sicily, in the valley of Noto; 14 miles N.W. of Modica.—Alſo, a river of Sicily, which runs into the ſea on the ſouth coaſt, N. lat. 36° 45′. E. long. 13° 34′.—St. *Croix.* See *St.* Croix.—Alſo, a town of France, in the department of the Upper Rhine; 3 miles S.S.E. of Colmar.—Alſo, a river of Patagonia, which runs into the Atlantic, S. lat. 50° 25′.—Alſo, a river of America, in the diſtrict of Main, which runs into the Atlantic, N. lat. 45° 10′. W. long. 67° 5′.—Alſo, a river of Canada, which runs into the river St. Maurice, 33 miles above Quebec.—Alſo, a river of North America, which runs into the Miſſiſippi, N. lat. 44° 32′. W. long. 93° 15′.—Alſo, a town of Canada, on the St. Lawrence; 18 miles S.W. of Quebec.—Alſo, a town of France, in the department of the Arriege; 9 miles N. of St. Girons.—St. *Croix de la Hayme,* a town of France, in the department of the Channel; 6 miles W. of Cherburg.—St. *Croix,* or *St. Croce,* a mountain of the iſland of Cyprus, which forms a part of the ancient Olympus; 18 miles N. of Larnica.—St. *Crot*, a town of Hungary; 71 miles S. of Vienna.—St. *Cyprian*, a town of Spain, in Galicia, on the north coaſt; 20 miles N. of Mondonedo. N. lat. 43° 42′. W. long. 7° 18′.—Alſo, a town of Chili, on the coaſt of the Pacific ocean; 160 miles S. of Valdivia. S. lat. 42° 7′. W. long. 74°.—St. *Cyprien*, a town of France, in the department of the Dordogne, and chief place of a canton, in the diſtrict of Sarlat; 7 miles W. of Sarlat. The place contains 1746, and the canton 9385 inhabitants, on a territory of 180 kiliometres, in 15 communes.—Alſo, a town of France, in the department of the Aveiron; 13 miles N. of Rhodez.—St. *Cyr*, a village near Verſailles, in which was the celebrated abbey founded by Madame Maintenon, who was an abbeſs till her death, for the inſtruction of the daughters of nobility, who had grown old, or who had died in the ſervice of the king.—Alſo, a town of France, in the department of the Indre and Loire; 2 miles N.W. of Tours.—St. *Cyr de Bailleul*, a town of France, in the department of the Channel; 8 miles S.E. of Mortain.

St. *Dalmatio del Piano*, a town of France, in the department of the Maritime Alps; 15 miles W. of Tenda.—St. *Dalmatio Salvatico*, a town of France, in the department of the Maritime Alps; 30 miles N.N.W. of Nice.—St. *Damiano*. See *St.* Damiano.—Alſo, a town in the department of the Seſia; 14 miles N.W. of Vercelli.—St. *Daniel*, a town of Italy, in Friuli; 12 miles W.N.W. of Udina.—St. *Darigo*, a town of Italy, in Friuli; 16 miles W. of Udina.—St. *David's*. See *St.* David's.—St. *David's Bay*, a bay of the iſland of Dominica, on the eaſt coaſt. N. lat. 17° 33′. W. long. 61° 18′.—St. *David's Cove*, a harbour on the north coaſt of an iſland in the ſtraits of Magellan; 5 miles E. of Butler's bay.—St. *David's Head*, a cape on the weſt coaſt of South Wales; 3 miles N.W. of St. David's. N. lat. 52°. W. long. 5° 17′.—Alſo, a cape of the iſland Dominica, at the eaſt extremity of St. David's bay.—Alſo, a cape on the north coaſt of an iſland in the ſtraits of Magellan; 4 miles E. of Butler's bay.—St. *Denis*. See *St.* Denis and *St.* Denys.—St. *Deſire*, a town of France, in the department of the Allier; 12 miles N.W. of Montluçon.—St. *Didier*. See *St.* Didier.—St. *Dié*. See *St.* Dié.—St. *Diego*, a ſea-port on the weſt coaſt of North America, to which belong a Spaniſh ſettlement and miſſion, with a preſidio; where, in 1793, captain Vancouver found a Spaniſh lieutenant of cavalry as commandant. The port affords excellent anchorage, and accommodation for a great number of veſſels; but wood and water are not conveniently obtained. This preſidio is the leaſt of the Spaniſh ſettlements; it is ſituated on high ground, in a dreary and uncultivated country, and irregularly built; and ſupplies of the neceſſary means of ſubſiſtence are obtained with difficulty, and from a great diſtance. N. lat. 32° 42′. E. long. 243° 7′. See *New* Albion, California, and Monterey.—St. *Diego*, a town of New Mexico, on the Bravo; 13 miles N.W. of Santa Fé.—Alſo, a town of New Mexico; 90 miles S.E. of Santa Fé.—St. *Diego de Pitquin*, a town of New Navarre; 170 miles S.S.W. of Caſa Grande.—St. *Diego de Guamas*, a town of South America, in the province of Popayan; 120 miles S.E. of Popayan. N. lat. 0° 50′. W. long. 75° 12′.—St. *Dimitri*, a ſmall iſland in the gulf of Engia.—St. *Diomida*, a ſmall iſland of Ruſſia, in the Frozen ocean. N. lat. 78° 40′. E. long. 135° 14′.—Alſo, a ſmall iſland in the North Pacific ocean. N. lat. 63° 15′. E. long. 190° 14′.—St. *Dionyſio*, a river of South America, which runs into the Atlantic, S. lat. 48° 20′.—Alſo, a town of Italy, in the department of the Montagna; 8 miles N.W. of Lecco.—St. *Dizier*. See *St.* Dizier.—St. *Domingo*. See *St.* Domingo and Hispaniola.—Alſo, a river of Africa, which runs into the Atlantic, 6 miles E. of Calabar.—Alſo, a town of South America, in the government of Caraccas, and province of Venezuela; 15 miles N.N.W. of Varinas.—Alſo, a town of South America, in the audience of Quito; 40 miles W.S.W of Quito.—Alſo, a town of New Mexico, on the Bravo; 30 miles from Santa Fé.—Alſo, a town of Mexico, in the province of Nicaragua; 45 miles S. of Nicoya.—Alſo, a Spaniſh ſettlement and miſſion of Dominican monks, in New Albion, near the coaſt of the Pacific ocean. N. lat. 30°. E. long. 244° 51′.—St. *Domingo*, or *Cacheo*, a river of Africa, which runs into the Atlantic, N. lat. 12° 8′. W. long. 16° 20′.—St. *Domingo de Xacoma*, a town of New Mexico; 30 miles N.N.E. of Santa Fé.—St. *Domingo Soriano*, a town of South America, in Buenos Ayres, at the union of the Rio Negro and Uraguay; 80 miles N. of Buenos Ayres. S. lat. 33° 18′.—St. *Dominique de Senaco*, a town of Mexico, in the province of Vera Paz.—St. *Domino*, one of the Tremiti iſlands, in the Adriatic, about 12 miles from the coaſt of Naples; four miles in length. N. lat. 42° 8′. E. long. 15° 25′.—St. *Donaci*, a town of Naples, in the province of Otranto; 10 miles S.S.W. of Brindiſi.—St. *Donat*. See *St.* Donat.—St. *Donato*, a town of Naples, in Lavora; 9 miles E.S.E. of Sura.

St. *Edmund's Point*, a cape of England, on the N. coaſt of Suffolk, in the German ſea. N. lat. 52° 58′. E. long. 0° 28′.—St. *Egreve*, a town of France, in the department of the Iſere; ſix miles S.W. of Grenoble.—St. *Elia*, a town of Naples, in Capitanata; 13 miles N.W. of Volturara.—St. *Elias*. See *St.* Elias.—Alſo, a mountain in the S. part of the iſland of Negropont. N. lat. 38° 3′. E. long. 24° 30′.—Alſo, a mountain of Greece, in the S. part of Livadia, near the gulf of Engia; four miles N.W. of cape Colonai.—Alſo, a town in the N. part of the iſland of Scio; 14 miles N.N.W. of Scio.—Alſo, a mountain on the iſland of Milo; ſeven miles W. of Milo.—Alſo, a town of Braſil, in the government of Goyas; 140 miles N. of Villaboa.—St. *Elizabeth*, a town of Croatia; four miles E.S.E. of Varaſdin.—St. *Elpidio*, a town of the marquiſate of Ancona; ſix miles N. of Fermo.—St. *Emillon*, a town of France, in the department of the Gironde; four miles S.E. of Libourne.—St. *Emmeran*. See *St.* Emmeran.—St. *Enimie*. See *St.* Enimie.—St. *Erama*, a town of Naples, in the province of Bari; eight miles S.S.E. of Bittetto.—St. *Erango*, a town of Naples, in Bari; 15 miles E. of Gravina.—St. *Eraſmo*, a ſmall iſland in the gulf of Venice, defended by a fort; four miles N.E. of Venice.—St. *Erat*, a town of the Helvetian Republic, in the canton of Lucerne; two miles W. of Surſee.—St. *Ermacher*, a town of the duchy of Carinthia; nine miles S. of Saxenburg.—St. *Eſpain*. See *St.* Espain.—St. *Eſprit*. See *St.* Esprit.—St. *Eſprit Bay*, a large bay of the Indian ſea, on the E. coaſt of Africa, N. of cape Unhaſa, which forms its ſouthern boundary.—St. *Eſprit Iſlands*, a cluſter of ſmall iſlands in the Eaſt Indian ſea. N. lat. 0° 31′. E. long. 107° 21′.—St. *Eſtaniſlao*, a town of S. America, in the audience of Quito; 50 miles N.W. of S. Joſef de Huales.—St. *Eſtephe*, a town of France, in the department of the Gironde; nine miles S.E. of Leſparre.—St. *Eſtevan*, a town of California; 75 miles N.W. of Loreto.—St. *Eſtevan de Acoma*, a town of New Mexico, 90 miles S.S.W. of Santa Fé.—St. *Eſtevan de Gormaz*, a town of Spain, in Old Caſtile, on the Duero; ſix miles S.E. of Borgo d'Oſma.—St. *Eſtevan del Roy*, a town of Chili; 30 miles N.E. of La Conception. S. lat. 36° 45′. W. long. 73° 3′.—St. *Eſtivao de Cachove*, a town of Portugal, in Algarve;

garve; 11 miles N. of Loule.—St. *Etienne*. See *St.* ETIENNE.—St. *Etiſeby*, a town of France, in the department of the Higher Alps; nine miles N. of Gap.—St. *Eufemia*. See *St.* EUFEMIA.—St. *Eufra*. See EUFRA.—St. *Eutalie*, a town of France, in the department of the Aveiron; 10 miles E. of St. Afrique.—St. *Evrou*, a town of France, in the department of the Orne; nine miles N.W. of L'Aigle.—St. *Euſtatia*. See *St.* EUSTATIA.—St. *Exupery*. See *St.* EXUPERY.

St. *Fabian*, a town on the W. coaſt of the iſland of Luçon. N. lat. 16° 24′. E. long. 120° 40′.—St. *Famille, La*, a town of Canada, on the left bank of the St. Lawrence. N. lat. 46° 40′. W. long. 71° 45′.—St. *Fargeau*. See *St.* FARGEAU.—St. *Fauſtino*. See *St.* FAUSTINO.—St. *Fele*. See *St.* FELE.—St. *Felice*. See *St.* FELICE.—St. *Felicien*. See *St.* FELICIEN.—St. *Felicita*. See *St.* FELICITA.—St. *Felipe*. See *St.* FELIPE.—St. *Felix*. See *St.* FELIX.—St. *Felix de Bourdeille*, a town of France, in the department of the Dordogne; nine miles S.S.W. of Nontron.—St. *Felizes de Gallego*, a town of Spain, in the province of Leon; eight miles N.N.W. of Ciudad Rodrigo.—St. *Ferino*. See *St.* FERINO.—St. *Feriole*, a town of France, in the department of the Correze; ſix miles N.E. of Brive.—St. *Ferme*, a town of France, in the department of the Gironde; nine miles N.E. of La Realle.—St. *Fernando*. See *St.* FERNANDO.—St. *Ferra Cavallo*, a town of Naples, in the province of Bari; ſix miles N. of Bari.—St. *Fiacre*, a town of France, in the department of the Seine and Marne; four miles S.E. of Meaux.—St. *Fiaderagg*, a ſmall iſland on the W. ſide of the gulf of Bothnia. N. lat. 63° 52′. E. long. 20° 39′.—St. *Filippo*, a town of Naples, in Calabria Ultra; 10 miles N. of Nicotera.—St. *Finian's Bay*, a harbour on the weſt coaſt of Ireland, lying between Puffin iſland to the north, and Bolus head to the ſouth; having the Skelig iſlands about a league to the weſt. It has, for the moſt part, a tempeſtuous rolling ſea, and affording no ſhelter, is by no means a proper place for ſhips to lie in. The adjoining part of the county of Kerry is hilly, wild, and uncultivated. A neighbouring lake, Lough Curraan, retains ſome veſtiges in one of its iſlands of the reſpect paid to St. Finian in this country.—St. *Fiore*, a town of Etruria; eight miles N. of Soana.—St. *Fiorenza*, a ſea-port town of the iſland of Corſica, on a bay which forms the harbour, defended by walls and a ſtrong tower. In the vicinity are marſhes, which render the air inſalubrious; near it is a ſilver mine; ſix miles W. of Baſtia. N. lat. 42° 35′. E. long. 9° 37′.—St. *Firmin*. See *St.* FIRMIN.—St. *Flaviano*. See *St.* FLAVIANO.—St. *Florent*. See *St.* FLORENT.—St. *Florentin*. See *St.* FLORENTIN.—St. *Florian*, a town of Auſtria, with a collegiate foundation of Auguſtine canons; five miles W.S.W. of Ens.—St. *Flovier*, a town of France, in the department of the Indre and Loire; nine miles N.E. of Preuilly. St. *Flour*. See *St.* FLOUR.—St. *Fort*, a town of France, in the department of the Lower Charente; nine miles S.S.W. of Pons.—St. *Fortunade la Roche*, a town of France, in the department of the Correze; nine miles S. of Tulle.—St. *Fortunat*, a town of France, in the department of the Ardêche; ſeven miles N.N.E. of Privas.—St. *Foy*. See *St.* FOY.—Alſo, a town of Canada, on the left bank of the St. Lawrence; five miles S.W. of Quebec.—St. *Foy de Peyrollières*, a town of France, in the Upper Garonne; 15 miles S.W. of Toulouſe.—St. *Fradello*, a river of Sicily, which runs into the ſea, on the N. coaſt, N. lat. 38° 14′. E. long. 14° 47′.—St. *Frainbault*, a town of France, in the department of the Mayenne; 12 miles N. of Mayenne.—St. *Frajou*, a town of France, in the Upper Garonne; 15 miles N. of St. Gaudens.—St. *Frambourg*, a town of France, in the department of Paris; three miles S.S.E. of Paris.—St. *Framondo*, a town of Naples, in Principato Ultra; ſix miles N. of Benevento.—St. *Francis*, a river of Africa, which runs into the Atlantic, S. lat. 12° 50′.—Alſo, a lake of Canada, on the river St. Lawrence, between Kingſton and Montreal.—Alſo, a river of Canada, which runs into St. Peter's lake, 30 miles N.E. of Montreal.—Alſo, a river of Louiſiana, which runs into the Miſſiſippi, near Kappas.—Alſo, a river of Labrador, which runs into the North Atlantic ocean, N. lat. 52° 44′. W. long. 55° 20′.—St. *Franciſco*. See *St.* FRANCISCO.—Alſo, a town of New Navarre; 24 miles W. of Caſa Grande.—Alſo, a town of Eaſt Florida; 56 miles E.S.E. of St. Mark.—Alſo, a river of Chili, which runs into the Pacific ocean, S. lat. 52°.—Alſo, a river of Patagonia, which runs into the Atlantic, S. lat. 51° 58′.—Alſo, a ſea-port on the W. coaſt of North America, with a citadel, garriſoned by Spaniards, a church, and a houſe for the commandant; near it is a miſſion of Franciſcan friars for the converſion of the Indians. N. lat. 37° 48′. E. long. 237° 52′. See *New* ALBION.—St. *Franciſco Bay*, a bay of the Indian ſea, on the coaſt of Africa. S. lat. 32° 25′.—St. *Franciſco del Salto*, a town of Chili, 50 miles N.E. of La Conception. S. lat. 36° 20′. W. long. 72° 50′.—St. *Franciſco de Borja*, a town of S. America, and capital of the juriſdiction of Maynas, on the river Maragnon; 270 miles S.S.E. of Quito. N. lat. 4° 28′. W. long. 78° 30′.—St. *Franciſco de la Sierra*, a town of Mexico, in Veragua; 10 miles N.E. of St. Yago.—St. *François*, a lake of Lower Canada, in the river St. Lawrence, 25 miles in length, and five in breadth. N. lat. 46° 9′. W. long. 74° 20′.—Alſo, a river of Braſil, which runs into the Atlantic, S. lat. 11°. W. long. 36° 15′.—Alſo, a town of S. America, in the province of Venezuela.—Alſo, a town of the iſland of Guadaloupe, on the S. coaſt. N. lat. 16° 23′. W. long. 63° 32′.—St. *François le beau Lieu*, a town of France, in the department of the Jemappe; two miles E. of Chaſtelet.—St. *Front*, a town of France, in the department of the Lot and Garonne; nine miles E.N.E. of Montflanquin.—St. *Fulgent*, a town of France, in the department of the Vendée, and chief place of a canton, in the diſtrict of Montaigu, nine miles S.S.E. of Montaigu. The place contains 1160, and the canton 7888 inhabitants, on a territory of 295 kiliometres, in eight communes.

St. *Gabriel*. See *St.* GABRIEL.—St. *Gætano*. See *St.* GÆTANO.—St. *Gal*. See *St.* GALLEN.—St. *Gallan*. See GALLAN.—St. *Gallo*, a town of Italy, in the department of the Mela; 10 miles N.N.E. of Breſcia.—St. *Galmier*, a town of France, in the department of the Rhone and Loire, in which is a medicinal ſpring of a vinous taſte; 12 miles E. of Montbriſon.—St. *Gaſte*. See *St.* GASTE.—St. *Gaudens*. See *St.* GAUDENS.—St. *Gavino*. See *St.* GAVINO.—St. *Gaultier*. See *St.* GAULTIER.—St. *Gemini*. See *St.* GEMINI.—St. *Geminiano*. See *St.* GEMINIANO.—St. *Gemme le Robert*, a town of France, in the department of the Mayenne; two miles N. of Evron.—St. *Geneſio*, a town of the marquiſate of Ancona; three miles S.S.E. of Tolentino.—St. *Geneſt Dambierre*, a town of France, in the department of the Vienne; ſeven miles W. of Chatellerault.—St. *Geneſt de Maliſaut*. See *St.* GENEST.—St. *Genevieve*. See *St.* GENEVIEVE.—St. *Gengou le Royal*. See *St.* GENGOU.—St. *Genies*. See *St.* GENIES.—St. *Genis*. See *St.* GENIS.—St. *Genito*. See *St.* GENITO.—St. *Geoir*, a town of France, in the department of the Iſere; and chief place of a canton, in the diſtrict of La Tour du Pin; 18 miles N.W. of Grenoble.

The place contains 3440, and the canton 12,463 inhabitants, on a territory of 177½ kiliometres, in 14 communes.—St. *Georg.* See *St.* Georg.—St. *George.* See *St.* George.—St. *Georges.* See *St.* Georges.—St. *Georgenfeld.* See *St.* Georgenfeld.—St. *Gerand le Puy,* a town of France, in the department of the Allier; 21 miles S. of Moulins.—St. *Germain.* See *St.* Germain.—St. *Germainmont.* See *St* Germainmont.—St. *Germano.* See *St.* Germano.—St. *Germer.* See *St.* Germer.—St. *Geronimo.* See *St.* Geronimo.—St. *Gervais.* See *St.* Gervais.—St. *Gery.* See *St.* Gery.—St. *Giacomo.* See *St.* Giacomo.—St. *Giancazzo.* See *St.* Giancazzo.—St. *Gildas.* See *St.* Gildas.—St. *Gilgen.* See *St.* Gilgen.—St. *Gilis.* See *St.* Gilis.—St. *Gille,* &c. See *St.* Gille, &c.—St. *Gilles,* &c. See *St.* Gilles, &c.—St. *Gillian.* See *St.* Gillian.—St. *Gineto.* See *St.* Gineto.—St. *Gingo.* See Gingo.—St. *Gio.* See *St.* Gio.—St. *Giorgio.* See *St.* Giorgio.—St. *Giovanni.* See *St.* Giovanni.—St. *Girons.* See *St.* Girons.—St. *Giulia.* See *St.* Giulia.—St. *Giuliano.* See *St.* Giuliano.—St. *Goar.* See *St.* Goar.—St. *Gobin.* See *St.* Gobin.—St. *Gondon,* a town of France, in the department of the Loiret; four miles W. of Gien.—St. *Gonſalvo.* See *St.* Gonsalvo.—St. *Gonzago.* See *St.* Gonzago.—St. *Gothard.* See *St.* Gothard.—St. *Gowen's Head,* a cape on the S. coaſt of Wales, in the county of Pembroke, on the N. ſide of the Briſtol Channel. N. lat. 51° 33′. W. long. 5°.—St. *Gravé,* a town of France, in the department of the Morbihan; three miles N.E. of Rochefort.—St. *Gregorio.* See *St.* Gregorio.—St. *Guillaume,* a town of France, in the department of the Iſere; 15 miles S. of Grenoble.—St. *Gulielmo,* a town of the Valteline; four miles N.W. of Chiavenna.

St. *Haron-le-Chatel,* a town of France, in the department of the Loire, and chief place of a canton, in the diſtrict of Roanne; ſeven miles W. of Roanne. The place contains 750, and the canton 11,197 inhabitants, on a territory of 217½ kiliometres, in 11 communes.—St. *Heand,* a town of France, in the department of the Loire, and chief place of a canton, in the diſtrict of St. Etienne; four miles N. of St. Etienne. The place contains 2667, and the canton 8635 inhabitants, on a territory of 125 kiliometres, in 10 communes.—St. *Helena.* See Helena.—St. *Helens.* See *St.* Helens.—St. *Helia,* a town of Iſtria; five miles N.N.W. of Monfalcone.—St. *Helier.* See Hilary.—St. *Henry,* a town of Canada, on the river St. Lawrence. N. lat. 46° 45′. W. long. 71° 10′.—St. *Hermine,* a town of France, in the department of the Vendée; ſix miles N.E. of Luçon. See Hermine.—St. *Hermogenes.* See *St.* Hermogenes.—St. *Hernin,* a town of France, in the department of the Finiſterre; four miles S.W. of Carhaix.—St. *Hilaire,* a town of France, in the department of the Aude, and chief place of a canton, in the diſtrict of Limoux; ſix miles N.E. of Limoux. The place contains 836, and the canton 4497 inhabitants, on a territory of 197½ kiliometres, in 14 communes.—Alſo, a town of France, in the Lower Charente, and chief place of a canton, in the diſtrict of Jean d'Angely. The place contains 1223, and the canton 7720 inhabitants, on a territory of 147½ kiliometres, in 12 communes.—Alſo, a town of France, in the Allier; 18 miles N.E. of Montluçon.—Alſo, a town of France, in the department of Paris; ſeven miles S.E. of Paris.—Alſo, a town of France, in the department of the Channel, and chief place of a canton, in the diſtrict of Mortain; ſix milee S.W. of Mortain. The place contains 1957, and the canton 13,280 inhabitants, on a territory of 155 kiliometres, in 12 communes.—Alſo, a town of France, in the department of the Vendée, and chief place of a canton, in the diſtrict of Fontenay-le-Comte, ſix miles from it. The place contains 1878, and the canton 9453 inhabitants, on a territory of 217½ kiliometres, in 14 communes.—St. *Hubert.* See *St.* Hubert.—St. *Hyppolite,* a town of France, in the department of the Aveiron; 24 miles N. of Rhodez.—Alſo, a town of France, and principal place of a diſtrict, in the department of the Doubs; 24 miles S.W. of Porentruy. The place contains 5050, and the canton 10,592 inhabitants, on a territory of 187½ kiliometres, in 29 communes. N. lat. 47° 19′. E. long. 6° 53′.—Alſo, a town of France, and principal place of a diſtrict, in the department of the Gard; 24 miles W.N.W. of Niſmes. N. lat. 43° 58′. E. long. 3° 56′.—Alſo, a town of France, in the department of the Upper Rhine, five miles N. of Colmar.

St. *Ja.* See *St.* Ja.—St. *Jacob.* See *St.* Jacob.—St. *Jacobini,* a town of Naples, in Capitanata; three miles S.W. of Termola.—St. *Jacques,* a town of France, in the department of the North Coaſts; five miles S.E. of Pontrieu.—St. *Jacques ſur Darnetal,* a town of France, in the department of the Lower Seine; four miles E. of Rouen.—St. *Jago.* See *St.* Jago.—St. *Jaire,* a town of France, in the department of the Leman; 15 miles S.E. of Geneva.—St. *Jalle,* a town of France, in the department of the Drome; ſix miles E. of Nions.—St. *James.* See *St.* James.—St. *Janni.* See *St.* Janni.—St. *Jaques.* See *St.* Jaques.—St. *Ibars,* a town of France, in the department of the Arriege; 27 miles N.N.W. of Taraſcon.—St. *Jean.* See *St.* Jean.—Alſo, a town of France, in the department of Mont Tonnerre, on the E. ſide of the Sarre, oppoſite to Saarbruck.—St. *Jean d'Arvet,* a town of France, in the department of Mont Blanc; 4 miles E. of Chambery.—St. *Jean d'Avela,* a town of France, in the department of the Iſere; 21 miles N.N.W. of Grenoble.—St. *Jean de la Blaquiere,* a town of France, in the department of the Herault; 4 miles E. of Lodeve.—St. *Jean de Breuil,* a town of France, in the department of the Aveiron; 12 miles E.S.E of Milhau.—St. *Jean de Cardonnet,* a town of France, in the department of the Lower Seine; 6 miles N.W. of Rouen.—St. *Jean de Chazorne,* a town of France, in the department of the Lozere; 5 miles N. of Villefort.—St. *Jean de Coux,* a town of France, in the department of Mont Blanc; 6 miles S.W. of Chambery.—St. *Jean la Fouillouze,* a town of France, in the department of the Lozere; 8 miles S.W. of Langogne.—St. *Jean la Motte,* a town of France, in the department of the Sarthe; 6 miles N.E. of La Flêche.—St. *Jean de Sauves,* a town of France, in the department of the Vienne; 4 miles N.E. of Mirabeau.—St. *Jean de Vignes,* a town of France, in the department of the Saone and Loire; 2 miles N. of Chalons ſur Saone.—St. *Jerom's Channel,* &c. See *St.* Jerom's, &c.—St. *Jeronimo,* &c. See *St.* Jeronimo.—St. *Ignace,* a town of Canada, on the right bank of the St. Lawrence. N. lat. 47° 1′. W. long. 70° 20′.—St. *Ignatio,* a town of S. America, in Tucuman; 32 miles S. of St. Miguel.—Alſo, a town of New Navarre; 140 miles S. of Caſa Grande.—Alſo, a town of S. America, in Granada; 90 miles E. of Tunja.—Alſo, a town of S. America, in the province of Paraguay; 40 miles S.E. of Aſſumption.—Alſo, a town of S. America, in the province of Moxes; 36 miles N.W. of Trinidad.—Alſo, a town of Mexico, in the province of New Biſcay; 96 miles S.W. of Parral.—St. *Ignatio de Pevas,* a town of S. America, in the audience of Quito, on the river Amazons; 90 miles N.E. of St. Joachim de Omaguas.—St. *Ignatio d'Agand,* a town in the iſland of Guam, defended by two forts, containing a garriſon of 100 men.—St. *Ildefonſo,* a royal palace of the kings of Spain, in Old Caſtile, ſituated in a mountainous country, and built by Philip V. in imitation of Verſailles;

ſailles; 6 miles S. of Segovia.—St. *Ildefonſo*, a town of Mexico, in the province of Guaxaca; 60 miles N.E. of Guaxaca. N. lat. 17° 28′. W. long. 97° 40′.—St. *Ildefonſo's Iſlands*, a cluſter of iſlands, or rocks, on the S. coaſt of Terra del Fuego. S. lat. 55° 53′. W. long. 73° 46′.—St. *Illie*, a town of European Turkey, in Moldavia; 10 miles S.W. of Suczava.—St. *Ilpize*, a town of France, in the department of the Upper Loire, on the Allier; 5 miles S. of Brioude.—St. *Immier*, a town of Switzerland, in the diſtrict of Brienne; 20 miles W. of Soleure.—St. *Ines*, a town of New Mexico, in the province of Mayo; 110 miles E. of Santa Cruz.—St. *Joachim*. See *St.* Joachim.—St. *Joachimſperg*, a town of Auſtria; 28 miles S. of St. Polten. St. *Joao*. See *St.* Joao.—St. *Job*. See *St.* Job.—St. *Johan*. See *St.* Johan.—St. *Johanns*. See *St.* Johanns.—St. *John*. See *St.* John.—St. *John's Point*, or *Cape*, a cape of Ireland, in the county of Donegal, on the north coaſt of the bay of Donegal, and forming the S.E. point of the harbour of Killybegs and M'Swines bay. N. lat. 54° 34′. W. long. 8° 18′.—Alſo, a cape on the E. coaſt of Ireland, forming the eaſt point of Dundrum bay, in the county of Down. N. lat. 54° 15′. W. long. 5° 33′.—St. *Johnſtown*. See *St.* Johnstown.—St. *Joire*. See *St.* Joire.—St. *Jooſtland*. See *St.* Joostland.—St. *Jorge*. See *St.* Jorge.—St. *Jorgen*. See *St.* Jorgen.—St *Jorio della Molinora*, a town of Naples, in Principato Ultra; 16 miles N.E. of Benevento.—St. *Joſef*. See *St.* Josef.—St. *Joſeph*. See *St.* Joseph.—St. *Joſſe*, a town of France, in the department of the Straits of Calais; 4 miles S.S W of Montreuil.—St. *Jouan*. See *St.* Jouan *de l'Iſle*.—St. *Joze*. See *St.* Joze.—St. *Iſabel*. See *St.* Isabel.—St. *Iſabella*. See *St.* Isabella.—St. *Iſidoro*. See *St.* Isidoro.—St. *Iſtad*. See *St.* Istad.—St. *Juan*. See *St.* Juan.—St. *Juery*, a town of France, in the department of the Tarn; 3 miles N.E. of Alby.—St. *Ives*. See *St.* Ives.—St. *Julia da Graſcapou*, a town of France, in the department of the Upper Garonne; 60 miles W.N.W. of Revel.—St. *Julien*. See *St.* Julien—Alſo, a town of France, in the department of Mont Blanc, on the Arc; 4 miles S. of St. Jean de Maurienne.—St. *Julien de Civry*, a town of France, in the department of the Saone and Loire; 4 miles S. of Charolles.—St. *Julien le Faucon*, a town of France, in the department of the Calvados; 18 miles E.S.E. of Caen.—St. *Julien ſur Garonne*, a town of France, in the department of the Upper Garonne; 3 miles S W. of Rieux.—St. *Julien en Quint*, a town of France, in the department of the Drome; 6 miles N.W. of Dié.—St. *Junien*. See *St.* Junien.—St. *Juſt*. See *St.* Just.—Alſo, a town of France, in the department of the Oiſe; 9 miles S.S.E. of Breteuil.—Alſo, a town of France, in the department of the Lower Charente; 3 miles S.S.E. of Marennes.—St. *Juſt la Pendu*, a town of France, in the department of the Rhone and Loire; 12 miles S.W. of Roanne.—St. *Juſtin*. See *St.* Justin.—St. *Juvin*, a town of France, in the department of the Ardennes; 3 miles E. of Grandpré.—St. *Izere*, a town of France, in the department of the Aveiron; 6 miles N.W. of St. Afrique.

St. *Kilda*. See *St.* Kilda.—St. *Kinoſa*. See *St.* Kinosa.—St. *Kirling*, a town of Auſtria; 4 miles W. of Cloſter Neuburg.—St. *Kiſſi*. See *St.* Kissi.—St. *Kreſta*. See *St.* Kresta.

St. *Labouer*, a town of France, in the department of the Landes; 18 miles S. of Mont de Marſan.—St. *Lambert du Latiay*, a town of France, in the department of the Maine and Loire; 20 miles N.N.W. of Vihiers.—St. *Lambert du Levées*, a town of France, in the department of the Maine and Loire; on the N. ſide of the Loire; 2 miles N. of Saumur.—St. *Lambrecht*, a town of Stiria; 5 miles E. of Muhrau.—St. *Lamprecht*, a town of Carinthia; 4 miles N. of Lavamund.—St. *Laud*, a town of France, in the department of the Maine and Loire; 3 miles S. of Angers.—St. *Laurence*. See *St.* Laurence.—Alſo, a county of New York, America, in the N.W. corner of the ſtate, on the S.E. bank of St. Laurence river, interſected by a conſiderable number of rivers. It is divided into the townſhips of Maſſena, Madrid, Liſbon, and Oſwegatchai, in which laſt are the river and lake of the ſame name. See *St.* Laurence.—St. *Laurens*. See *St.* Laurens.—St. *Laurent*. See *St.* Laurent.—St. *Lauthain*, a town of France, in the department of the Jura; 3 miles W.S.W. of Poligny.—St. *Lazaro*, *Archipelago of*, a name given firſt to the Philippine iſlands by Magellan, becauſe he diſcovered them on the day dedicated by the Romiſh church to that ſaint.—St. *Lazaro*, an iſland adjoining to the city of Venice, deſtined in 1782 for poor perſons afflicted with the leproſy. In 1617 it was ceded to the Armenian monks of the holy abbot Anthony. The Armenians have here a beautiful church and a convent, containing a collection of books and MSS.—Alſo, a town of New Mexico; 50 miles S. of Santa Fé.—St. *Leger*, a town of France, in the department of the Seine and Oiſe; 15 miles N.W. of Dourdan.—St. *Leger-ſous-Beuvran*, a town of France, in the department of the Saone and Loire, and chief place of a canton, in the diſtrict of Autun. The place contains 990, and the canton 5474 inhabitants, on a territory of 217½ kiliometres, in 12 communes.—St. *Leger de Monbrillais*, a town of France, in the department of the Vienne; 6 miles N.W. of Loudun.—St. *Leger de Peyre*, a town of France, in the department of the Lozere; 3 miles N. of Marvejols.—St. *Lenhart*, a town of Auſtria; 10 miles E. of Freyſtatt.—St. *Leo*, a town of the duchy of Urbino, the ſee of a biſhop, ſuffragan of Urbino; 12 miles N.N.W. of Urbino. N. lat. 43° 55′. E. long. 12° 20′.—Alſo, a mountain of Naples, in Lavora; 7 miles N.E. of Capua.—St. *Leonard*, a town of France, in the department of the Upper Vienne, and chief place of a canton, in the diſtrict of Limoges; 10 miles E. of Limoges. The place contains 4815, and the canton 11,526 inhabitants, on a territory of 297½ kiliometres, in 12 communes. N. lat. 45° 50′. E. long. 6° 34′.—Alſo, a town of Auſtria; 6 miles N.E. of Bavarian Waidhoven.—Alſo, a town of France, in the department of the Voſges; 4 miles E. of St. Diey.—St. *Leonard des Bois*, a town of France, in the department of the Mayenne; 9 miles S.W. of Alençon.—St. *Leonard de Rache*, a town of France, in the department of the North; 4 miles N.E. of Douay.—St. *Leonardo*, a town of Spain, in Old Caſtile; 11 miles N. of Oſma.—Alſo, a town of Naples, in Capitanata; 5 miles N.E. of Aſcoli.—Alſo, a town of Italy, in Friuli; 13 miles S. of Belgrade.—St. *Leone*, a town of Sicily, in the valley of Mazara; ſix miles S.E. of Girgenti.—St. *Leonhard*, a town of Carinthia, on the river Lavant; 104 miles W.S.W. of Vienna. N. lat. 46° 53′. E. long. 14° 27′.—St. *Leonhardt*, a town of Auſtria; 10 miles S.W. of St. Polten.—St. *Leons*, a town of France, in the department of the Aveiron; 18 miles E.S.E. of Rhodez.—St. *Leonzo*, a town of Naples, in Calabria Ultra; 17 miles N.N.E. of Gierace.—St. *Leu*, a town of France, in the department of the Oiſe, on the Oiſe; 18 miles S.E. of Beauvais.—St. *Leven's Point*, a cape on the S.W. coaſt of England, near the Land's End. N. lat. 50° 4′. W. long. 5° 41′.—St. *Lewis*, a river of Canada, which runs into lake Superior, in Weſt bay.—Alſo, a river of Labrador, which runs into the North Atlantic ocean, N. lat. 52° 30′. W. long. 55° 40′.—St.

Licandro, a town of Naples, in the province of Capitanata; 7 miles E. of Leſina.—Alſo, a town of Naples, in Bari; 5 miles E.S.E. of Bittetto.—St. *Liebault,* or *Etiſſac,* a town of France, in the department of the Aube; 9 miles W. of Troyes.—St. *Livrade,* a town of France, in the department of the Lot and Garonne, and chief place of a canton, in the diſtrict of Villeneuve d'Agen; 12 miles N. of Agen. The place contains 2439, and the canton 5356 inhabitants, on a territory of 92½ kiliometres, in 7 communes.—St. *Lizier,* a town of France, and ſeat of a tribunal, in the department of the Arriege: before the revolution the ſee of a biſhop, ſuffragan of Auch; 2 miles N. of St. Girons. N. lat. 43°. E. long. 1° 13′.—St. *Lo.* See *St.* LO.—St. *Lomer,* a town of France, in the department of the Orne; 18 miles N.E. of Alençon.—St. *Lorentz,* a town of Auſtria; 4 miles N.N.W. of Glaggnitz.—St. *Lorentzen.* See *St.* LORENTZEN.—St. *Lorenzo.* See *St.* LORENZO.—St. *Loſorga.* See *St.* LOSORGA.—St. *Lotiero.* See *St.* LOTIERO.—St. *Loubes.* See *St.* LOUBES.—St. *Loubouex.* See *St.* LOUBOUEX.—St. *Louis.* See *St.* LOUIS.—St. *Loup.* See *St.* LOUP.—St. *Lubin des Joncherets,* a town of France, in the department of the Eure and Loire; 8 miles W. of Dreux.—St. *Lucar.* See *St.* LUCAR, &c.—St. *Lucas.* See *St.* LUCAS.—St. *Luce.* See *St.* LUCE.—St. *Lucia.* See *St.* LUCIA.—St. *Lucienſteig,* a very narrow paſs from the country of the Griſons into Germany, where all mercantile goods pay a toll to the Griſons; defended by a fort; 3 miles N. of Meyenfeld.—St. *Lucido.* See *St.* LUCIDO.—St. *Lucio.* See *St.* LUCIO.—St. *Luis.* See *St.* LUIS.—St. *Lupicien,* a town of France, in the department of the Jura; 3 miles W. of St. Claude.—St. *Lus.* See *St.* LUS.—St. *Lys.* See *St.* LYS.

St. *Macaire.* See *St.* MACAIRE.—St. *Macarius.* See *St.* MACARIUS.—St. *Madalena.* See *St.* MADALENA.—St. *Magnes,* a town of the duchy of Bremen, on the river Wumme; 8 miles N.W. of Bremen.—St. *Maixent.* See *St.* MAIXENT.—St. *Makſima.* See *St.* MAKSIMA.—St. *Malo.* See *St.* MALO.—St. *Mamet.* See *St.* MAMET.—St. *Mandé.* See *St.* MANDÉ.—St. *Mango,* a town of Naples, in Bari, 3 miles E. of Minorbino.—St. *Marc,* a town of France, in the department of the Ille and Vilaine; 9 miles W. of Fougeres.—St. *Marcel.* See *St.* MARCEL.—St. *Marcellin.* See *St.* MARCELLIN.—St. *Marcello.* See *St.* MARCELLO.—St. *Marco.* See *St.* MARCO.—St. *Marcouf.* See *St.* MARCOUF.—St. *Mard.* See *St.* MARD.—St. *Marga.* See *St.* MARGA.—St. *Margaret.* See *St.* MARGARET.—St. *Margretten,* a town of the duchy of Stiria; 5 miles E. of Marburg.—St. *Marguerite.* See MARGUERITE.—St. *Maria.* See *St.* MARIA.—St. *Mariakirchen,* a town of Auſtria, 4 miles S.W. of Efferding.—St. *Marie.* See *St.* MARIE.—St. *Maries.* See *St.* MARIES.—St. *Marin,* a town of France, in the department of the Upper Rhine; 4 miles S.S.W. of Delmont.—St. *Marinella,* a town of Italy, in the Patrimonio, on the coaſt; 4 miles S.E. of Civita Vecchia.—St. *Marinha.* See MARINHA.—St. *Marino.* See MARINO.—St. *Mark.* See *St.* MARK.—St. *Mars,* a town of France, in the department of the Indre and Loire; 9 miles W. of Tours.—St. *Mars de Loquenay,* a town of France, in the department of the Sarthe; 12 miles S.E. of Le Mans.—St. *Mars d'Outille,* a town of France, in the department of the Sarthe; 9 miles S.E. of Le Mans.—St. *Martha.* See MARTHA and MARTA.—St. *Martial.* See MARTIAL.—St. *Martiano.* See MARTIANO.—St. *Martin.* See *St.* MARTIN.—Alſo, a town of France, in the department of the Straits of Calais; 1 mile E. of Boulogne.—Alſo, a town of Spain, in Aſturia; 44 miles W. of Oviedo.—Alſo, a village of Italy, celebrated for its medicinal baths; 3 miles N. of Bormio.—St. *Martin d'Ablois,* a town of France, in the department of the Marne; 4 miles S.W. of Epernay.—St. *Martin de Belleville,* a town of France, in the department of Mont Blanc; 5 miles S. of Monſtier.—St. *Martin en Breſſe,* a town of France, in the department of the Saône and Loire; 7 miles E.N.E. of Chalons ſur Saône.—St. *Martinho.* See MARTINHO.—St. *Martino.* See MARTINO.—St. *Martinſberg.* See MARTINSBERG.—St. *Martinſdyck.* See MARTINSDYCK.—St. *Marton.* See MARTON.—St. *Martory.* See MARTORY.—St. *Mary.* See *St.* MARY.—St. *Marzano.* See MARZANO.—St. *Matcus.* See MATCUS.—St. *Mateo.* See MATEO.—St. *Matheo.* See MATHEO.—St. *Mathieu.* See MATHIEU.—St. *Mathurin,* a town of France, in the department of the Mayne and Loire; 9 miles S.E. of Angers.—St. *Matias.* See MATIAS.—St. *Matica.* See MATICA.—St. *Mattheia.* See MATTHEIA.—St. *Mattheius,* a town of Carinthia; 4 miles S. of Villach.—St. *Matthew.* See MATTHEW.—St. *Matthias.* See MATTHIAS.—St. *Maur.* See MAUR.—St. *Maure.* See MAURE.—St. *Maurice.* See MAURICE.—Alſo, a town of France, in the department of Mont Blanc; 24 miles W. of Aoſta.—St. *Maurice de Cazevielle,* a town of France, in the department of the Gard; 9 miles W. of Uzes.—St. *Maurice ſur Feſſord,* a town of France, in the department of the Loiret; 5 miles W. of Montargis.—St. *Maurice en Trieves,* a town of France, in the department of the Iſere; 24 miles S. of Grenoble.—St. *Maurin,* a town of France, in the department of the Lot and Garonne; 6 miles N. of Valence.—St. *Mauritio.* See MAURITIO.—St. *Mauro.* See MAURO.—St. *Mawes.* See MAWES.—St. *Maximin.* See MAXIMIN.—Alſo, a town of France, in the department of the Sarre; 2 miles N. of Treves.—Alſo, a town of France, in the department of the Iſere; 18 miles N.N.E. of Grenoble.—St. *Medar,* a town of France, in the department of the Dordogne; 12 miles S.E. of Mucidan.—St. *Medard.* See MEDARD.—St. *Medard de Gurſon,* a town of France, in the department of the Dordogne; 14 miles W. of Bergerac.—St. *Meen.* See MEEN.—St. *Meloir,* a town of France, in the department of the North Coaſts; 7 miles W. of Dinan.—St. *Menas.* See MENAS.—St. *Menehould.* See MENEHOULD.—St. *Menoux.* See MENOUX.—St. *Mère Egliſe,* a town of France, in the department of the Channel, and chief place of a canton, in the diſtrict of Valognes; 7 miles N. of Carentan. The place contains 1425, and the canton 11,843 inhabitants, on a territory of 227½ kiliometres, in 27 communes.—St. *Meſme,* a town of France, in the department of Mont Blanc; 5 miles N. of Beaufort.—St. *Meſmin,* a town of France, in the department of the Loiret, on the Loire; 3 miles W.S.W. of Orleans.—St. *Mexias,* a river of Africa, which runs into the Atlantic, S. lat. 1° 10′.—St. *Michael.* See *St.* MICHAEL.—St. *Michaila.* See MICHAILA.—St. *Michel.* See MICHEL.—Alſo, a town of Stiria; 3 miles S.W. of Leoben.—St. *Michel en Greve,* a town of France, in the department of the North Coaſts; 4 miles S.W. of Lannion.—St. *Michel en l'Herm,* a town of France, in the department of the Vendée; 7 miles S.S.W. of Luçon.—St. *Miguel.* See MIGUEL.—St. *Mihiel.* See MIHIEL.—St. *Miklos.* See MIKLOS.—St. *Millan,* a town of Spain, in Old Caſtile; 5 miles S. of Calzada.—St. *Miniato.* See MINIATO.—St. *Mont,* a town of France, in the department of the Gers; 9 miles S.W. of Nogaro.—St. *More,* a town of France, in the department of the Yonne; 15 miles S.S.E. of Auxerre.—St. *Morel,* a town of France, in the department of the Ardennes; 4 miles S. of

Vouziers.—St. *Moritz*, or St. *Morizzo*, a town of the Griſons, in Upper Engadina, containing a famous mineral ſpring, the waters of which are the moſt ſalubrious in Switzerland, and reckoned to ſurpaſs even thoſe of Pyrmont, in Germany; 25 miles N.N.E. of Chiavenna.—St. *Morten*, a town of Stiria, 6 miles E. of Landſperg.—Alſo, a town of Auſtria; 8 miles N.W. of Ottenſhein.

St. *Nazaire*, a town of France, in the department of the Drome; 7 miles E. of Romans.—Alſo, a town of France, in the department of the Lower Loire, and chief place of a canton, in the diſtrict of Savenay; 12 miles W.S.W. of Savenay. The place contains 3216, and the canton 8419 inhabitants, on a territory of 167½ kiliometres, in 3 communes.—Alſo, a town of France, in the department of the Var; 3 miles W. of Toulon.—St. *Neomaye*, a town of France, in the department of the Two Sevres; 9 miles N.E. of Niort.—St. *Neots*. See *St.* NEOTS.—St. *Nicandro*, a town of Naples, in Capitanata; 6 miles E. of Leſina.—Alſo, a town of Naples, in Bari; 6 miles S.E. of Bittetto.—St. *Nicholas*, one of the Cape Verd iſlands, of a triangular form, and about 30 leagues in circumference. The central part is mountainous, and the coaſts are barren. The inhabitants are black, or copper-coloured Chriſtians, under the direction of a Portugueſe prieſt: their number is about 6000. N. lat. 16° 28′. W. long. 24° 15′.—Alſo, an iſland, containing about three acres, at the mouth of Plymouth harbour, with a caſtle that commands the entrance; 2 miles S.W. of Plymouth.—Alſo, a town of France, in the department of Mont Blanc; 2½ miles S.W. of Flumet.—Alſo, a river of America, that runs into lake Michigan, N. lat. 43° 35′. W. long. 85° 35′.—Alſo, a town of Pruſſia, in Bartenland; 24 miles S. of Raſtenburg.—Alſo, a river of Africa, which runs into the Atlantic, S. lat. 13° 50′.—Alſo, a river of Africa, which runs into the Atlantic, N. lat. 4° 40′. E. long. 5° 35′.—St. *Nicholas Harbour* lies on the coaſt of Canada, on the N. ſide of the river St. Lawrence, 15 miles W. of Cape Montpelles.—St. *Nicholas Bay*, a bay on the N.W. coaſt of the iſland of Bali. S. lat. 8° 1′. E. long. 114° 35′. See *St.* NICHOLAS.—St. *Nicola*, a town of Stiria; 5 miles S.E. of Marburg.—Alſo, a town of Naples, in Capitanata; 14 miles E.N.E. of Leſina.—Alſo, a town of Naples, in Otranto; 11 miles S. of Oria.—St. *Nicolai Kirkiai*, a town of Eaſt Greenland. N. lat. 60° 45′. W. long. 44° 20′.—St. *Nicolas*, a town of Paraguay; 230 miles S.E. of Aſſumption.—Alſo, a town of Mexico, in New Biſcay; 130 miles N.W. of Durango.—Alſo, a town of Spain, in the province of Seville; 20 miles N. of Carmona.—Alſo, a town of the iſland of Cherſo; 30 miles N.W. of Cherſo.—Alſo, a town of France, in the department of the Meurthe, and chief place of a canton, in the diſtrict of Nancy; 7 miles S.E. of Nancy. The place contains 2700, and the canton 14,456 inhabitants, on a territory of 242½ kiliometres, in 25 communes.—Alſo, a town of France, in the department of the Scheldt; 12 miles S.W. of Antwerp.—Alſo, a town of Switzerland, in the canton of Berne; 12 miles N.N.E. of Berne.—Alſo, a town on the N.W. coaſt of the iſland of Hiſpaniola, ſituated on a bay, formed by Cape St. Nicholas, which affords an excellent and ſafe harbour; taken poſſeſſion of by the Engliſh in 1793. N. lat. 19° 50′. W. long. 72° 25′.—Alſo, a town of France, in the department of the North Coaſts; 8 miles N.E. of Roſhrenen.—St. *Nicolas de la Grave*, a town of France, in the department of the Upper Garonne; 21 miles N.N.W. of Grenade.—St. *Nicolas de Redon*, a town of France, in the department of the Lower Loire, and chief place of a canton, in the diſtrict of Savenay; 7 miles S. of Redon. The place contains 1026, and the canton 7093 inhabitants, on a territory of 270 kiliometres, in four communes.—St. *Nicolas de la Taille*, a town of France, in the department of the Lower Seine; 13 miles E. of Harfleur.—St. *Nicolo*, a mountain of Naples, in Abruzzo; 9 miles S.S.W. of Lanciano.—Alſo, a town of Sicily, in the valley of Noto; 18 miles S.W. of Noto.—Alſo, a town of Naples, in Calabria Ultra; 8 miles N.W. of Nicotera.—St. *Nicolo*, or *Tremiti*, one of the iſlands called Tremiti, about 12 miles from the coaſt of Naples; about eight miles in circumference, and containing a few hamlets, a convent of Benedictines, and a caſtle. N. lat. 42° 8′. E. long. 15° 29′.—Alſo, a ſmall iſland in the Mediterranean, 3 miles N.E. of Lindo, in the iſland of Rhodes.—Alſo, a ſea-port town on the N.W. coaſt of the iſland of Santorin, the ſee of a Greek biſhop, with a caſtle. N. lat. 36° 32′.—Alſo, a town of Sicily, in the valley of Noto; 14 miles W. of Modica.—Alſo, a ſea-port on the S. coaſt of the iſland of Tinos. N. lat. 37° 32′. E. long. 25° 8′.—Alſo, a ſmall iſland in the Grecian Archipelago, near the coaſt of Natolia. N. lat. 37° 20′. E. long. 27° 18′.—St. *Nicolo della Machia*, a town of Naples, in the province of Baſilicata; 11 miles W. of Motera.—St. *Nicolo di Ludo*, a fort in the iſland of Malamocco, with ſmall barracks for a garriſon.—St. *Ninians*. See *St.* NINIANS.

St. *Olalla*, a town of Spain, in New Caſtile; 18 miles N.W. of Toledo.—St. *Oluf*, a town of Sweden, in the province of Skonen; 13 miles S. of Chriſtianſtadt.—St. *Omer*, a town of France, in the department of the Straits of Calais, and principal place of a diſtrict; ſituated on the Ar, and ſtrongly fortified; before the revolution the ſee of a biſhop, and containing ſeveral religious houſes; 19 poſts N. of Paris. The north part contains 10,599, and its canton 14,504 inhabitants, on a territory of 87½ kiliometres, in 11 communes. The ſouth part contains 9510, and its canton 13,543 inhabitants, on a territory of 52½ kiliometres, in 7 communes. N. lat. 30° 45′. E. long. 9° 10′.—St. *Orſe*, a town of France, in the department of the Dordogne; 9 miles S. of Exideuil.—St. *Oſith*. See OSITH.—St. *Oſwald*. See OSWALD.—St. *Ouen*, a town of France, in the department of the Indre and Loire; 4 miles N. of Amboiſe.—Alſo, a town of France, in the department of Paris; 4 miles N. of Paris.—St. *Ouen des Oyes*, a town of France, in the department of the Mayenne; 6 miles N.W. of Laval.—St. *Owen's Bay*. See *St.* OWEN's *Bay*.—St. *Oyen*, a town of France, in the department of the Dora; 9 miles N. of Aoſta.

St. *Pablo*. See PABLO.—Alſo, a town of Peru, in the biſhopric of Truxillo, and juriſdiction of Caxamarca; 36 miles E. of Caxamarca.—Alſo, a town of South America, in the audience of Quito, and juriſdiction of Atabalo, ſeated on a lake of the ſame name; 40 miles E. of Quito.—Alſo, a river of Eaſt Florida, which runs into the St. John, N. lat. 30° 34′. W. long. 81° 50′.—St. *Pal en Chalençon*, a town of France, in the department of the Upper Loire; 9 miles N.W. of Moniſtrol.—St. *Palais*. See PALAIS.—St. *Paolo*. See PAOLO.—St. *Pantaleo*. See PANTALEO.—St. *Papoul*. See PAPOUL.—St. *Pardoux*. See PARDOUX.—St. *Pargoire*. See PARGOIRE.—St. *Pater*, a town of France, in the department of the Sarthe; 3 miles S. of Alençon.—St. *Paterne*, a town of France, in the department of the Morbihan; 6 miles S.W. of Vannes.—St. *Paternian*, a town of Upper Carinthia; 8 miles W. of Villach.—St. *Patrick*. See PATRICK.—St. *Patrick's Bridge*, a chain of rocks on the S. coaſt of Ireland, extending about three miles in a curve from the little *Saltee* northwards to the main-land of the county of Wexford, near Ballyteig.

This ridge, which is narrow, and always under water, is compoſed of large ſtones, like paving-ſtones. The depth on it at low water is from ſeven to ten feet; but it is ſaid, that it was formerly paſſable at ſuch times.—St. *Patrick's Purgatory*, a ſmall iſland in Lough Derg, Ireland. See Derg, *Lough*.—St. *Pau*. See Pau.—St. *Paul*. See *St.* Paul.—St. *Paul en Jareſt*, a town of France, in the department of the Rhone and Loire; 18 miles S.S.W. of Lyons.—St. *Paul de Jarrat*, a town of France, in the department of the Arriege; 4 miles N.N.E. of Taraſcon.—St. *Paul les Romans*, a town of France, in the department of the Drôme; 4 miles N.E. of Romans.—St. *Paula*. See *St.* Paula.—St. *Paulien*. See Paulien.—St. *Pauzanne*, a town of France, in the department of the Lower Loire; 12 miles S.W. of Nantes.—St. *Payo*. See Payo.—St. *Pé*, a town of France, in the department of the Upper Pyrenées; 7 miles N. of Argellez.—St. *Pecaque*. See Pecaque.—St. *Pedro*. See *St.* Pedro.—St. *Pelagia*. See Pelagia.—St. *Pellegrino*, a ſea-port town of the iſland of Corſica, the greateſt part of which is in ruins; 21 miles S.E. of Baſtia. N. lat. 42° 23′. E. long. 9° 33′.—St. *Peray*. See Peray.—St. *Père en Retz*. See *St.* Père.—St. *Pereux*, a town of France, in the department of the Rhone and Loire; 3 miles E. of Roanne.—St. *Peter*. See *St.* Peter.—St. *Peterſburg*. See Petersburg.—Alſo, a town of Upper Bavaria; 37 miles S.E. of Munich.—St. *Peterſthal*. See Petersthal.—St. *Philbert de grand Lieu*, a town of France, in the department of the Lower Loire; 12 miles S. of Nantes.—St. *Philip*, a town of Mexico, in the province of Mechoacan.—St. *Philip's Iſland*, an iſland in the South Atlantic ocean. S. lat. 12° 22′. E. long. 13° 25′.—St. *Philip's Bay*, a bay on the E. coaſt of Cochinchina. N. lat. 12° 27′. E. long. 109° 8′.—St. *Philippe d'Aſturia d'Oruro*, a town of Peru, in the juriſdiction of Oruro.—St. *Philippo d'Argyrone*, a town of Sicily, in the valley of Noto; 27 miles W. of Catania.—St. *Piedro*, a town of Iſtria; 6 miles S.S.W. of Capo d'Iſtria.—St. *Pierre*. See *St.* Pierre.—Alſo, a town of France, in the department of the Straits of Calais; 3 miles S.E. of Calais.—Alſo, a town of France, in the department of the Tarn; 6 miles N.W. of La Caune.—Alſo, a town of the Valais; 14 miles S. of Martigny.—Alſo, a ſmall iſland in the Indian ſea. S. lat. 9° 8′. E. long. 55° 15′.—Alſo, a ſmall iſland in the Eaſt Indian ſea, near the W. coaſt of Borneo. N. lat. 1° 54′. E. long. 109° 9′.—Alſo, an iſland in the South Atlantic ocean, diſcovered by M. Guyot, a Frenchman, who commanded a Spaniſh veſſel in 1756. This iſland has ſince been ſeen by captain Cook, and called "Georgia."—Alſo, a river of North America, which riſes far to the N.W., and, after a S.E. courſe, joins the Miſſiſippi about N. lat. 44° 40′. It is at its mouth in the Miſſiſippi about 100 yards broad. About 50 miles from its mouth are ſome rapids. It is ſuggeſted by captain Carver, that, though the rivers St. Pierre and the Miſſouri enter the Miſſiſippi 1200 miles from each other, they take their riſe within one mile of each other. The northern branch of St. Pierre flows from a number of lakes, near the Shining mountains; and here alſo the river Bourbon, which diſcharges itſelf into Hudſon's bay, has its ſource. The river St. Pierre, traverſing the country of the Naudoweſſies, paſſes through a delightful country, abounding with the neceſſaries of life, and capable of cultivation, ſo as to afford its luxuries. Wild rice grows in abundance, and the trees are loaded with fruit, ſuch as plums, grapes, and apples. The meadows are covered with hops, and many ſorts of vegetables, whilſt the ſoil produces many uſeful roots, angelica, ſpikenard, and ground-nuts.—Alſo, a lake of Canada, being a large expanſion of the river St. Lawrence. N. lat. 45° 8′. W. long. 72° 40′.—Alſo, a ſmall iſland, near the coaſt of Newfoundland, chiefly uſed for curing and drying fiſh; uſually ceded to France in peace, and in time of war taken by the Britiſh forces. N. lat. 46° 30′. W. long 56° 37′.—Alſo, a ſea-port town of the iſland of Martinico, in a bay on the W. coaſt. N. lat. 14° 43′. W. long. 61° 10′.—St. *Pierre de Bœuf*, a town of France, in the department of the Rhone and Loire; 12 miles W. of St. Etienne.—St. *Pierre de Ghemin*, a town of France, in the department of the Vendée; 3 miles N.N.E. of Chataigneraye.—St. *Pierre du Chignac*, a town of France, in the department of the Dordogne; 8 miles S.E. of Perigueux.—St. *Pierre d'Eſtripiers*, a town of France, in the department of the Lozere; 7 miles N.W. of Meyrveis.—St. *Pierre à Oiſeau*, the largeſt of the cluſter, called the "Seven Iſlands," near the coaſt of France.—St. *Pierremont*, a town of France, in the department of the Ardennes; 9 miles N. of Grandpré.—St. *Pierres les Meliſey*, a town of France, in the department of the Upper Saône; 5 miles N.N.E. of Lure.—St. *Pierreville*. See Pierreville.—St. *Pietra*. See Pietra.—St. *Pietro*, a town of the iſland of Corſica; 10 miles S.W. of Baſtia.—Alſo, a town of Corſica; 6 miles S.W. of Oletta.—Alſo, an iſland, anciently "Hieracium," in the Mediterranean; 7 miles from the S. coaſt of Sardinia; 13 miles long and 3 broad. N. lat. 39° 15′. E. long. 8° 24′.—Alſo, a town of Italy, in the department of the Upper Po; 14 miles E. of Cremona.—Alſo, a town of Italy, in the Feltrin; 7 miles N. of Feltri.—Alſo, a town of Italy, in Friuli; 12 miles N.W. of Gemona.—Alſo, a ſmall iſland in the gulf of Venice. N. lat. 44° 39′. E. long. 14° 48′.—St. *Pietro en Bogno*, a town of Etruria; 38 miles E. of Florence.—St. *Pietro Galatina*, a town of Naples, in the province of Otranto; 6 miles E. of Nardo.—St. *Pietro in Maon*, a town of Italy, in the Poleſine de Rovigo; 7 miles from Rovigo.—St. *Placido*, a town of Sicily, in the valley of Demona; 6 miles S. of Meſſina.—St. *Planchard*, a town of France, in the department of the Upper Garonne; 9 miles N.W. of St. Gaudens.—St. *Pois*. See *St.* Pois.—St. *Pol*. See Pol.—St. *Polgue*, a town of France, in the department of the Rhone and Loire; 9 miles S.S.W. of Roanne.—St. *Polten*, or St. *Hypolite*, a town of Auſtria, on the river Traſen, originating with a convent of Auguſtines, founded there in the eighth century; 26 miles W. of Vienna.—St. *Pons*. See *St.* Pons.—St. *Porquier*, a town of France, in the department of the Upper Garonne; 4 miles S.E. of Caſtel Sarazin.—St. *Pourçain*, a town of France, in the department of the Allier; 13 miles N. of Gannat.—St. *Praſſeda*, a town of Campagna di Roma; 12 miles N.E. of Rome.—St. *Preſt*, a town of France, in the department of the Eure and Loire; 6 miles N. of Chartres.—St. *Prez*, or St. *Prex*, a town of Switzerland, in the canton of Berne, on the N. coaſt of the lake of Geneva; 8 miles S.W. of Lauſanne.—St. *Prieſt*, a town of France, in the department of the Iſere; 6 miles S.E. of Lyons.—St. *Priman*, a town of the duchy of Stiria; 10 miles N.W. of Windiſch Gratz.—St. *Primus*, a town of Stiria; 12 miles S.W. of Windiſch Gratz.—St. *Privat*, a town of France, in the department of the Upper Loire; 9 miles S.W. of Puy en Velay.—St. *Prix*, a town of France, in the department of the Seine and Oiſe; 10 miles N. of Paris.—Alſo, a town of France, in the department of the Yonne; 4 miles S.S.E. of Auxerre.—St. *Prix ſous Beuvray*, a town of France, in the department of the Saône and Loire; 9 miles W. of Autun.—St. *Puy*, a town of France, in the department of the Gers; 6 miles S.S.E. of Condom.

St. *Quentin*, a town of France, and principal place of a diſtrict, in the department of the Aiſne, on an eminence near the Somme; 6½ poſts N.N.E. of Paris. The place contains 10,458, and the canton 14,357 inhabitants, on a territory of 135 kiliometres, in 14 communes. N. lat. 49° 51′. E. long. 3° 43′.—Alſo, a town of France, in the department of the Iſere, and chief place of a canton, in the diſtrict of St. Marcellin; 12 miles N.E. of St. Marcellin. The place contains 1291, and the canton 3490 inhabitants, on a territory of 90 kiliometres, in 5 communes.—Alſo, a town of France, in the department of the Gard; 3 miles N. of Uzes.—St. *Quirico*, a town of Etruria; 8 miles W.S.W. of Monte Pulciano.

St. *Rafael*. See Rafael.—St. *Rambert*, a town of France, in the department of the Ain, and chief place of a canton, in the diſtrict of Belley; 27 miles N.E. of Lyons. The place contains 2596, and the canton 7998 inhabitants, on a territory of 112½ kiliometres, in 11 communes. N. lat. 45° 57′. E. long. 5° 31′.—Alſo, a town of France, in the department of the Loire, and chief place of a canton, in the diſtrict of Montbriſon; 10 miles S.E. of it. The place contains 2355, and the canton 11,881 inhabitants, on a territory of 195 kiliometres, in 13 communes.—St. *Raphael*, a diſtrict and bay of Africa, in the kingdom of Quiloa, ſo called by the Portugueſe from the loſs of a veſſel belonging to Vaſco de Gama, on the coaſt; 35 miles S. of Monbaça.—St. *Raymondo*, a town of Braſil, on the Urubui; 60 miles N.E. of Fort Rio Negro.—St. *Regis*. See Regis.—Alſo, a town of South America, in the kingdom of Grenada, on the Meta; 60 miles E.N.E. of St. Juan de los Llanos.—Alſo, an iſland in the river St. Lawrence, containing near 1000 acres. N. lat. 45° 3′. W. long. 74° 45′.—St. *Regolo*, a town of Etruria; 9 miles E. of Leghorn.—St. *Remedio*, a town of Tyrol; 13 miles S.W. of Bolzano.—St. *Remi*, a town of France, in the department of the Doria, near the Great St. Bernard; 9 miles N. of Aoſta.—St. *Remo*, a ſea-port town of Genoa, ſituated in a pleaſant valley, and having a good harbour in the Mediterranean. Its vicinity produces lemons, pomegranates, and other fruits, with numerous olive-trees that yield excellent oil; 6 miles E.N.E. of Vintimiglia. N. lat. 43° 47′. E. long. 7° 46′.—St. *Remy*, a town of France, and ſeat of a tribunal, in the department of the Mouths of the Rhone, and chief place of a canton, in the diſtrict of Taraſcon; 7 miles E. of Taraſcon. The place contains 5055, and the canton 10,355 inhabitants, on a territory of 165 kiliometres, in 6 communes. N. lat. 43° 47′. E. long. 4° 55′.—Alſo, a town of France, in the department of the Puy de Dôme, and chief place of a canton, in the diſtrict of Thiers; 3 miles N.E. of Thiers. The place contains 2683, and the canton 9422 inhabitants, on a territory of 170 kiliometres, in 4 communes.—St. *Remy en Bouzemont*, a town of France, in the department of the Marne, and chief place of a canton, in the diſtrict of Vitry ſur Marne, ſix miles S. of it. The place contains 533, and the canton 8118 inhabitants, on a territory of 297½ kiliometres, in 34 communes.—St. *Renan*, a town of France, in the department of the Finiſterre, and chief place of a canton, in the diſtrict of Breſt; 6 miles N.W. of Breſt. The place contains 890, and the canton 12,776 inhabitants, on a territory of 217½ kiliometres, in 10 communes.—St. *Reverein*, a town of France, in the department of the Nievre; 7 miles S.W. of Corbigny.—St. *Reyne*, a town of France, in the department of the Côte d'Or; 7 miles N.E. of Semur en Auxois.—St. *Ricquier*, a town of France, in the department of the Somme; 6 miles N.E. of Abbeville.—St. *Rita*, a town of South America, in the province of Carthagena; 70 miles S.E. of Carthagena.—St. *Robert*, a town of France, in the department of the Correze; 12 miles N.W. of Brive.—St. *Roch*, a town of Canada, on the St. Lawrence river; 56 miles N.E. of Quebec.—St. *Romain*. See *St.* Romain.—St. *Romano*. See Romano.—St. *Romaon*. See Romaon.—St. *Rome du Tarn*. See *St.* Rome, &c.—St. *Ronans*, one of the ſmaller Shetland iſlands, near the W. coaſt of Shetland. N. lat. 59° 56′. W. long. 1° 35′.—St. *Roſa*, a town of Hiſpaniola, on the S. ſide of St. Domingo, and dependent upon it.—Alſo, a town of New Grenada; 30 miles S.W. of Santa Fé de Bogota.—Alſo, an iſland in the gulf of Mexico, near the S. coaſt of Weſt Florida. N. lat. 30° 26′. W. long. 86° 50′.—St. *Roſa Bay*, a bay in the gulf of Mexico, on the S. coaſt of Weſt Florida. N. lat. 30° 33′. W. long. 86° 5′ to 86° 32′.—St. *Roſa de Oas*, a town of South America, in the audience of Quito, on the Napo; 40 miles S.E. of Archidona.—St. *Roſe*, a town of Canada, in the iſland of Jeſus; 12 miles N.W. of Montreal.—St. *Ruprecht*, a town of the duchy of Stiria; 9 miles E.N.E. of Gratz.—Alſo, a town of Stiria; 4 miles N. of Pettau.

St. *Saba*, a village of Paleſtine, in which is a celebrated monaſtery, founded in the 5th century; 18 miles S.E. of Jeruſalem.—St. *Saba de Milaſevo*, a town of European Turkey, in the province of Servia; 25 miles W.N.W. of Jenibaſar.—St. *Sacrament*, a town of South America, in the government of Buenos Ayres, on the left bank of the river La Plata, ſettled by the Portugueſe; taken by the Spaniards in 1777, and ceded to them by treaty; nearly oppoſite to Buenos Ayres, and 90 miles W. of Montevideo.—St. *Sadurni*, a town of Spain, in Catalonia; 13 miles W.N.W. of Barcelona.—St. *Saëns*, a town of France, in the department of the Lower Seine, and chief place of a canton, in the diſtrict of Neufchâtel; 7 miles S.W. of it. The place contains 2520, and the canton 9650 inhabitants, on a territory of 167½ kiliometres, in 19 communes.—St. *Salvador*. See Salvador.—Alſo, a town of France, in the department of the Maritime Alps, and chief place of a canton, in the diſtrict of Nice. The place contains 229, and the canton 1836 inhabitants, on a territory of 342½ kiliometres, in 5 communes.—St. *Salvatore*, a town of France, in the department of the Po; 6 miles N.W. of Alexandria.—Alſo, a town of Naples, in Calabria Citra; 21 miles E. of Coſenza.—St. *Salvo*, a town of Naples, in Abruzzo Citra; 16 miles S.E. of Civita Borella.—St. *Samſon*, a town of France, in the department of the Eure; 6 miles N. of Pont Audemer.—Alſo, a town of France, in the department of the Maine and Loire; 3 miles N.E. of Angers.—St. *Samuela*, a ſmall iſland in the North Pacific ocean. N. lat. 62° 35′. E. long. 190° 34′.—St. *Saphorin*, a town of Switzerland, in the canton of Berne, on the N. coaſt of the lake of Geneva; 3 miles W. of Vevai.—St. *Satur*, a town of France, in the department of the Cher; 2 miles N.E. of Sancerre.—St. *Saturnin*, a town of France, in the department of the Puy de Dôme; 6 miles S. of Clermont.—Alſo, a town of France, in the department of the Mouths of the Rhone; 5 miles N. of Apt.—St. *Saturnin de Lenne*, a town of France, in the department of the Aveiron; 6 miles N. of Severac la Chateau.—St. *Savilla*, a town of the ſtate of Georgia; 64 miles S. of Savannah.—St. *Savin*, a town of France, in the department of the Gironde; 9 miles W. of Blaye.—Alſo, a town of France, in the department of the Vienne, and chief place of a canton, in the diſtrict of Mont-Morillon; 7 miles N. of it. The place contains 848, and the canton 10,543 inhabitants, on a territory of 312½ kiliometres, in 11 communes.—Alſo, a town of France, in the department of the Upper Pyrenées;

3 miles S. of Argellez.—St. *Savinien*, a town of France, in the department of the Lower Charente, and chief place of a canton, in the diſtrict of Jean d'Angely; 7 miles S.W. of it. The place contains 2878, and the canton 8975 inhabitants, on a territory of 157½ kiliometres, in 14 communes.—St. *Saulge*, a town of France, in the department of the Nievre, and chief place of a canton, in the diſtrict of Nevers; 16 miles E.N.E. of Nevers. The place contains 1700, and the canton 9081 inhabitants, on a territory of 295 kiliometres, in 11 communes.—St. *Sauſlieu*, a town of France, in the department of the Somme; 7 miles S. of Amiens.—St. *Sauvant*, a town of France, in the department of the Vienne; 18 miles S.W. of Poitiers.—St. *Sauvere*, a town of France, in the department of the Allier; 12 miles N.W. of Montluçon.—St. *Sauveur*, a town of France, in the department of the Yonne, and chief place of a canton, in the diſtrict of Auxerre; 18 miles S.W. of it. The place contains 1023, and the canton 9851 inhabitants, on a territory of 267½ kiliometres, in 11 communes.—Alſo, a town of France, in the department of the Rhone and Loire; 10 miles S.E. of St. Etienne.—St. *Sauveur de Lendelin*, a town of France, in the department of the Channel, and chief place of a canton, in the diſtrict of Coutances; 4 miles N. of it. The place contains 2000, and the canton 11,938 inhabitants, on a territory of 120 kiliometres, in 11 communes.—St. *Sauveur ſur Douves*, a town of France, in the department of the Channel, and chief place of a canton, in the diſtrict of Valognes; 7 miles S.S.W. of it. The place contains 2051, and the canton 12,720 inhabitants, on a territory of 165 kiliometres, in 18 communes.—St. *Sauvy*, a town of France, in the department of the Gers; 10 miles E. of Auch.—St. *Scamegne*, a town of Naples, in Lavora, 12 miles N.N.E. of Capua.—St. *Sebaſtian*. See SEBASTIAN.—St. *Sebaſtiaõ*, a town of Braſil, in the government of Para; 60 miles W. of Pauxis.—Alſo, a river of Braſil, which runs into the Atlantic, N. lat. 23° 40′.—St. *Sebaſtien*, a town of France, in the Lower Loire, on the S. ſide of the Loire; 3 miles S.E. of Nantes.—St. *Secondo*, a town of Piedmont, in the province of the Four Vallies; 2 miles S.W. of Pinerolo.—Alſo, a town of the duchy of Parma; 10 miles N.N.W. of Parma.—St. *Segal*, a town of France, in the department of the Finiſterre; 3 miles N.E. of Chateaulin.—St. *Seine*, a town of France, in the department of the Côte d'Or, and chief place of a canton, in the diſtrict of Dijon; 12 miles N.W. of Dijon. The place contains 753, and the canton 6304 inhabitants, on a territory of 365 kiliometres, in 17 communes.—St. *Serff*, or St. *Servolo*, an ancient village and iſland of Carniola, ſituated on a mountain, the environs of which are celebrated for excellent wine; 6 miles E. of Trieſte.—St. *Sernin*, a town of France, in the department of the Aveiron, and chief place of a canton, in the diſtrict of St. Afrique; 13 miles W.S.W. of it. The place contains 1014, and the canton 12,189 inhabitants, on a territory of 325 kiliometres, in 22 communes.—St. *Servan*, a town of France, in the department of the Ille and Vilaine; 2 miles S. of St. Malo.—St. *Sever*, a town of France, and principal place of a diſtrict, in the department of the Landes; 9 miles S.S.W. of Mont-de-Marſan. The place contains 5844, and the canton 15,928 inhabitants, on a territory of 250 kiliometres, in 19 communes.—Alſo, a town of France, in the department of the Calvados, and chief place of a canton, in the diſtrict of Vire; 6 miles W. of Vire.—The place contains 1527, and the canton 14,103 inhabitants, on a territory of 192½ kiliometres, in 21 communes.—Alſo, a town of France, in the department of the Indre, and chief place of a canton, in the diſtrict of La Chatre. The place contains 516, and the canton 5322 inhabitants, on a territory of 227½ kiliometres, in 11 communes; 6 miles S.S.E. of La Chatre.—St. *Sever de Ruſtan*, a town of France, in the department of the Upper Pyrenées; 10 miles N.N.E. of Tarbe.—St. *Severina*, a town of Naples, in Calabria Ultra, the ſee of an archbiſhop, founded by the patriarch of Conſtantinople; containing eight churches and two convents; 18 miles E. of Coſenza. N. lat. 39° 6′. E. long. 14° 47′.—St. *Severino*, a town of Naples, in Principato Citra; 5 miles N. of Salerno.—Alſo, a town of Naples, in Principato Citra; 10 miles S.W. of Policaſtro.—Alſo, a town of the marquiſate of Ancona, on the Potenza, the ſee of a biſhop, ſuffragan of Fermo, containing two churches, and ten convents; 30 miles S.S.W. of Ancona. N. lat. 43° 10′. E. long. 13° 18′.—St. *Seviero*, or *Severio*, a town of Naples, in Capitinata, the ſee of a biſhop, ſuffragan of Benevento; 26 miles W.S.W. of Manfredonia. N. lat. 41° 44′. E. long. 15° 34′.—St. *Sidroine*, a town of France, in the department of the Yonne; 3 miles S.E. of Joigny.—St. *Sigiſmund*, a town of the Tyrol; 16 miles S.W. of Inſpruck.—Alſo, a town of Stiria; 11 miles N. of Pruck.—St. *Sigmund*, a town of the Tyrol, on the Inn; 16 miles N.E. of Landeck.—St. *Silvaine*, a town of France, in the Calvados; 9 miles N. of Falaiſe.—St. *Simon*, a town of France, in the department of the Aiſne, and chief place of a canton, in the diſtrict of St. Quintin; 7 miles S.S.W. of it. The place contains 315, and the canton 10,039 inhabitants, on a territory of 147½ kiliometres, in 25 communes.—Alſo, a town of Iſtria; 6 miles S.W. of Capo d'Iſtria.—Alſo, an iſland in the Atlantic, near the coaſt of Georgia, about 12 leagues in extent. N. lat. 31° 15′. W. long. 81° 36′.—Alſo, a town of New Navarre; 105 miles W. of Caſa Grande.—St. *Sinico*, a town of Naples, in Baſilicata; 9 miles E. of Acerenza.—St. *Sixt*, a town of Auſtria; 4 miles S. of Engelbartzel.—St. *Soffia*, a town of Naples, in Baſilicata; 6 miles S.E. of Muro.—Alſo, a town of the duchy of Spoleto; 22 miles W.N.W. of Urbino.—St. *Solicito*, a town of Naples, in the county of Moliſe; 6 miles N. of Moliſe.—St. *Sorlin*, a town of France, in the department of the Ain, near the Rhone; 4 miles S.S.W. of St. Rambert.—Alſo, a town of France, in the department of the Saône and Loire; 4 miles N.W. of Macon.—St. *Soto*, a town of Naples, in Calabria Ultra; 10 miles S. of Squillace.—St. *Stefano*, a town of France, in the department of the Tanaro; 12 miles E. of Alba.—Alſo, a town of the Ligurian republic; 18 miles N.W. of Brugnetto.—Alſo, a town of Naples, in Calabria Ultra; 15 miles S. of Squillace.—Alſo, a ſmall iſland near the S. coaſt of Sardinia. N. lat. 39° 13′. E. long. 9° 42′.—St. *Stefano di Belbo*, a town of France, in the department of the Tanaro; 15 miles S.S.E. of Aſti.—St. *Stephan*, a town of the duchy of Stiria; 7 miles S.S.W. of Leoben.—Alſo, a town of the duchy of Carinthia; 14 miles S.E. of Saxenburg.—St. *Stephano*, an uninhabited iſland in the Mediterranean, which furniſhes ſome bruſh-wood to the inhabitants of Ventotiena, to whom it is near.—Alſo, a town of France, in the Maritime Alps; 7 miles N.N.W. of Boglio.—Alſo, a town of the Tyrol; 11 miles N.N.E. of Trent.—Alſo, a town of Naples, in Abruzzo Ultra; 7 miles E. of Aquila.—St. *Stephano delle Corgnole*, a town of Naples, in the province of Bari; 5 miles S.S.E. of Monopoli.—St. *Stephens*, a town of South Carolina; 35 miles N. of Charleſtown.—St. *Sulpice*, a town of Canada, on the river St. Lawrence; 18 miles N.N.E. of Montreal.—Alſo, a town of France, in the department of the Nievre; 9 miles E.N.E. of Nevers.—St. *Sulpice les Feuilles*, a town of France, in the department of the Upper Vienne, and chief place of a canton,

ton, in the diſtrict of Bellac; 13 miles E.N.E. of Dorat. The place contains 1237, and the canton 9086 inhabitants, on a territory of 267½ kiliometres, in 10 communes.—St. *Sulpice les Champs*, a town of France, in the department of the Creuſe, and chief place of a canton, in the diſtrict of Aubuſſon. The place contains 1057, and the canton 7622 inhabitants, on a territory of 647½ kiliometres, in 12 communes.—St. *Sulpice de Lezat*, a town of France, in the Upper Garonne; 18 miles S. of Toulouſe.—St. *Sulpice de la Pointe*, a town of France, in the department of the Tarn; 15 miles N.N.E. of Toulouſe.—St. *Suſanna*, a town of Naples, in the province of Otranto; 7 miles E. of Oria.—Alſo, an iſland, called alſo "Sir William Draper's Iſland," in the Mergui Archipelago, near the coaſt of Siam, about 20 miles in circumference. N. lat. 10° 32'.—St. *Suſanne*, a town of France, and ſeat of a tribunal, in the department of the Mayenne, and chief place of a canton, in the diſtrict of Laval; 16 miles E. of Laval. The place contains 1487, and the canton 9290 inhabitants, on a territory of 197½ kiliometres, in 10 communes. N. lat. 48° 6'. W. long. 0° 16'.—St. *Symphorien*, a town of France, in the department of the Aveiron; 6 miles S.E. of Mur de Barres.—Alſo, a town of France, in the department of the Gironde; 12 miles W. of Bazas.—Alſo, a town of France, in the department of the Saone and Loire; 4 miles N.N.E. of Charolles.—St. *Symphorien le Chatelet*, a town of France, in the department of the Rhone and Loire; 13 miles S.W. of Lyons.—St. *Symphorien en Lay*, a town of France, in the department of the Rhone and Loire; 6 miles S.E. of Roanne.—St. *Symphorien d'Ozon*, a town of France, in the department of the Iſere; 6 miles N. of Vienne.

St. *Tadeo*, a town of New Navarre; 120 miles W. of Caſa Grande.—St. *Teodoro*, a ſmall iſland near the N. coaſt of Candy; 8 miles N.W. of Canea.—St. *Tereſa*, a town of New Granada, at the conflux of the Metz and Oroonoko; 300 miles E. of Santa Fé de Bogota.—Alſo, a town of New Mexico, in the province of Cinaloa; 95 miles N.E. of Cinaloa.—St. *Thegonec*, a town of France, in the department of the Finiſterre; 6 miles S.W. of Morlaix.—St. *Theodoſia*, a ſmall iſland in the North Pacific ocean. N. lat. 62° 20'. E. long. 192°.—St. *Theoffry*, a town of France, in the department of the Iſere; 12 miles S. of Grenoble.—St. *Thierry*, a town of France, in the department of the Marne; 4 miles N.W. of Rheims.—St. *Thomas*. See *St.* Thomas.—St. *Thome*, a town of France, in the department of the Ardeche; 6 miles W. of Viviers.—Alſo, a town of Paraguay; 300 miles E. of Aſſumption.—Alſo, a town of Hiſpaniola; 90 miles N.W. of St. Domingo. N. lat. 19° 10'. W. long. 72° 11'.—St. *Thomé de Guiana*, a town of Guiana, on the left bank of the Oroonoko, belonging to the Portugueſe. N. lat. 8° 8'. W. long. 62° 16'.—St. *Tita*, a ſmall iſland in the North Pacific ocean. N. lat. 63° 51'. E. long. 190° 14'.—St. *Tomas*, a town of New Mexico, in the province of Mayo; 150 miles N.E. of Santa Cruz.—St. *Tomas de Aquino*, a town of New Navarre; 230 miles W. of Caſa Grande.—St. *Tomas de Caſtile*, a town of Mexico, in the province of Vera Paz, at the mouth of the river Guanacos, where it opens into the Golfo Dolce; 50 miles E. of Vera Paz. N. lat. 15° 46'. W. long. 90° 26'.—Alſo, a ſmall iſland in the Pacific ocean, near the coaſt of Mexico. N. lat. 20° 10'.—Alſo, a Spaniſh ſettlement and miſſion in New Albion, near the coaſt of the Pacific ocean, formed in the year 1778. N. lat. 31° 2'. E. long. 244° 13.—St. *Trevier de Courtes*, a town of France, in the department of the Ain, and chief place of a canton, in the diſtrict of Bourg; 6 miles E.N.E. of Pont-de-Vaux. The place contains 1867, and the canton 11,318 inhabitants, on a territory of 225 kiliometres, in 13 communes. N. lat. 46° 28'. E. long. 5° 10'.—St. *Trevier du Mograns*, a town of France, in the department of the Ain, and chief place of a canton, in the diſtrict of Trevoux; 18 miles N. of Lyons. The place contains 925, and the canton 7764 inhabitants, on a territory of 282½ kiliometres, in 21 communes.—St. *Tron*, a town of France, in the department of the Lower Meuſe, and chief place of a canton, in the diſtrict of Haſſelt, lately belonging to the biſhopric of Liege, ſituated on the frontiers of Brabant. Its ancient name was "Sarcine," or "Sarcinium;" but its preſent appellation was derived from that of an abbey, built here about the year 657 by St. Trudon, or St. Tron, a rich lord of the country; 14 miles N.W. of Liege. The place contains 5801, and the canton 12,612 inhabitants, on a territory of 210 kiliometres, in 30 communes. N. lat. 50° 40'. E. long. 5° 16°.—St. *Trone*, a town of France, in the department of Mont Blanc; 3 miles E.N.E. of Monſtier.—St. *Tropez*, a ſea-port town of France, in the department of the Var, and chief place of a canton, in the diſtrict of Draguignan, ſituated in a bay of the Mediterranean, about 10 miles in length, to which it gives name, defended by a citadel; 9 miles S. of Frejus. The place contains 3156, and the canton 4929 inhabitants, on a territory of 212½ kiliometres, in 5 communes.—St. *Tulle*, a town of France, in the department of the Lower Alps; 10 miles S. of Forcalquier.

St. *Vaaſt*, a town of France, in the department of the Channel, with a ſmall harbour and ſalt-works; 9 miles N.E. of Valognes.—St. *Valentino*, a town of Naples, in Abruzzo Citra; 12 miles N. of Sulmona.—St. *Valery*, a ſea-port town of France, in the department of the Somme, and chief place of a canton, in the diſtrict of Abbeville, on the Somme. It has conſiderable trade, but no harbour; 9 miles N.W. of Abbeville. The place has 3328, and the canton 11,943 inhabitants, on a territory of 180 kiliometres, in 13 communes. N. lat. 50° 37'. E. long. 1° 16'.—St. *Valery en Caux*, a town of France, in the department of the Lower Seine, and chief place of a canton, in the diſtrict of Yvetot; 11 miles S.W. of Dieppe. The place contains 5017, and the canton 14,384 inhabitants, on a territory of 145 kiliometres, in 29 communes. William I. is ſaid to have ſailed from hence when he made his deſcent in England. N. lat. 49° 52'. E. long. 0° 47'.—St. *Vallier*, a town of France, in the department of the Drome, and chief place of a canton, in the diſtrict of Valence, 12 miles N. of it. The place contains 1736, and the canton 9804 inhabitants, on a territory of 187½ kiliometres, in 16 communes.—Alſo, a town of France, in the department of the Var, and chief place of a canton, in the diſtrict of Graſſe; 4 miles N.W. of Graſſe. The place contains 518, and the canton 3715 inhabitants, on a territory of 187½ kiliometres, in 5 communes.—St. *Vandrille*, a town of France, in the department of the Lower Seine; 3 miles E. of Caudebec.—St. *Varent*, a town of France, in the department of the Two Sevres, and chief place of a canton, in the diſtrict of Thouars; 5 miles S. of Thouars. The place contains 1150, and the canton 3709 inhabitants, on a territory of 180 kiliometres, in 9 communes.—St. *Vaury*, a town of France, in the department of the Creuſe, and chief place of a canton, in the diſtrict of Gueret; 6 miles N.W. of Gueret. The place contains 2247, and the canton 9465 inhabitants, on a territory of 202½ kiliometres, in 9 communes.—St. *Veit*. See Veit.—St. *Veith*, a town of Stiria; 3 miles N. of Gratz.—St.

Venant, a town of France, in the department of the Straits of Calais, on the Lys; 6 miles N.N.W. of Bethune.—St. *Venetico*, one of the Sapienza iſlands. N. lat. 36° 50′. E. long. 21° 51′.—St. *Vettore*, a town of Naples, in the province of Bari; 3 miles S. of Andria.—St. *Vicente*, a town of Braſil, on the S. ſide of the iſland of Santos. S. lat. 24° 4′.—St. *Vicente Gutayayta*, a town of Peru, in the dioceſe of La Plata; 40 miles N.E. of Lipes.—St. *Vicenzo*, a town of Iſtria; 9 miles N. of Rovigno.—St. *Victor*, a town of the county of Montfort; 2 miles S.S.E. of Montfort.—Alſo, a town of France, in the department of the Lower Seine; 15 miles S. of Dieppe.—St. *Victurien*, a town of France, in the department of the Upper Vienne; 10 miles N.W. of Limoges.—St. *Vigilio*, a town of Italy, in the department of the Mela; 4 miles N.N.W. of Breſcia.—St. *Vincent*. See Vincent.—St. *Vinnemer*, a town of France, in the department of the Yonne, and chief place of a canton, in the diſtrict of Tonnerre. The place contains 824, and the canton 9798 inhabitants, on a territory of 302½ kiliometres, in 18 communes.—St. *Vio*, a town of Italy, in the Veroneſe; 3 miles W.N.W. of Verona.—St. *Vit*, a town of France, in the department of the Doubs; 9 miles S.W. of Beſançon.—Alſo, a town of France, in the department of the Foreſts, near the ſource of the river Uren; 25 miles S. of Aix la Chapelle. N. lat. 50° 18′. E. long. 6° 12′.—St. *Vith*, a town of France, in the department of the Ourte, and chief place of a canton, in the diſtrict of Malmedy. The place contains 644, and the canton 8430 inhabitants, on a territory of 340 kiliometres, in 8 communes.—St. *Vito*, a town of Naples, in the province of Otranto; 6 miles S.E. of Oſtuni.—Alſo, a town of Naples, in Bari; 6 miles N.N.W. of Converſano.—Alſo, a town of Sicily, in the valley of Mazara; 13 miles N.E. of Trapani.—Alſo, a town of Italy, in the Treviſan; 13 miles W. of Cereda.—St. *Vitoriano*, a town of Spain, in Aragon; 5 miles N.E. of Ainſa.—St. *Vivien*, a town of France, in the department of the Gironde, and chief place of a canton, in the diſtrict of Leſparre; 9 miles N.N.W. of it. The place contains 660, and the canton 4914 inhabitants, on a territory of 377½ kiliometres, in 9 communes.—St. *Ulrich*, a town of the duchy of Carinthia; 4 miles S. of Ebernſtein.—Alſo, a town of Stiria; 10 miles W.S.W. of Marburg.—Alſo, a town of Auſtria; 4 miles W. of Aigen.—Alſo, a town of Auſtria; 8 miles S.S.E. of Aigen.—St. *Urain*, a town of France, in the department of the Nievre; 7 miles N.E. of Coſne.—St. *Urbain*, a town of France, in the department of the Upper Marne; 3 miles S.E. of Joinville.—St. *Urcize*, a town of France, in the department of the Cantal; 21 miles S. of St. Flour.—St. *Urſitz*, *St. Urſanne*, or *Sonderſitz*, a town of France, in the department of the Upper Rhine, and chief place of a canton, in the diſtrict of Porentruy; 5 miles S. of it. The place contains 666, and the canton 2772 inhabitants, on a territory of 115 kiliometres, in 11 communes. N. lat. 47° 25′. E. long. 7° 6′.—St. *Urſula*, a town of Stiria; 8 miles W.S.W. of Marburg.—St. *Uſuge*, a town of France, in the department of the Saone and Loire; 3 miles N. of Louhans.

St. *Wendel*, a town of France, in the department of the Sarre, and chief place of a canton, in the diſtrict of Sarrebruck; 16 miles N.W. of Deux-Ponts. The place contains 1313, and the canton 5337 inhabitants, in 28 communes.—St. *Willibaldſburg*, a town and citadel of Bavaria, in the biſhopric of Aichſtatt, formerly the reſidence of the biſhops, near Aichſtatt.—St. *Wolfgang*, a town of Auſtria; 3 miles S.S.W. of Aigen.—Alſo, a town of Auſtria; one mile N. of Kirchſchlag.—Alſo, a town of Auſtria, in a lake called the “Abernſee,” or St. Wolfgang's lake; 54 miles S.S.W. of Lintz.—Alſo, a town of Switzerland, in the canton of Zug; 4 miles W. of Zug.

St. *Xavier*, a river of Canada, which runs into the Pickoouagamis, N. lat. 48° 53′. W. long. 73° 50′.—Alſo, an iſland of Canada, at the conflux of the St. Xavier and Pickoouagamis.—Alſo, a town of South America, in the province of Moxes; 180 miles N. of Santa Cruz de la Sierra la Nueva.—Alſo, a town of South America, in the audience of Quito; 30 miles S.E. of S. Joſef de Huales.—Alſo, a town of Mexico, in the province of New Biſcay; 70 miles W. of Parral.—Alſo, a town of South America, in the province of Chiquitos; 110 miles N.E. of Santa Cruz.—Alſo, a town of New Navarre; 45 miles S.S.W. of Caſa Grande.—St. *Xavier de Macaguana*, a town of South America, in the kingdom of Granada; 100 miles E. of Tunis.

St. *Yacinto*, a town of Braſil, in the Tapajos; 40 miles S. of Pauxis.—St. *Yago*, or *St. Jago*, a town of N. America, in California; 120 miles W. of Loreto. See *St.* Jago.—St. *Yreix*, or *Yriuix*, a town of France, and principal place of a diſtrict, in the department of the Upper Vienne, on the Ille; 19 miles S. of Limoges. N. lat. 45° 30′. E. long. 1° 17′.

St. *Zacharie*, a town of France, in the department of the Var; 9 miles S.W. of St. Maximin.—St. *Zeno*, a town of Italy, in the Treviſan; 10 miles E.S.E. of Ciſmone.—St. *Zibio*, a town of Italy, in the Paduan; 11 miles S.E. of Padua.

Saint David, in *Biography*, the tutelary ſaint of Wales, and firſt biſhop of the ſee of St. David's, in Pembrokeſhire. The hiſtory of this prelate is involved in great obſcurity, and very much intermixed with monkiſh legends, in which we can repoſe no confidence. He is ſtated to have been of princely extraction, and to have been the ſon, as ſome ſay, and according to others the grandſon, of Sandde ab Cedig ab Ceredig ab Cunedda, a prince of Ceredigion, or Cardigan, by Non, the daughter of Gynyr of Caer Gawch, in Pembrokeſhire. Some ſay the lady's name was Melaria, and that ſhe was one of the daughters of Brychan, a prince or regulus of Brecknockſhire, from whom that county derived its name, and whoſe reign is dated from A.D. 400 to 450. However this be, all authors agree, that ſhe was a nun, and that ſhe became a mother by the forcible violation of her chaſtity. The year of his birth is not poſitively aſcertained; Creſſy places it in the year 462; but the author of his life, in a diſſertation on the ſubject contained in the “Acta Sanctorum,” fixes it in the year 445; but others aſſign a later date. Having commenced his education, and courſe of literary fame at old Menapia, and determining to devote himſelf to a religious life, he removed to the Iſle of Wight, in order to avail himſelf of the inſtruction of Paulinus, who ſuperintended a public ſchool for the admiſſion of perſons deſigned for the clerical office. After proſecuting his ſtudies for ſome years in this place with great ardour and ſucceſs, he returned to his native country, and fixed his reſidence in a retired ſituation, called “Vallis Roſina,” the Valley of Roſes, where he founded a monaſtic inſtitution, which acquired, from the ſtrict diſcipline with which it was conducted, and the diſtinguiſhed ſanctity of its members, a celebrity that rendered it in proceſs of time an archiepiſcopal metropolis. Of this inſtitution we have in the “Acta Sanctorum” the following deſcription. The members of it, who laboured daily for the benefit of the monaſtery, “never converſed together by talking but when neceſſity required;

and each performed the labour aſſigned him, accompanied with prayers or holy meditations on divine things; and having finiſhed their country work, they returned to their monaſtery, where they ſpent the remainder of the day till the evening in reading or writing. In the evening, at the ſounding of a bell, they all left their employment, and repaired to the church, where they continued till the ſtars appeared, and then they went to their refection, eating ſparingly, and not to ſatiety. Their food was bread, with roots or herbs ſeaſoned with ſalt, and they quenched their thirſt with a mixture of water and milk. Supper being ended, they continued about three hours in watchings, prayers, and genuflexions. As long as they were in the church, none were allowed to ſlumber, or ſneeze, or eject ſpittle. After this they went to reſt, and at cock-crowing they roſe, and remained at prayer till day appeared. All their inward ſenſations and thoughts were diſcloſed to their ſuperior, and from him they demanded permiſſion in all things, even when urged by the neceſſary calls of nature." Their clothing conſiſted of the ſkins of beaſts.

When a ſynod was convened at Llandewi Brefi in Cardiganſhire, A.D. 519, according to Uſher, for reſtraining the Pelagian hereſy, David, in compliance with earneſt intreaties, repaired to it, and preached with ſuch ardour and efficacy againſt the obnoxious doctrines, that he was unanimouſly appointed archbiſhop of Caerleon, in the room of Dubricius, whoſe age and infirmities rendered it neceſſary for him to reſign. He acquieſced in the appointment, as it is ſaid, on the condition of removing the ſee to Menevia. Another ſynod was in proceſs of time convoked by David, at which the acts and decrees of the ſynod of Brefi were confirmed, and ſome new acts paſſed for the regulation of the doctrine and diſcipline of the churches. This convocation is called the Synod of Victory. St. David committed the decrees of theſe two ſynods to writing, and depoſited them in the archives of his own cathedral; and theſe, having obtained the approbation of the court of Rome, were received for many ages as an authoritative directory in all eccleſiaſtical matters. Theſe ancient documents were at a ſubſequent period deſtroyed by the barbarian invaders, who repeatedly pillaged the church, and conſigned to the fire what they found it uſeleſs to remove. The time of St. David's death, and his age at his deceaſe, are no leſs uncertain than the period of his birth. Giraldus and John of Tinemouth ſtate that he died in the year 609, at the advanced age of 147 years. Pits places his death in 544, aſſigning to him the ſame incredible age. The author of his life in the "Acta Sanctorum," agrees with this ſtatement as to the time of his death, but makes him only 97 years old, ſuggeſting that this difference of dates may be owing to their having been originally written LXXXXVII. or CXXXXVII. and the firſt numeral L being miſtaken for C. Uſher alſo concurs in fixing his death in 544, but he makes his age only 82. He was canonized by Calixtus II., who held the papal ſee from A.D. 1119 to 1124. His character is thus ſummed up by Giraldus. "He was to all a mirror and a pattern of life: he taught both by precept and example: he was an excellent preacher in words, but more excellent in works. He was a doctrine to thoſe who heard him, a model to the religious, life to the needy, defence to orphans, ſupport to widows, a father to the fatherleſs, a rule to monks, a directory to men of the world; being made all things to all men, that he might win all to God."

In conſequence of the romances of the middle ages, which created the ſeven champions of Chriſtendom, St. David was dignified with the title of the patron ſaint of Wales; but this rank is hardly known among the people of the principality, being a title diffuſed among them from England in modern times. Owen's Camb. Biog.

Although the cuſtom of wearing leeks on the firſt of March, or St. David's day, may ſeem to ſome of our readers to be a trivial ſubject, yet to thoſe who are natives of the principality, and of theſe the number is not inconſiderable, the following account may not be unacceptable, or unamuſing. We obſerve, however, that this cuſtom is ſcarcely known in Wales. Mr. Owen ſtates, that in ſome diſtricts of Wales the neighbours of a ſmall farmer, deſtitute of means for cultivating his land, appoint a day when they all attend to plough his land, or to ſerve him in ſome other way, and that at ſuch time each individual carries with him his portion of leeks, to be uſed in making pottage for the company. But this is a cuſtom which does not now ſubſiſt. Some have ſuppoſed that the practice originated with a victory obtained by Cadwallo, over the Saxons, on the firſt of March 640, when the Welſh, in order to diſtinguiſh themſelves, wore leeks in their hats. To this Shakſpeare ſeems to allude, when he makes Fluellin ſay, "the Welſhmen did good ſervice in a garden where leeks did grow." But a writer in the "Gentleman's Magazine" (vol. lvii. p. 131.) traces it to a more ancient ſource. "Scholars," he obſerves, "know that the leek, πρασον of the Greeks, by a corrupt tranſpoſition of pares-on, and porrum of the Latins, corrupted from Pur-orus, was an Egyptian deity, and conſequently the Britons, a colony of Egyptians, were worſhippers of leeks." Drayton (Polyolbion, ſong 4.) aſcribes it to the holy auſterity of St. David, whoſe retreat he places in the vale of Ewyas, on the borders of Monmouthſhire and Brecknockſhire.

"That reverent Britiſh ſaint in zealous ages paſt
To contemplation liv'd; and did ſo truly faſt,
As he did onelie drink what cryſtal Hodney yields,
And *fed upon the leeks* he gathered in the fields.
In memorie of whom, in the revolving yeere,
The Welſhmen on his day that ſacred herbe doe weare."

See Rees's Beauties of England and Wales, vol. xviii.

SAINT PATRICK, the apoſtle and tutelary ſaint of Ireland, flouriſhed in the fifth century, and if we may credit the accounts that are given of ſuch a ſaint, and of the early period of his life, his name was Succathus, and he was a native of Scotland, born A.D. 377. At the age of ſixteen years, it is ſaid, he was a ſlave, and continued ſix years in this degraded condition. He afterwards became a diſciple of St. Martin, who inducted him into the clerical office. After the unſucceſsful labours and death of Palladius, who had been ſent by Celeſtine, the Roman pontiff, into Ireland, in order to propagate the Chriſtian faith among the rude inhabitants of that iſland, the ſame pontiff employed in this miſſion Succathus, above-mentioned, and changed his name into that of Patrick. He arrived among the Iriſh A.D. 432. The ſucceſs of his miniſtry, and the number and importance of his pious exploits, ſtand upon record as undoubted proofs, not only of his reſolution and patience, but alſo of his dexterity and addreſs. Having attacked, with much greater ſucceſs than his predeceſſor, the errors and ſuperſtitions of that uncivilized people, and converted great numbers of them to the Chriſtian religion, he founded, in the year 472, the archbiſhopric of Armagh, which has ever ſince remained the metropolitan ſee of the Iriſh nation. Others ſay, that after having laboured in effecting the purpoſe of his miſſion for ſixty years, he died in the year 460. Hence this famous miſſionary, though he was not the firſt who communicated to the Iriſh the light of the goſpel, has nevertheleſs been juſtly entitled "the Apoſtle of the Iriſh," and the father of the Hibernian church: and is ſtill generally acknowledged and revered in that honourable character. The venerable Bede has written his life in two books: and Jac. Waræus, whoſe "Hibernia Sacra" was printed in folio at Dublin in 1717, publiſhed at London in 1656, in 8vo. "The Works of St. Patrick." The ſynods that were holden by this eminent miſſionary are to be found in Wilkins's Concilia Magnæ Brit. et Hibernia, tom i. p. 2. See the Acta Sanctorum, tom. ii. Martii, p. 517. tom. iii. Februar. p. 131. 179. Moſheim's Eccl. Hiſt. vol. ii.

Saint Evremond, a man of letters, was born in Normandy in the year 1633. He ſtudied the law at Paris, but quitted that purſuit to enter into the army, and ſerved, though young, at the ſiege of Arras in 1640. He was taken under the patronage of the prince of Condé, who made him lieutenant of his guards, and he fought under him at Friburg and Nordlingen, at the latter of which places he met with a very ſevere wound. Having loſt the favour of the prince by ſome raillery which he diſplayed, he was deprived of his commiſſion. He afterwards ſerved in Catalonia, where he was made marèchal de camp: here he could not entirely reſtrain his propenſity for ſarcaſm, and the diſplay of his wit drew down upon him the diſpleaſure of cardinal Mazarin, and alſo coſt him three months' impriſonment in the Baſtille. In the war of the Fronde he attached himſelf to the royal party, and obtained promotion and a conſiderable penſion. A letter which he took the liberty of writing to marſhal Crequi, in which he cenſured the peace of the Pyrenées, embroiled him with the exiſting miniſtry, and an order was iſſued for committing him again to the Baſtille; but being apprized of the fact he eſcaped to England, where he ſpent the remainder of his life. He was well received at the court of Charles II., and paſſed a long epicurean kind of life, enjoying the pleaſures of ſociety, and the table, to which he was extremely addicted. He died in 1703, at the age of 80, and was interred in Weſtminſter Abbey, in which a monument was erected to his memory. He was the author of a variety of works, which a century ago were much read. His proſe writings are political, philoſophical, and miſcellaneous, which, without much depth and erudition, diſplay good ſenſe and penetration. His comedies and poems are inſipid, and would ſcarcely have been noticed, had they not been handed about in manuſcript among perſons of faſhion. His works were collected and publiſhed in London, in three vols. 4to. 1705, and at Paris in ten vols. 12mo. 1740; and again in 12 vols. 12mo. 1753.

Saint-Foix, Germain-François-Poulain de, a French dramatic writer, was born at Rennes in 1698: he was brought up to the military ſervice, and entered early into the Mouſquetaires, whence he removed to the cavalry. He had, however, previouſly to this imbibed a taſte for letters, and eſpecially for the theatre; and while yet a mere youth he compoſed two or three light pieces, which were repreſented with ſucceſs. When war with the emperor broke out in 1733, Saint-Foix went with his regiment to Italy, where he was aid-de-camp to marſhal Broglio. Although he acquitted himſelf with great reputation, yet he could not obtain a troop in the cavalry, which he ſolicited, and accordingly he quitted the army in diſguſt, and purchaſed the poſt of maſter of the waters and foreſts, which he retained from 1736 to 1740, when he finally fixed his reſidence in the capital. Here he became involved in many quarrels, which terminated in duels. Though impatient of contradiction, he was upright and generous, and a modeſt eſtimator of his own talents. The petulance of his temper ſcarcely appeared in his writings, which are in general elegant, delicate, and agreeable. From 1740 to 1761 he produced twenty comedies, which were all ſucceſsful on the ſtage. They are natural and eaſy, but without much ſtrength or variety. Among his other writings were "Lettres Turques," a ſort of imitation of Monteſquieu's Perſian Letters: "Eſſais Hiſtorique ſur Paris," an amuſing mixture of manners and antiquities: and "Hiſtoire de l'Ordre du Saint-Eſprit," conſiſting of biographical anecdotes of the knights of the order. This laſt work he compoſed in the quality of hiſtoriographer of the royal orders. He died at Paris in 1776.

Saint-Gelais, Octavian de, an early French writer, was born of a noble family at Cognac in 1466. He ſtudied at Paris, and entered into the eccleſiaſtical order, but devoted himſelf more to poetry and gallantry than to the duties of his profeſſion. Through the favour of king Charles VIII. he was nominated by the pope Alexander VI. to the biſhopric of Angouleme in 1494, and in 1497 he went to reſide at his dioceſe, where he died in 1502. He left behind him many works in verſe and proſe, of which the moſt valuable were French tranſlations of the Æneid and Ovid's Epiſtles. "It is," ſays one of his biographers, "a remarkable trait of the times, that his full title, as the reverend father in God, biſhop of Angouleme, is prefixed to ſome of his amorous publications."

Saint-Gelais, Merlin de, a French poet, ſaid to have been a natural ſon of the preceding, was born in 1491. He ſtudied at Poictiers and Padua, and obtained ſo much reputation by his Latin verſes, that he was called the French Ovid. He was favoured and promoted to eccleſiaſtical rank by Francis I. and Henry II. He died at Paris in 1559. Saint-Gelais was the firſt perſon who introduced the ſonnet into French poetry, from the Italian; from which language he tranſlated the tragedy of Sophoniſba. He excelled in epigram, and was ſo much given to raillery, that it became a proverbial ſaying, "Beware of the pincers of Saint-Gelais." His poems have been popular in France; the laſt edition was probably that of 1719.

Saint-John, Henry, lord viſcount Bolingbroke, a nobleman of great celebrity, as well in the literary as the political world, was born in 1672, at Batterſea, in Surrey. His father was ſir Henry St.-John, and his mother was a daughter and co-heireſs of Robert Rich, earl of Warwick. His education was chiefly under the direction of his grandfather and grand-mother, of whom the latter was daughter of St.-John, chief juſtice under Cromwell, and was attached to the Preſbyterian ſect; but the impreſſion he received from that circumſtance was a rooted averſion to a party whoſe auſterity was very ill adapted to his diſpoſition. At a proper age he was ſent to Eton ſchool, and thence to Chriſt-church college, in Oxford; and at both theſe ſeminaries of learning he gave indications of extraordinary talents, but he was ſtill more diſtinguiſhed for his love of pleaſure. It is however ſaid, that there was no period in which he did not devote ſome hours to the acquiſition of knowledge and the cultivation of literature. He became the friend and protector of Dryden in his declining years; and prefixed a copy of encomiaſtic verſes to his tranſlation of Virgil in 1697.

It was about this period that Mr. St.-John married the daughter and co-heireſs of ſir Henry Wincheſcomb of Berkſhire, and in 1700 he became a member of the houſe of commons, as repreſentative for Wootton-Baſſet. He joined the Tory party, and attached himſelf to Harley, afterwards earl of Oxford, who in this parliament was choſen ſpeaker. In 1704, Mr. St.-John was made ſecretary at war, which office he held during the greater part of the duke of Marlborough's brilliant career. When Harley was deprived of the ſeals in 1707, his friend St.-John reſigned his poſt; and upon the reſtoration of the former to power, three years after, the latter was appointed ſecretary of ſtate. It was about this period he wrote a letter in the periodical paper entitled the "Examiner," which gained him great fame as a party writer among the Tories. He ſat in the new parliament as repreſentative for the county of Berks, and on him devolved the burden of negociating and juſtifying the treaty of Utrecht. In 1712 he was, as a reward for his great ſervices, created baron St.-John and viſcount Bolingbroke: but he conſidered his promotion rather as a puniſhment than an honour, as he found himſelf, in the houſe of peers, almoſt alone to defend the treaties that had been made. At this period he began to be diſcontented, on account of his holding a ſubaltern ſituation under Harley, and animoſities ſoon broke out between theſe ſtateſmen, which ended in their total ſeparation. Soon after the acceſſion of George I., the ſeals of office were taken from Mr. St.-John, and at the ſame time his papers were ſeized. Conceiving that theſe violent meaſures were but a prelude to an impeachment, he withdrew privately to France in March 1715. Here, in a ſhort time, but not on the firſt application, he accepted the ſeals of ſecretary of ſtate to the Pretender. In this act we ſee the principles of reſentment and diſappointed ambition operating upon his mind, for he could not have any prejudices in favour of the Stuarts, and he had formerly promoted the ſucceſſion of the houſe of Hanover. A bill of attainder againſt him ſoon followed, founded upon ſix articles of impeachment ſent up from the houſe of commons, chiefly relative to his conduct in the treaty of Utrecht. He had already found reaſon to repent of his new engagement, ſince nothing could be worſe planned, or more weakly conducted, than the attempt to reſtore the exiled family. The return of the Pretender to Scotland was ſoon followed by the diſcharge of lord Bolingbroke from his poſt of ſecretary, and that by articles of impeachment; ſo that he had the ſingular fortune of having been in the ſame office under a real and mock ſovereign, and having been diſmiſſed in both inſtances with the ſame tokens of diſpleaſure.

He now felt an earneſt deſire to return to England, and through the mediation of the earl of Stair, the Engliſh ambaſſador at Paris, he obtained a promiſe of pardon under certain conditions. During this alienation from his country he wrote "Reflections upon Exile," in which he endeavoured to ſuggeſt topics of conſolation to himſelf, on the ground of unmerited ſufferings. Having become a widower, he married for a ſecond wife the marchioneſs de Villette, a niece of Madame Maintenon, a lady of very ſuperior merit, with whom he enjoyed every domeſtic ſatisfaction. He remained in France till 1723, when, having obtained his majeſty's pardon, he returned to England. Two years afterwards an act of parliament reſtored him to his family inheritance, which he had forfeited by his attainder, and he then purchaſed an eſtate at Dawley, near Uxbridge, where he occupied himſelf in rural cares and amuſements; and where, for a time at leaſt, he thought he had abandoned the cares and pleaſures of ambition. "I am," ſays he, in a letter to Swift, "in my farm, and here I ſhoot ſtrong and tenacious roots. I have caught hold of the earth, and neither my enemies nor my friends will find it eaſy to tranſplant me." There was, however, one thing which rankled in his breaſt—he had not been able to procure a reſtoration to his ſeat in the houſe of lords; and conceiving the miniſter, Walpole, to have been the cauſe of this mortification, he, diſdaining all obligations to him, entered into an active oppoſition as a writer, which he continued for ten years, after which he withdrew a ſecond time to France. Here he now devoted himſelf to literature, and drew up "Letters on the Study and Uſe of Hiſtory;" "A Letter on the true Uſe of Retirement and Study," &c. In theory, theſe pieces, which have been, and ſtill are, much read, lord Bolingbroke ſhews himſelf a true philoſopher, notwithſtanding the practical derelictions of which he may have been guilty. In the concluſion of his Reflections on Exile, he ſays, "the beſt reſolution we can take is to ſuffer what we cannot alter; and to purſue, without repining, the road which Providence, who directs every thing, has marked out to us: for it is not enough to follow; and he is but a bad ſoldier who ſighs, and marches on with reluctancy. We muſt receive our orders with ſpirit and cheerfulneſs, and not endeavour to ſlink out of the poſt which is aſſigned us in this beautiful diſpoſition of things, whereof even our ſufferings make a neceſſary part. Reſignation to the will of God is true magnanimity; but the ſure mark of a puſillanimous and baſe ſpirit, is to ſtruggle againſt, and cenſure the order of Providence, and inſtead of mending our own conduct, to ſet up correcting that of our Maker." His father, who had been created viſcount Saint-John during the exile of his ſon, dying in 1742, he returned and ſettled at the family ſeat at Batterſea, where he paſſed the remainder of his life in dignified retirement, ſtill occupied with undiminiſhed ardour, in what he thought uſeful inſtructions to his countrymen and mankind. The laſt work which he publiſhed was entitled "Letters on the Spirit of Patriotiſm, and the Idea of a Patriot King." This was publiſhed in 1749, at which period the proſpect of the ſucceſſion of a prince, indebted to no party for his crown, ſeemed to him a proper opportunity to inculcate the leſſon of governing upon patriotic principles. He died in 1751, at the age of 79, leaving no iſſue, and was interred in Batterſea church.

The political character of lord Bolingbroke is ſufficiently ſet forth by the hiſtory of his life. "It was," ſays his biographer, "that of a confident and ambitious man, who could ill brook a ſuperior, and was little ſcrupulous in the purſuit of power, or the gratification of reſentment. As a conſpicuous figure in the literary annals of his time, he demands a more particular conſideration. It is agreed, that among the proſe writers of his age, indeed of any age of Engliſh literature, ſcarcely any one can be found who has united more excellencies of ſtyle; his elegance, perſpicuity, and ſtrength, being accompanied with that graceful eaſe, which is rarely to be met with in thoſe who have not been converſant with buſineſs and the world." In his correſpondence with Swift and Pope, he is diſtinguiſhed by a poliſhed freedom and air of good company, which conſtitute the perfection of epiſtolary writing. According to lord Cheſterfield, whatever ſubject he either ſpeaks or writes upon he adorns with the moſt ſplendid eloquence, not ſtudied but a flowing happineſs of diction, which is become ſo habitual to him, that even his moſt familiar converſation would bear the preſs without the leaſt correction, as to method or ſtyle. His letters on hiſtory and patriotiſm are, in the opinion of ſome critics, rather ſuperficial and declamatory than ſolid and profound. As a philoſophical moraliſt his ſentiments are diſplayed with great brilliancy in Pope's *Eſſay on Man*, of which celebrated poem the plan and deſign are avowedly his; and ſome of the fineſt illuſtrations, which are moſt admired in their poetical dreſs, have been found ſketched by him in proſe. To Pope he was, indeed, for many years, "the guide, philoſopher, and friend," the object of his higheſt admiration, and warmeſt attachment. Lord Bolingbroke was more directly exhibited to the public, in the characters of an ethical and theological writer, in his poſthumous works, which were publiſhed with his other works by Mallet, in five vols. 4to. Of theſe volumes, a large ſhare is occupied by "Letters or Eſſays addreſſed to Alexander Pope, eſq. on

Religion and Philoſophy." In them he appeared as the declared enemy of divine revelation, but his reaſonings on this ſubject are ſhallow, and futile: he has been generally admitted to have entered on this controverſy with more eagerneſs and confidence, than his learning or even his reading could warrant. "Although in his cenſures of the abuſe of authority in matters of religion and philoſophy, and his expoſures of eccleſiaſtical frauds and uſurpations, he ſpeaks the ſentiments of many rational friends of revelation; the arrogance of his tone, and the unmeaſured reproaches which he caſts upon divines of all denominations, cannot but offend every candid reader." His attacks on revelation were viewed in ſo formal a light, that the grand jury of Weſtminſter made a formal preſentment of them, as tending to the ſubverſion of all religion, government, and morality. But they met with a more effectual and appropriate refutation, than that which could come from the arm of the civil power, from the pens of ſome of the moſt able advocates of the Chriſtian religion, and their effects on public opinion have been much leſs than either the friends or the enemies of revealed religion anticipated. Biog. Brit.

SAINT-PAVIN, DENIS SANGUIN DE, a French poet, who flouriſhed in the ſeventeenth century, born at Paris, was the ſon of a preſident of inqueſts, and a reſpectable magiſtrate of the city. Having a ſort of bias and attachment to polite literature, he declined engaging in any active profeſſion, and entered the church for the purpoſe of taking the abbacy of Livry, where he paſſed his time in a mixture of voluptuous and lettered retirement. He was the advocate of the Epicurean ſyſtem of philoſophy, which he explained ſo as to juſtify his own practice, and the maxims of which he gave to the public in various poems, written in a light and eaſy manner, and poſſeſſing much merit in that kind of compoſition. His character was ſo well underſtood and truly eſtimated by his contemporaries, that Boileau, enumerating things impoſſible, gives as an inſtance Saint-Pavin becoming a bigot. This implied attack upon his faith, however, he took ſo ill, that he repaid it by a ſevere epigram on the ſatyriſt. Boileau retaliated, and Saint-Pavin has been conſigned to poſterity in his works, with a contempt which, as a literary character, he did not deſerve. His poems, conſiſting of ſonnets, epigrams, rondeaus, and epiſtles, have been ſeveral times reprinted. They have alſo been printed with thoſe of Charleval, in one vol. 12mo. 1759. He died at an advanced age in 1670. In the view of approaching diſſolution he ſought for abſolution, which the prieſt refuſed to afford till he had thrown his will into the fire, and left all his remaining property to pious uſes.

SAINT-PIERRE, CHARLES IRENÉE CASTEL DE, was born in 1658, of a noble family, at Saint-Pierre in Normandy. He ſtudied at the college of Caen, where he came intimately acquainted with Varignon the mathematician, whom he took to Paris. He was brought up to the church, and obtained ſome preferment; but he was moderate in his expectations, and ſcorned to flatter the great to promote his advancement in life: his great paſſion was to inſtruct and improve mankind by his writings. Theſe were uſeful, but deſtitute of eloquence; nevertheleſs, his obſervations on phiſophical grammar opened to him the doors of the French academy, into which he was admitted in 1695. He acquired ſo profound a knowledge in the politics of the age, that the cardinal Polignac took him to aſſiſt in the conferences for the peace of Utrecht. This was to Saint-Pierre a moſt pleaſant employment, for he was, as every true Chriſtian and friend to mankind muſt be, the determined, and as far as the *powers that be* will allow him, the eager enemy of war; and one of Saint-Pierre's favourite projects was the eſtabliſhment of a kind of European diet, which he hoped might enſure a perpetual peace. This plan he ſent to cardinal Fleury, who, though a pacific miniſter, was ſufficiently aware of its practical difficulties, and pleaſantly told the author that he had forgotten one preliminary article, which was the delegation of a company of miſſionaries to diſpoſe the hearts of the princes of Europe to ſubmit to ſuch a diet. Saint-Pierre died in the year 1743, at the age of 85, eſteemed by all whoſe regards are of any worth; but even after his death he was thought an object of courtly and eccleſiaſtical rancour. The biſhop of Mirepoix, preceptor to the young princes, obtained a prohibition, addreſſed to his ſucceſſor, forbidding the academy from paying the uſual tribute of praiſe to a deceaſed member. Saint-Pierre, it will be readily admitted, was a projector; but his ſchemes were turned to the promotion of the public good, though ſometimes the inſtances were rather whimſical. In all his works he ſhewed himſelf a foe to tyranny, intolerance, and oppreſſion of every kind; and at the ſame time he pleaded the cauſe of the people, with an energy and freedom that are highly honourable to his heart. He foreſaw the dangers neceſſarily attendant upon the ſplendid profuſions and brilliant conqueſts of Louis XIV., and dared courageouſly to expoſe them; and after the death of that monarch he publiſhed a work, in which he ſpoke ſo freely of his character and conduct, that the French academy excluded the author from his ſeat among them, Fontenelle alone giving a vote in his favour. In private life, he was highly reſpectable, modeſt, unaſſuming, perfectly upright, and philanthropical in the beſt ſenſe of the word. He even introduced into the French language the term *bienfaiſance*, and his life was ſpent in practiſing its duties. He adopted ſeveral orphans, whom he educated to uſeful trades, rightly judging that in the progreſſive improvement of mankind, every thing which had not utility for its baſis would be neglected. His works were numerous, but they are now nearly forgotten. One of the moſt important was a "Memorial on the Eſtabliſhment of a proportional Taille," which is ſaid to have greatly contributed to alleviate the tyranny of arbitrary taxation in France.

SAINT-REAL, CÆSAR VICHARD DE, a miſcellaneous French writer, who flouriſhed in the ſeventeenth century, was the ſon of a counſellor of the ſenate at Chamberry. He came at an early age to Paris, where he was well received. He lived for a time with the hiſtorian Varillas, who accuſed him of ſecreting ſome of his papers. In 1675 he went again to Chamberry, where he attached himſelf to the ducheſs of Mazarin, whom he accompanied to England. Upon his return to his own country he went to Paris, and paſſed many years as a man of letters, under the character of an abbé, without any particular title or benefice. He died at Chamberry in 1692. His works involved him in many literary diſputes; he was extremely ſenſible to criticiſm, and was violent in controverſy. But in other reſpects he was an eſtimable character. As a writer, the abbé Saint-Real had a lively imagination, and a variety of knowledge. The beſt known of his works are his "Hiſtories of the Conſpiracies of Venice, and of Don Carlos, Son of Phillip II." both of them intereſting pieces. The firſt has been made the ground-work of Otway's "Venice preſerved." The beſt edition of the works of Saint-Real is that of the abbé Perau, in eight vols. 12mo. 1757.

SAINT-SIMON, LOUIS DE ROVROI, duke of, a French nobleman, the ſon of a duke of the ſame title, was born in 1675. He entered the army while he was very young, and ſaw a good deal of ſervice between 1692 and 1697, but he was better adapted to civil employment, and was appointed, in 1721, ambaſſador extraordinary to the court of Spain, for the purpoſe of ſoliciting the Infanta in marriage for Louis XV. He was confidential adviſer to the regent duke of Orleans, who is ſaid to have benefited very much by his counſels, when he had reſolution to follow them. Wearied, probably, with the routine of a court, he retired to his eſtate, where he maintained the character of an auſtere religioniſt; and ſo completely did he ſeparate himſelf from the world, that he was almoſt forgotten before he died. Having ſeen much of the ſociety and manners of a court during the reign of Louis XIV. and the regency, he had imbibed a very bad opinion of mankind. He was, however, a man of ſtrict honour and integrity, and when in active life never failed to ſpeak his mind freely. He compoſed "Memoirs of the Reign of Louis XIV. and the Regency," which have been publiſhed ſince his death. They are ſaid to conſiſt of a variety of anecdotes, interſperſed with portraits drawn with a ſtrong but dark pencil, and to make a valuable addition to the ſecret hiſtory and biography of thoſe times. His ſtyle poſſeſſes much energy, but it is incorrect, and often obſcure. The moſt complete edition was printed at Straſburg, in thirteen vols. 8vo. 1791.

Saint-Aulaire, Francis-Joseph de Beaufoil de, marquis de, a French writer of celebrity, was born at Limouſin, and bore arms in his youth, but afterwards, being eaſy in his circumſtances, he quitted that profeſſion, and devoted himſelf to literary purſuits. He is moſt known as an author by his poetry, which is written in imitation of Anacreon. He was admitted a member of the French academy in the year 1706, and died at Paris in 1742, at the great age of 98.

Saint-Germain, Robert, count de, was born in Franche-Compte in the year 1708. He was educated among the Jeſuits, but upon his leaving their ſeminary he entered into the military ſervice of his country, and became diſtinguiſhed in the wars of 1741 and 1757. At length, diſguſted with the treatment which he received from his ſuperiors, he entered into the Daniſh ſervice, and was made a field-marſhal. Having loſt the greater part of his property by the bankruptcy of a houſe at Hamburgh, he retired to a ſmall eſtate in Alſace, but after the acceſſion of Lewis XVI. he was drawn again into public life, and was made miniſter of war. He died in 1778, having juſt finiſhed "Memoirs of himſelf," which were printed in the following year.

Saint-Lambert, Charles Francis de, was born at Nancy in 1717, and became diſtinguiſhed in the republic of letters: he was admitted a member of the French academy, and afterwards of the National Inſtitute. He died in 1802. His principal works are, "The Feats of Love," a comedy; "Eſſay on Luxury;" "The four Parts of the Day;" "The Seaſons," which, it is ſaid, Voltaire preferred to the works of Thomſon, on the ſame ſubject; and "Oriental Tales."

Saint George, M. de, a Greek gentleman, who may have been ſaid to be *centum puer artium;* as he ſeemed poſſeſſed of more talents than any individual of our acquaintance. No one, perhaps, was more ſkilled and dextrous in all bodily exerciſes, particularly fencing. As a dilettante muſician, he was long at the head of the Concert des Amateurs at Paris, where he uſed to lead, and poſſeſſed on the violin a hand, knowledge, and experience, beyond that of many eminent profeſſors. To all theſe talents M. de St. George united the uncommon merits of good humour, and modeſty concerning his own talents. He compoſed trios, ſymphonies, and concertos, that did him great honour as a contrappuntiſt. His comic opera of "Erneſtine" was performed at the Theatre Italien at Paris in 1777, and much admired for the many beautiful movements with which it was enriched. In 1778, "La Chaſſe," and in 1787, "La Fille Garçon." In 1786, ſix violin quartets, his Op. XIV.; and laſtly, twelve violin concertos.

This accompliſhed gentleman, who viſited England in the year 1780, and was much admired and careſſed for his talents and character by the firſt people in the kingdom for rank, talents, and good breeding, was unhappily involved in the horrors of revolution, and guillotined at Lille in 1794.

Saint Andrew, *Knights of.* See Andrew.

Saint Anne, *Order of.* See *St.* Anne.

Saint Patrick, *Order of.* See *St.* Patrick.

Saint Cuthbert's *Beads*, an Engliſh name for the trochitæ and entrochi, found in great abundance in the clay of Yorkſhire, and ſome other counties with us. They are truly the remains of parts of the arms of the *ſtella arboreſcens*, or branching ſtar-fiſh; but have been ſo far miſtaken by authors, as to be ſuppoſed a ſort of rock-plants, or the parts of ſome unknown vegetable petrified.

Saint *Andrew's Croſs*, in *Botany*. See Ascyrum.

Saint *Barnaby's Thiſtle*. See Centaurea.

Saint *John's Bread*. See Ceratonia.

Saint *John's Wort*. See Hypericum.

Saint *Peter's Wort*. See Hypericum.

SAINTARA, in *Geography*, a town of Thibet; 58 miles N.N.E. of Oramtchi Hotun.

SAINTE Marthe, Gaucher de, or Scevole, in *Biography*, was born in 1536 at Poitou, of a family diſtinguiſhed for its talents, a conſiderable ſhare of which he inherited. From early youth he cultivated literature with great ſucceſs, became a perfect maſter of the learned languages, and exerciſed himſelf in poetry and oratory. He ſoon ſhewed that he was not leſs qualified for buſineſs than for ſtudy, and was occupied in ſeveral important duties and high offices under Henry III. and Henry IV.; which have been thus enumerated: his courage and loyalty were conſpicuous at the aſſembly of the States at Blois in 1588: he was intendant of the finances in the army of Brittany in 1593; and in 1594 he brought Poitou to ſubmit to the authority of Henry IV., whoſe intereſts he alſo defended with vigour in the aſſembly of the Notables at Rouen in 1597. He was preſident and treaſurer of France in the generality of Poitou; and after a life honourably ſpent in the ſervice of his country and of letters, he died in 1623, at the great age of 87, having obtained the epithet of "father of his native city," which he had ſaved from ruin in the civil wars. As an author, the chief works of Scevole de Sainte Marthe are a collection of eulogies, entitled "Gallorum doctrina illuſtrium qui ſua patrumque memoria floruere, Elogia:" and Latin poems, conſiſting of "Pœdotrophia, ſeu de Puerorum Educatione," a didactic poem in three books, lyrics, elegies, epigrams, &c. He had a ſon Abel, who was alſo a Latin poet, and his compoſitions are joined to thoſe of his father in a collection printed at Paris in 4to. in 1632. He had likewiſe two other ſons, twins, named Gaucher, and Louis de, who were remarkable for their great reſemblance to one another in body, mind, and ſtudies. Both were king's counſellors, and royal hiſtoriographers; and they wrote in concert works which have rendered their names worthy a place in the annals of literature. Theſe are "L'Hiſtoire Genealogique de la Maiſon de France," 2 vols. fol. 1628 and 1647: "Gallia Chriſtiana," being a hiſtory of the Gallican church, publiſhed in 1666, 4 vols. fol.: "L'Hiſtoire Genealogique de la Maiſon de Beavau." Gaucher was lord of Mere-ſur-

Indre; he died at Paris in 1640. Louis died in 1656. They were both interred in one tomb.

Sainte Aldegonde, Philip de Marnix, lord du Mont, a ſtateſman, was born at Bruſſels in 1588. The cruelties of the Spaniards in the Low Countries led him to retire to Heidelberg, where he became a member of the eccleſiaſtical council. In 1572 he returned to his own country, and was deputed by the States to go to England to ſolicit aid from queen Elizabeth. He afterwards went to France for the ſame purpoſe, and to offer the ſovereignty of Flanders to the duke d'Alençon, whom he accompanied to England. As an author he is known by a work entitled "Alvearium Romanum," which is a ſatire on the church of Rome. He died at Leyden in 1598.

Sainte Palaye, Jean-Baptiste de la Curne de, was born at Auxerre in 1697. Of his early life we have no account, but as he advanced in years, he devoted himſelf to reſearches into the language and antiquities of his country. On account of his labours in this department of literature, he was admitted a member of the French academy, and that of Inſcriptions. In all his labours he was aſſiſted by a twin brother, who lived with him, and was his inſeparable aſſociate in his ſtudies and even in his amuſements. Sainte Palaye died in 1781. He is chiefly known as an author by "Memoires ſur l'Ancienne Chevalerie," 3 vols. 12mo.; in which he paints in very lively colours the manners and cuſtoms of that inſtitution. After his deceaſe the abbè Millot drew up, from his papers, "L'Hiſtoire des Troubadours," in 3 vols. 12mo.

Sainte *Maria Horrebecke*, in *Geography*, a town of France, in the department of the Scheldt, and chief place of a canton, in the diſtrict of Audenaerde. The place contains 1505, and the canton 14,965 inhabitants, on a territory of 65 kiliometres, in 21 communes.

SAINTERY, a town of France, in the department of the Channel; 4 miles S.W. of Carentan.

SAINTES, a town of France, principal place of a diſtrict, and capital of the department of the Lower Charente, ſeated on the Loire, and having a harbour for ſmall veſſels: before the revolution the capital of Saintonge, and the ſee of a biſhop; 16 poſts N. of Bourdeaux. It is watered by the rivers Boutonne and Charente, by which it is divided into two parts: the firſt part contains 5105, and its canton 10,899 inhabitants, on a territory of 107½ kiliometres, in 7 communes; the ſecond part contains 5057, and its canton 13,013 inhabitants, on a territory of 185 kiliometres, in 13 communes. The town is indifferently built, at the foot and on the declivity of an eminence. Here are ſome remains of a Roman bridge, a triumphal arch, an amphitheatre, an aqueduct, &c. In its ſuburb is a rich Benedictine abbey, founded A.D. 1049. N. lat. 45° 45′. W. long. 0° 23′.

Saintes. See Xaintes.

SAINTFIELD, a poſt-town of Ireland, in the county of Down, which has a ſmall barrack for cavalry, a church, a Preſbyterian meeting-houſe, and monthly fairs. It is ſaid to be a ſmall neat town; 78 miles N.E. from Dublin, and nearly 10 miles S.S.E. from Belfaſt.

SAINTFOIN, or Sainfoin, in *Botany*. See Hedysarum.

Saintfoin, in *Agriculture*, a ſpecies of plant of the artificial graſs kind, frequently made uſe of for the food of cattle, either freſh or when dried: it is ſometimes called holy-hay, or wholeſome hay, from its excellent nutritive quality. It riſes in the ſtem from one to two feet in height, and has tufts of red flowers of three, four, or five inches in length. It was originally brought into this kingdom from France, or the Low Countries. See Hedysarum.

This is a kind of plant which, though it has been leſs attended to than that of clover, is not by any means leſs beneficial to the farmer. It is, in fact, with the great advantage of being more durable on the poorer, thinner, and more light ſorts of ſoil, eſpecially thoſe of a calcareous nature, what the clover is upon thoſe of the more ſtrong, deep, and heavy deſcriptions. And in addition to theſe advantages, it poſſeſſes thoſe of being equally ſuited to the uſe of paſturage, as that of being made into hay, while in the former application it is aſſerted not to have the injurious quality of *hoving* the animals that feed upon it, as is frequently the caſe with the red or broad clover. Beſides, its laſting or abiding qualities on ſoils of the poor, thin, infertile ſorts, in elevated expoſed ſituations, where other graſs herbage can ſcarcely at all, or with very great difficulty, be provided, render it of vaſt utility in furniſhing food for different ſorts of live-ſtock, but particularly that of ſheep. The value of this plant is indeed ſo great, that in ſome parts of the iſland the farmers could not pay their rents, if it were not for the growth of it. It is ſuppoſed by Mr. Young, that upon ſoils proper for this graſs no farmer can ſow too much of it, as no other application of the land will pay him nearly ſo well. It is contended, that on poor ſoils not worth more than from 2*s.* 6*d.* to 5*s.* the acre, a ton and a half, and even two tons and a half, of hay, or a ton at leaſt, may be afforded at one mowing, beſides a conſiderable after-graſs: and that the uſe of hay is become now ſo general, that ſuch products can never want a market. Such management on ſuch lands muſt conſequently always render them beneficial to their cultivators. It is added, that the products and profit of ſuch land in tillage or ſheep huſbandry are very inconſiderable to what they afford under the culture of this plant.

In diſtricts where natural meadows and paſtures are ſcarce, the culture of this plant is alſo an object of great importance to the farmer in the view of hay, and ſhould of courſe be more particularly attended to.

This plant will make a much greater increaſe in poor ground than any of the natural graſſes, which is principally owing to its having a long perpendicular root of the tap-kind, which ſinks to a great depth to attract its nouriſhment and ſupport. The length of the root is very conſiderable, in many caſes extending itſelf to ſeveral feet.

But it has been a general opinion among farmers, that this plant never ſucceeds well in any land where there is not an under-ſtratum of ſtone, or chalk, or ſome other hard material, to ſtop its running down, as otherwiſe it is apt to ſpend itſelf in root, and come to nothing in the top. This is, however, an evident error, as the more and the larger the roots planted are, the more nouriſhment they receive, and the better they thrive. Indeed, it is found that this plant always ſucceeds beſt where its roots run deep, and that the beſt crops of all are produced upon lands where there is no hard under-ſoil to obſtruct their paſſage. An under-ſoil of clay may however kill the plants, by retaining the moiſture, and thereby chilling or rotting their roots. The long downward root of this plant has alſo near the ſurface many horizontal roots iſſuing from it, which extend themſelves every way; and there are others of the ſame kind ſent off all the way down, as the root deſcends, but they grow ſhorter and ſhorter as it paſſes.

And it has been proved, that any dry ſort of ſoil may be made to produce this valuable and uſeful plant, though it be ever ſo poor; but ſtill that the richeſt and beſt land will produce the beſt crops of it. But Mr. Kent thinks, that the ſoils moſt ſuited to the culture of this ſort of graſs are thoſe of the chalky loam, and light ſandy or gravelly kinds, or almoſt any of thoſe of a mixed quality, provided they be not too wet, and have a rocky or hard calcareous bottom to check the roots at the depth of a foot or fifteen inches below the ſurface, which he, notwithſtanding the above, conceives neceſſary, as the plants are apt to exhauſt themſelves in running down. And for this reaſon, he conſiders it as improper for being ſown where there is a great depth of mould or ſoil. It is a plant, that is aſſerted by Mr. Marſhall to afford a large produce, even on thoſe ſoils which are of the pooreſt quality, and that on ſuch as are of a more rich and friable nature, it frequently produces abundant crops. Still he conceives, that it is only in the calcareous ſoils, as the dry chalk and lime-ſtone, or ſuch as have been well impregnated with that ſort of matter, that it ſucceeds in a perfect manner, or becomes durable.

In Kent this ſort of crop is much grown on the chalky lands in the eaſtern parts of the diſtrict, where it ſucceeds well. It is ſown alſo very extenſively in ſome parts of Eſſex on a red ſand upon a ſandy bottom, without any chalk underneath it, and continues in ſuch for nearly twenty years; as well as in other parts upon land which has this ſort of under-ſoil. In Oxfordſhire, where this graſs is cultivated to a very great extent, it is grown on all ſorts of land proper for it, but it is ſuppoſed by ſome to be the moſt profitable on thoſe which are poor and thin, as the ſtone-braſh kind, tillage being thought more beneficial on the gravelly loams; and though it might be conceived to ſucceed well on the dry hard gravels with a red ſandy ſurface in ſome places, it has been found not to anſwer well on them. Nor does it turn out well upon the new grubbed wood-lands, the ſoil being left in too light, open, and hollow a ſtate, and it is queried whether beech being as natural to chalk hills as this plant, they may not rob each other. Neither does freſh cleared furze-land do well for it, though on ſtone-braſh, for the ſame reaſon; beſides, a bad white graſs is ſure in ſuch caſes to thicken and greatly injure it. In ſeveral trials with it about Chipping Norton, it was found not to ſucceed well on old heath land, on which furze had been the ſpontaneous growth; as it preſently went off and was loſt: but in ſome other places in the ſame vicinity, on other ſorts of land, it is laſting. In Berkſhire, it is found to thrive beſt in a chalky and rubbly ſtone land, with a hard and compact ſub-ſtratum, but it is cultivated on very different ſoils and ſituations with ſucceſs. And the chalk hills of Suſſex are ſaid to contain many thouſands of acres of land, upon which no other plant has ever yet been diſcovered to thrive to ſuch advantage as this, nor any which ever promiſed more fair hopes of ſucceſs to the induſtrious farmer for the expence of cultivating it. It therefore evidently admits of ſome variety in the ſoils in which it is capable of being grown.

Culture.—With reſpect to the tillage or preparation of the ground which is requiſite, it cannot be made too clean or too fine before the ſeed is ſown; of courſe it generally ſucceeds beſt after turnips or other ſimilar crops, which require a fine clean culture while they are growing. It often, however, anſwers well on lands that have not undergone ſo high a degree of preparation, eſpecially where they are quite free from the roots and ſeeds of weeds, as theſe are the points to be chiefly regarded in this culture. It has, however, been much too general a notion, that this plant is only capable of being grown to advantage on ſoils of the lime-ſtone or chalky kinds, as by this means many extenſive tracts are excluded from its culture in different parts, in which it might be found highly uſeful to the farmer. That it will ſucceed in lands where it has not been thought proper, is certain from various trials, though experiments are ſtill wanting to ſhew to what extent its culture may be admitted in different ſorts of land with ſucceſs and advantage. A fine clean ſtate of tilth is all that is neceſſary in theſe caſes.

Seed.—In reſpect to the ſeed, it is the beſt practice for the cultivator to ſelect it from the beſt and moſt abiding plants in his particular ſoil, as ſuch as is purchaſed at the ſeed-ſhops can rarely be depended upon. A certain method of knowing the goodneſs of ſeed is, by ſowing a number of the ſeeds, and ſeeing how many plants are produced by them. But the external ſigns of the ſeeds being good are, that the huſk is of a bright colour, and the kernel plump, of a light grey or blue colour, and ſometimes of a ſhining black. The ſeed may be good though the huſk be black, as that is owing ſometimes to the letting it receive the wet in the field, and not to its being half rotted in the heap. If the kernel be cut acroſs, and appear greeniſh and freſh, it is a certain ſign that it is good. But if it be of a yellowiſh colour, and friable, and looks thin and pitted, they are bad ſigns. But others obſerve, that the beſt ſeed is that which is plump, heavy, bright, and of a yellowiſh-red colour, and that it ſhould always be ſown quite freſh, as that which is old, or that has been long kept, never vegetates in a perfect manner. In purchaſing ſeed of this ſort, it is in general from about three to five ſhillings the buſhel.

In regard to the proper proportion or quantity of ſeed to the acre, it is obvious that it muſt be different according to the particular circumſtances and nature of the ſoil, as well as the method of culture that is practiſed and the time of ſowing. In the broad-caſt method, which is that moſtly employed, about four buſhels are in general a ſufficient proportion, though leſs is frequently given, but on ſuch ſoils as are proper for this plant, it is always neceſſary to have a full proportion of ſeed. By ſome, however, a much ſmaller quantity is made uſe of. And where the drill ſyſtem is had recourſe to, a ſtill ſmaller proportion is uſed, as from two to two and a half, or three buſhels. In ſome places five buſhels are however uſed in the broad-caſt method of ſowing.

With reſpect to the ſeaſon of ſowing this ſort of graſs ſeed, it may be obſerved, that the earlier it can be put into the ſoil in the ſpring the better, as from the greater moiſture of ſuch ſoils there will be a greater probability of their vegetating in a perfect manner. Where the ſowing is executed at a late period, and dry weather ſucceeds, Mr. Banniſter thinks that much of the ſeed would be prevented from growing, and the young plants be more expoſed to the deſtruction of the fly; therefore, according to this writer, the ſowing of the ſaintfoin ſeed ought never to be deferred longer than the beginning of March, and that it is ſtill better to complete this work in February. Some, however, ſuppoſe it may be deferred to the middle of March without injury.

This is a ſort of graſs that may be ſown either alone or with any of the ſpring corn-crops, but with barley after turnips is ſuppoſed the beſt method. It may likewiſe be ſown with buck-wheat, where the land is ſuitable, with ſucceſs. And ſome adviſe its being ſown with about half the quantity of barley which is uſually ſown for a full crop, as it may ſhade and keep it moiſt during the firſt ſummer, and at the ſame time not injure it, from the crop being lighter, which is ſometimes the caſe. Where the barley is drilled, the ſaintfoin may afterwards be put in, in the ſame manner, but in a contrary direction. If ſown over the wheat it ſhould be harrowed in, and afterwards rolled. In whatever method it is ſown, as the ſeeds are larger than thoſe of many other graſſes, they ſhould be covered in with more care, and to a ſomewhat greater depth. By ſome, the ploughing the ſeed in with a very thin or ſhallow furrow is recommended. In moſt caſes, eſpecially in all the more light ſorts of land, in which this ſort of crop is grown, the uſe of the roller may be neceſſary immediately after the ſeed is put into the ground. It is the practice in ſome diſtricts to ſow a ſmall portion of clover ſeed with this crop, with the idea of increaſing the firſt year's produce; but as plants of different kinds ſeldom anſwer well when grown together, from there being a continual conteſt in their growth for an aſcendancy, it is perhaps a better method to increaſe the proportion of ſeed, without mixing it with that of other ſorts. It is, however, ſuppoſed by Mr. Marſhall, that ſuch a practice is beneficial in ultimately procuring a fine clean crop of ſaintfoin upon the land.

It is a ſort of crop that grows in ſo perfect a manner in the broad-caſt method, that there can ſeldom be any neceſſity for having recourſe to the drill. It may, however, be cultivated in the latter mode with much ſucceſs. And in Norfolk it is the practice with ſome cultivators to have it drilled at nine inches acroſs the barley crops, which have been ſown in the ſame way.

And it has been obſerved, that in Lincolnſhire, where this plant is much grown, the common allowance of ſeed is five buſhels to an acre, and that a gentleman ſouth of Lincoln adviſes the ſowing or planting a ſmall quantity of trefoil with it (about four pounds on an acre). The reaſon for which is, that in that expoſed country, the young plants ſuffer more by the ſun in ſummer, than by the froſt in winter. Of courſe the trefoil, coming to perfection the firſt year, and living only three, will be a ſhelter for the young plants, during the firſt year or two, and die off when the ſaintfoin wants its room. This ſyſtem is ſaid to be well ſupported by practice: but rye-graſs ſhould on no account be ſowed with it; that being, when left for fodder, a great impoveriſher of ground.

It is likewiſe added, that ſaintfoin is obſerved to get to perfection in three years, laſts in the land good for five, and then dwindles during four or five years more. Its firſt crops are from one to two loads; in its ſecond ſtage from three to four loads, and it dwindles down again to one. Laſt ſummer, which was remarkably dry, did very well with this graſs. And it has been ſown with barley, with wheat, and without corn in the ſpring. It has likewiſe been drilled, according to Mr. Tull's directions, in beds, with treble rows, and in equi-diſtant rows. The horſe-hoed beds were good, as far as they went: the others, drilled at a foot diſtance, gave ſo much room for weeds to come up, that the ſucceſs was very moderate; which indeed would have been the caſe with the former, had not the horſe-hoe cleared them. On the whole, as far as the experience and obſervation of the writer reach, he would never chooſe to drill his ſeed, but to ſow it in the broad-caſt way, on land very fine, with a good quantity of ſeed.

And according to the author of the Rural Economy of Glouceſterſhire on the Cotſwold Hills, where this plant is extenſively grown, and where the calcareous rubble, which forms the ſub-ſoil, is in ſome places two or three feet deep, and the rock below moſtly open; the roots have been traced, in ſtone quarries, to ten, ſome will ſay twenty feet. Here the ſaintfoin flouriſhes luxuriantly. But in other places the rock riſes, in flat horizontal ſeams, too near the ſurface: there the ſaintfoin is weaker, and goes off ſooner. It is ſaid to have been cultivated upon theſe hills upwards of one hundred and fifty years. And in the eſtabliſhed practice, it is generally ſown with barley after turnips. The period of ſowing it in this diſtrict is from the middle to the end of March; and the quantity of ſeed in proportion to the ſtate of the land: where the ſoil is foul, a larger allowance is made than where the contrary is the caſe, but in general from one buſhel to three is employed on the acre. The advocates for ſaintfoin ſuppoſe a buſhel is ſufficient, provided the land be perfectly clean. And that the plants by being thin become ſtronger and more productive of herbage.

Alſo, in the Agricultural Survey of the County of Norfolk, it is ſtated by Mr. Young, that Mr. Allen at Stanhow had very fine ſaintfoin on a rich loamy ſand, on a clay marle bottom, worth 16*s.* an acre. The common crop was two tons *per* acre. And that in 1792, Mr. Bevan at Riddleſworth ſowed two buſhels an acre of ſaintfoin, and ſix pounds of clover and trefoil, to give a crop the firſt year. But that in 1802 it got full of rubbiſh, did not anſwer, and was ploughed up after four or five years. The method he intends to purſue is, it is ſaid, to turnip his land for two years, both fed off with ſheep, and to lay down with buckwheat in June, ſowing four buſhels of ſaintfoin *per* acre: he did this ſome years ago, and it is now the beſt ſaintfoin on his farm. He has now twenty-eight acres under the ſecond crop of turnips, to be thus laid down. And he has ſown ſaintfoin with rye to good effect. Mr. Ward, of Weſt Harling, has alſo done the ſame, and got fine crops. It is further ſtated, that Mr. M. Hill ſowed ſaintfoin on a deep gravel, and it gave, in the third year, one load and a half *per* acre: from the repeated failure of ſeeds he has been induced to lay down this ſpring forty-eight acres. The barley drilled firſt at ſix inches, and then ſaintfoin at the ſame diſtance: three buſhels an acre, each looks very promiſing. The writer adds, that the earl of Albemarle made an experiment with this plant. Taking into his own hands an immenſe farm of 4000 acres, with 3000 ſheep, and wiſhing to provide all ſorts of food as early as poſſible, he ventured to ſow a field in extremely bad order, with ſaintfoin alone in June: the foulneſs of the land ſuch, that his lordſhip's hopes were not ſanguine. This was in 1801, and the crop this year, 1802, was among the very fineſt the writer had ever ſeen, at leaſt two tons and a half *per* acre. The reſult is remarkable, and will, he thinks, certainly bring to the reader's mind the huſbandry of ſowing ſaintfoin among couch in Glouceſterſhire, mentioned by Mr. Marſhall, in his Rural Economy of that diſtrict. It is further remarked, that at Holkham there is much gravel, in ſome places to the depth of above twelve feet, the ſurface a thin covering of ſand; no chalk or marle beneath, at any known depth. The writer was ſolicitous to aſcertain whether this ſoil would do for ſaintfoin; Mr. Coke aſſured him that it ſucceeded very well on it, but it is to be remembered that the whole county has been marled. He adds, that Mr. Overman and Mr. Coke drill ſaintfoin before drilling barley, in the contrary direction to that in which the barley is to be drilled, the rows at ſix inches and three quarters, ſeed three buſhels an acre, and perfectly regular; much more ſo than the generality of broad-caſt crops. And that Mr. Pitt's father and grand-father both tried ſaintfoin upon very deep and dry gravels; there are ſome pits fifteen or twenty feet deep; but it did not anſwer. But Mr. H. Blythe, of B[illegible]ham, has a very fine plant three years old, from drilling three buſhels of ſeed *per* acre, at ſix inches three-quarter rows: it is common to ſow from four to five. This field before produced little or nothing, and was over-run by rabbits and game. He gave a clean ſummer fallow for drilled oats, and drilled the ſaintfoin acroſs the oats. And in the Hertfordſhire Report on Agriculture, by the ſame writer, it is obſerved, that he has rarely ſeen finer ſaintfoin than ſome ſmall pieces on Mr. Clarke's farm at Sandridgbury. The ſoil is a good flinty loam on a chalk bottom. He, Mr. Clarke, thinks the price of corn of late has been too high for this graſs to anſwer on any good ſoil; but he has a neighbour, Mr. Thrale, another tenant of lord Spencer's, who ſows it on an extenſive ſcale. He adds, that about the neighbourhood of Hitchin, they ſow four buſhels with oats on clean land. It laſts on white land ten years, but on gravel ſeven or eight years; and produces two loads an acre while in vigour, and even more, but one and a half on an average. The farmers give it to horſes, and break it up with oats, ſowing them always on one ploughing. And Mr. Sedgwick conſiders this cultivation as the beſt for chalk hills. Four buſhels of ſaintfoin are ſown *per* acre with barley, after turnips. The graſs laſts ten years, and produces ſometimes from a quarter of a load to two loads *per* acre. He aſhes it every ſecond year. It is the beſt hay to ſell or uſe. They rarely cut it for ſeed, but know it is beneficial to the crop. It will flouriſh well on the ſame land again in three, four, or five years. It is alſo ſtated to ſucceed well at Munden, and eſpecially on a ſoil of an adheſive nature, on chalk: they ſow four buſhels. This graſs laſts ſeven or eight years, and ſometimes longer; and produces two loads *per* acre. And Mr. Ruſſel, at Cheſhunt, ſowed ſaintfoin forty years ſince on a ſtrong gravel, and it anſwered well; and there are ſtill ſome plants remaining. Mr. Calvert, at Albury, alſo knows ſome plants that are fifty years old.

After-culture.—It is found that in the after-management of this ſort of graſs much attention is neceſſary, as upon its being properly performed the ſucceſs of the crops in a great meaſure depends. Two practices have been principally adviſed in its culture which are diametrically oppoſite to each other; the firſt of which is that of its being conſtantly cut for hay in the firſt year of its growth, and which is ſupported by a great number of the moſt experienced cultivators; while others contend that it is a much more beneficial method neither to have it cut nor paſtured in the autumn of the firſt ſeaſon. On which the author of a late practical work ſuggeſts, that it is probable both practices may be proper under different circumſtances, as in the richer ſorts of ſoils, where this plant moſtly affords a tolerable crop when ſown alone the firſt year, it may be mown with propriety, and without much injury done to the plants; but in thoſe of the thinner and more poor kinds, where the crops are in general the firſt ſeaſon but thin on the ground, and light, it may be advantageous to let them remain without being cut or fed down by ſtock, as in this way it may ſpread more, and form a better and more cloſe ſward in the following year. In ſuch caſes the ſeed, according to Mr. Young, will probably be worth five pounds the acre, while the ſtraw is good horſe-fodder, and the plants not at all injured at the time. By the plants in this caſe being ſuffered to feed, beſides the advantage juſt mentioned, they will have acquired a vigour of growth, and the ſucceeding crop be greatly increaſed from the ſhedding of the ſeeds. But in all caſes in the ſucceeding ſummers a crop of hay may be taken, and the after-graſs be fed down with any ſorts of ſtock but ſheep, till towards December, care being taken that they do not eat it in too cloſe a manner, as where that is the caſe, from the largeneſs of the roots, they may be in danger of injuring the crowns of the plants. In the following autumns there will however be leſs riſk in this reſpect, and ſheep as well as cattle ſtock may, it is ſuppoſed, be turned in and kept upon the paſtures till they are well eaten down, being always careful to ſhut them up as early as poſſible in the beginning of the year. This is the opinion of Mr. Kent. And it is further ſuppoſed that as this ſort of herbage is conſidered to be improved in its taſte by being nipped by the froſt, it may be a proper practice not to turn upon theſe lays too early in the autumnal ſeaſon. With this intention it may be adviſeable to defer it till the latter end of September, when this ſort of rouen or after-graſs will be found to have much effect in promoting the flow of milk in cows, as well as in forwarding the condition of fattening-beaſts; great ſtore of feed being ſtill left for ſheep. But with this ſort of ſtock they ſhould not be too cloſely fed down, or the ſheep remain too long upon them, as much injury may be ſuſtained by it. It has been ſuggeſted that all ſorts of cattle ſtock ſhould be removed by the beginning of the year from theſe rouens, as much harm might be done by their continuing longer. It is ſuppoſed by ſome cultivators of this plant, that the application of manure upon ſaintfoin lays is of very great utility when put upon them in the latter end of the ſecond autumn, after they have been laid down. And that for this purpoſe peat-aſhes are the beſt material that can be made uſe of where they can be procured in a ſufficient quantity. And other ſorts of aſhes are likewiſe found beneficial where theſe cannot be had. They ſhould be applied ſo as to form a thin, even, regular dreſſing over the whole ſurface of the crop. In this view ſoot has alſo been found of great utility when ſpread evenly over ſuch lays about the beginning of January in the proportion of about twenty-five or thirty buſhels to the ſtatute acre. And malt-duſt has been employed in the ſame way with great ſucceſs and advantage, as ſhewn by Mr. Banniſter in his Synopſis of Huſbandry. And it is ſuppoſed, that where thoſe ſorts of top-dreſſings can be applied every third or fourth year, the ſaintfoin crops, when well eſtabliſhed in the ſoils, may be preſerved in a ſtate of vigorous growth for ten or fifteen years or more, and the land be conſiderably improved by the roots ſtriking ſo deeply into it. The ſaintfoin plant uſually attains its perfect growth, about the third year of its growth, and begins to decline towards the eighth or tenth if not well aſſiſted by manure in the manner which has juſt been ſtated. Some, however, ſuppoſe peat-aſhes to be hurtful in wearing out the ſaintfoin, as ſeen below.

In moſt parts of Oxfordſhire it is top-dreſſed, or manured every year with peat or coal-aſhes, in the proportion of ſixteen or twenty buſhels of the former, and from ten to twelve of the latter, to the acre. The benefit of this is ſaid to be very great in the increaſe of the produce, which materially depends upon it, as it is often but little without it. The great ſuperiority gained in this way has been long known, and is now generally underſtood by farmers. The ſame field which, with theſe aſhes, will frequently give two waggon loads of this hay on the acre, without them may not yield half a load on the ſame extent. However, about the Heyfords, and other neighbouring places in the ſame diſtrict, where the common proportion of this graſs is about thirty acres on a farm of four hundred, they do not ſow any aſhes on the ſaintfoin, yet their average crop of this hay is not leſs than thirty hundred weight.

In Eſſex and Suſſex they likewiſe apply top-dreſſings of theſe kinds on the ſaintfoin, laying ſometimes, in the former, to the extent of from ſixty to eighty buſhels or more of coal-aſhes on the acre, at the rate of ſixpence the buſhel, carriage included, or thirty ſhillings the waggon load, containing a hundred.

Some contend that ſaintfoin ſhould never be fed, or at moſt, that after having been mown, it ſhould not be fed until after Michaelmas, when it will afford great plenty of graſs until the beginning of the enſuing year, being then laid by for the ſcythe, but never eaten cloſe, particularly by ſheep, on the above account. In the above diſtrict of Oxfordſhire, it is, for the moſt part, mown every year, the after-crop being commonly fed with lambs, until the beginning of October. Care is, however, generally taken not to feed too hard with this ſort of ſtock in the autumn, for fear of injury; but it is uſual for it to be depaſtured with ſuch ſtock for one year, at leaſt before the leys are broken up. Eating the whole growth of this crop by ſheep, and not turning in to it until it is advanced, has been found not to injure the plants. It has been a pretty general opinion that cutting or mowing this graſs while young is injurious, as it is liable to bleed, but here the contrary has been found by ſome, as in mowing it very early or young for ſoiling horſes or oxen, not the leaſt injury has been ſuſtained. And the feeding of ſaintfoin with ſheep for a year previous to breaking it up, has alſo been found very advantageous in increaſing the aſhes, by thickening the turf or ſward which is to be pared for burning.

In this diſtrict it is now generally allowed that neither the produce nor the duration of this graſs is ſo great as it was formerly; which is moſtly attributed to its repetition on the ſame land; it once laſted, it is ſaid, from fifteen to twenty years; now not more than ten or twelve, and in ſome inſtances not longer than eight. On the hills, in ſome parts it continues nine years, and in the lower lands ten. Where the land is ſpringy it ſoon goes, but on true ſtone-braſhes it will laſt longer than even twelve years. On new ground, in ſome caſes, it is found to hold out for fourteen or fifteen years; when after being ſown twice or three times, it only laſts ſeven or eight.

But in reſpect to the amount of crops of this kind, or the quantity of produce which is afforded, it muſt, of courſe, be liable to much variation, according to the nature of the ſoil, and the care that has been beſtowed in the preparation and after-management; but on a medium of ſoils and cultivation it may probably be eſtimated at from about one and a half to two tons the acre. And on the poorer and thinner ſtapled ſorts of land it will perhaps ſeldom afford leſs than from a ton to a ton and a half on the acre. And in regard to the frequency of the cutting thoſe ſorts of crops it is probable that on the thinner ſorts of ſoils it can ſeldom be done more than once, but on thoſe of the deeper ſorts two crops may ſometimes be taken, in the ſame manner as with thoſe of the clover kind, but care is always neceſſary in theſe caſes, that the future growth of the plants is not injured by this means. In Oxfordſhire two large loads on the acre are common.

And in reſpect to the application or uſe of this ſort of crop, it is various according to circumſtances. In its green ſucculent ſtate, it is highly uſeful for all ſorts of live-ſtock, though ſome conceive that when given to milch cows the milk is not ſo well flavoured as when feeding on the natural graſſes. It is found that when made into hay it is an extremely hearty and nutritious fodder for working-horſes and other ſorts of domeſtic animals. In ſome caſes it is alſo a profitable application of this ſort of graſs to mow it while in its green ſtate, before it comes into flower, for the purpoſe of ſoiling horſes and other ſorts of cattle in the ſtalls, in the manner that is practiſed with clover, lucern, and ſome other ſucculent green crops. But the moſt general application of it is in hay, which it affords of the beſt and moſt nutritious quality, both for horſes and other ſorts of cattle ſtock.

The hay of this graſs in Oxfordſhire is chiefly eaten by ſheep and cart-horſes; by the former, while at turnips, in which way it is ſuperior to any other ſort of food, but greatly valuable for every uſe. The after-graſs is ſometimes conſumed by cows, but more frequently by ſheep, eſpecially lambs, for which it is an excellent food, as it never ſcours them. Where it is eaten by cows before it has been affected by froſt, it is ſuppoſed in ſome places to render the cream bad. The hay, which is of the beſt kind, is alſo occaſionally employed in fattening oxen that have been wrought, as well as others, which are wholly completed on it after they are taken into the ſtalls, and with which they do perfectly well. This graſs is conſidered by ſome as giving better hay the firſt year of its growth than any afterwards. The hay is of ſuch value that it pays well for other purpoſes as well as ſheep.

It has been remarked by Mr. D. Hamel, that this ſort of crop may be mowed before it is in bloom, for it is then admirable food for horned cattle; and when cut thus early it yields a ſecond crop, which makes ample amends for what was loſt by not letting the firſt come to its full worth. This early cutting is likewiſe attended with another benefit, which is, that it purges the cattle, in the beginning of the ſummer, and thereby frees them from diſorders occaſioned by the winter's cold or dry food. But that if the weather be rainy, it may be left ſtanding till it is in bloom; when it ſtill is excellent fodder for cows. But care muſt be taken in making it into hay that the flowers do not drop off, as they are very apt to do; for cattle are ſo very fond of theſe flowers that they often induce them to eat the reſt of the plant. And that if the rain continue, the ſaintfoin may be left ſtanding till ſome of its ſeeds are formed, and the crop will then be the more plentiful; not only becauſe it will have attained its full growth, but likewiſe becauſe its leaves, being more ſubſtantial, diminiſh leſs in drying. It is not, indeed, then quite ſo ſweet as before; but horſes eat it readily, becauſe they love to feel between their teeth the ſeeds, which now begin to be formed. He adds, that Mr. Tull ſays this fodder is ſo excellent that horſes need no oats when they are fed with it. He affirms that he kept a team of horſes with it a whole year in good plight, without giving them any oats, though they were worked hard all the time. He ſtates that he fattened ſheep with it in leſs time than others which were fed with corn. But that the hay of this plant can never be ſo good as when it is cultivated with the horſe-hoe; for in the common huſbandry it bloſſoms almoſt as ſoon as it is out of the ground. And if the ſeaſon continues ſtill rainy, it may be more adviſeable to let the ſaintfoin remain ſtanding than to run the hazard of having it rot upon the ground; for then the ſeed will ripen, and nearly make up for the loſs of the fodder, not only becauſe it will fetch a good price, but alſo becauſe two buſhels of it will go as far in feeding of horſes as three buſhels of oats; and cattle in general, as well as poultry, are extremely fond of it. And it is further ſtated that the firſt of theſe ſorts of ſaintfoin-hay, cut before the bloom, is Mr. Tull's virgin-hay, which is the beſt beyond compariſon, and has not its equal, except lucern. He gives the next place to the ſecond ſort, cut whilſt in bloom, and ſays that an acre of land, well cultivated, may yield three tons of this bloſſomed-hay; and he eſteems the third ſort, which he calls the full grown, many degrees inferior to either of the former, though it yields a greater crop, becauſe it has grown to its full bulk, and ſhrinks but little in drying. It is ſuppoſed that even the ſaintfoin that has yielded its ſeed may be cut down and dried; and when other fodder is ſcarce, it will be better food for horſes and large cattle, than the coarſe hay of flowed meadows, or any kind of ſtraw. In regard to the method of bringing it into the ſtate or condition of hay, it differs but little from that employed for clover and other ſimilar crops. It is cut immediately on its coming into full bloſſom, and as it remains but a ſhort time in this ſtate, as much expedition as poſſible ſhould be employed both in mowing and making the produce into hay. It is remarked by the author of the Synopſis of Huſbandry, who reſides in a diſtrict where the culture of this ſort of graſs is frequent, that of all other graſſes, it requires the leaſt pains in making; when the ſeaſon is favourable, the hay-makers may follow the ſcythe, and having turned over the ſwaths, throw them into wind-rows the ſucceeding day after the graſs is mown, when it may be immediately formed into cocks, and the whole crop be fit for carting in a week after it is mown; and though it may appear very green, and the ſtack, when made, take on or acquire a conſiderable degree of heat, there is no danger to be apprehended, providing the weather has been fair during the hay-making; as it is ſo far from taking harm by heating in the ſtack, that the contrary ſtate is the moſt to be feared; and for this reaſon great care is neceſſary not to ſuffer the fodder to continue long either in the ſwath or in graſs-cocks, leſt the ſun and wind ſhould dry it up too faſt, and by exhaling its juices prevent the heating in the ſtack, and thereby render it of little value. In order to preſerve its ſucculence, in ſome places they put a number of theſe graſs-cocks together, ſo as to form large cocks of a ſize to contain a load in each, and finiſh the ſtacks out of the cocks. And it is likewiſe a practice with many farmers, where the crop is ſlight, to turn the ſwaths, and then run them into cocks with a three-pronged barley fork, following with a wooden dew-rake, the head of which is of ſufficient width to cover the ground occupied by three or four ſwaths, in this manner proceeding with the utmoſt diſpatch, ſaving a deal of labour and expence in the buſineſs.

Seeding the Crop.—Where this ſort of crop is let ſtand for ſeed, it ſhould remain on the land till the huſks become of a ſomewhat browniſh colour, and the ſeeds are perfectly plump and firm, as by theſe means they will not only be better in their quality, but be in leſs danger of being injured in the field from the very ſhort time that it will be neceſſary for them to remain, and alſo leſs in danger of being hurt by heating when laid up for future uſe.

It has been aſſerted that it requires ſome experience to know of what degree of ripeneſs is the beſt to cut the ſeeded ſaintfoin; becauſe all its ſeeds do not ripen at the ſame time. Some ears bloſſom before others; every ear begins bloſſoming at its lower part, and continues to blow gradually upwards for many days; ſo that before the flower is gone off at the top, the ſeeds are almoſt filled at the bottom. By this means, if the cutting be deferred till the top ſeeds are quite ripe, the lower, which are the beſt, would ſhed and be loſt. The beſt time, therefore, to cut it, is when the greateſt part of the ſeed is well filled, the firſt blown ripe, and the laſt blown beginning to be full. The unripe ſeeds will ripen after cutting, and be, in all reſpects, as good as thoſe that were ripe before. Some, for want of obſerving this, have ſuffered their ſaintfoin ſeed to ſtand till all of it has ſhed, and been loſt in cutting. Saintfoin ſhould never be cut in the heat of the day, while the ſun ſhines out; for then much, even of the unripe ſeed, will ſhed in mowing. The right time for this work is the morning, or the evening, when the dew has rendered the plants ſupple. When the weather is fine and clear, the ſaintfoin will ſoon dry ſufficiently in the ſwaths, without turning them; but if any rain has fallen, and there is a neceſſity for turning them, it ſhould be done very gently, while they are moiſt, and not two ſwaths together, as in the other hay made of ſaintfoin before it has ſeeded. If the ſwaths are turned with the handle of the rake, it is beſt to raiſe up the ear-ſides firſt, and let the ſtub-ſide reſt on the ground in turning, but if it is done with the teeth of the rake, let the ſtub-ſide be lifted up, and the ears reſted on the earth. If it be cocked at all, the ſooner it be done the better; becauſe if the ſwaths are dry, much of the ſeed will be loſt in ſeparating them; the ears being entangled together. When moiſt, the ſeed ſticks faſt in the ear, but when dry, they drop out with the leaſt touch or ſhaking. It is, however, the beſt practice, as ſoon as the proper degree of maturity has been attained by the crop, that it ſhould be mown in as ſhort a time as can poſſibly be made convenient, and remain expoſed in the ſwath until the upper ſurface is fully dried, when it muſt be wholly turned over, but in a very careful manner, ſo as to prevent the ſeeds from ſhedding and being loſt, as much as the nature of the work may admit of. When this ſide has been rendered perfectly dry and criſp in the ſame way as the other, the crop ſhould either be threſhed out upon cloths in the field where it is grown, or laid up in ſtacks to be afterwards performed when the farmer has more leiſure and convenience for the work.

But the work of threſhing out the ſeeds, in this kind of crop, is much leſs troubleſome and expenſive than in that of the clover kind. In caſes where threſhing-machines are in uſe, the buſineſs may be executed with great eaſe and facility in that mode. It has, however, been obſerved by a late writer, that when the ſeaſon is favourable, the practice of threſhing it out in the firſt way is probably the moſt beneficial, as the ſtems or haulm may be laid up for the purpoſe of fodder in the ſtack.

As the threſhing in the field cannot be done but in very fine weather, and while the ſun ſhines in the middle of the day, the beſt manner of performing it is to have a large ſheet pegged down to the ground, for two men to threſh on with their flails; while two others bring them freſh ſupplies in a ſmaller ſheet, and two more clear away the hay that has been threſhed. The ſeed is emptied out of the larger ſheet, and riddled through a large ſieve; after which it is put into ſacks, and carried into the barn to be winnowed. Care ſhould be taken not to let the hay get wet, as in that caſe it would be ſpoiled. It is a very important, but difficult, matter, to keep the ſeed, that has been threſhed in the field, without becoming wet. If it be winnowed immediately, and only a little laid amidſt a great heap, or put into a ſack, it will heat and ferment to ſuch a degree, in a few days, that the greateſt part of it will loſe its vegetative quality. During that fermentation, it will be very hot, and ſmell ſour. Spreading it upon a barn-floor, though but ſeven or eight inches thick, will anſwer no end, unleſs it be frequently and regularly turned, until the heating is over: but even this will not make its colour keep ſo bright as that which is well houſed, well dried, and threſhed in the winter. This laſt, laid up and unthreſhed, will keep without any danger of ſpoiling, becauſe it does not lie cloſe enough to heat. The beſt way to preſerve the ſeed threſhed in the field is to lay a layer of ſtraw upon a barn-floor, and upon that a thin layer of ſeed, and ſo on alternately. By this means the ſeed, mixing with the ſtraw, will be kept well, and come out in the ſpring with as green a colour as when it was put in.

In reſpect to the produce in ſeed, it is ſaid to be uſually from about four to five coombs in ſome diſtricts; but in others it will probably be much leſs, eſpecially on the ſhallower ſorts of ſaintfoin ſoils. But this muſt obviouſly be liable to great variation from ſeaſon, &c. Seeding crops of this ſort is conſtantly found to improve them.

There can be no doubt, from the facts that have been given above, but that this is a crop of vaſt utility and benefit to the farmer, not only in providing an abundant ſupply of good fodder for the ſupport of different ſorts of live-ſtock, but of good feed for the latter part of the autumnal ſeaſon, in thoſe ſoils that are well adapted to its cultivation and growth; as it has been ſeen to be capable of affording a very large produce even on thoſe thin poor ſorts of land, that, under other circumſtances, yield only a very ſcanty produce either of herbage or hay. And in ſuch as are of the better and more fertile kinds, the quantity of crop is inconceivably abundant. On theſe grounds it has been ſuggeſted, by a practical writer, that its culture ſhould be extended to all thoſe extenſive tracts of land, in different parts of the kingdom, that afford little or nothing under other ſyſtems of huſbandry or modes of cropping, and which are not adapted to the growth of clover. This is particularly deſirable, as it is an artificial graſs that ſucceeds well in the ordinary methods of ſowing, without the trouble or expence of either the drill or the hoe. And, in addition to what has been ſaid above, Mr. Young, in the fourth volume of his Eaſtern Tour, obſerves that it ſeems extremely probable, from different trials that have been made with this plant, that it is not by any means ſo confined in reſpect to ſoil as has been generally ſuppoſed; though there can be little doubt but that it anſwers beſt on thoſe of the calcareous, dry, loamy kinds. But on ſuch as have had occaſionally applications of lime, it has been known to ſucceed in a perfect manner, according to Mr. Marſhall, in his Rural Economy of the Southern Counties. The moſt detrimental and unfavourable ſorts of lands, for the culture and growth of this kind of graſs, are all thoſe where there is much retention of moiſture, or where it remains upon them in a ſtagnant wet or ſpongy ſtate. In order to the healthy growth of this plant, a ſtate of conſiderable dryneſs is eſſentially neceſſary in the ſoil.

The moſt material inconvenience to which this kind of crop is expoſed is from the riſing of coarſe graſſes and weeds of different kinds; becauſe theſe, in a great meaſure, limit the duration of the plants, and not that of their age. The advantage of a proper and clean preparation of the land, previous to its being ſown, is, therefore, ſufficiently evident. Where, notwithſtanding every precaution, ſuch graſſes come up, ſo as to injure the ſaintfoin plants, Mr. Young ſays that harrowing has been had recourſe to with a degree of ſucceſs, when performed to ſuch an extent as to leave the ſurface of the ground in nearly the ſtate as if it had been ploughed. It has been remarked by the cultivators of this valuable plant in the iſle of Thanet, that where the crop takes, it is very advantageous to the farmer; yielding him, for many years, plenty of excellent fodder, upon land which would otherwiſe, perhaps, ſcarcely yielded him any profit at all: and beſides, when it begins to fail, if proper care be taken, the land, when broken up, will be found greatly refreſhed, and in a better condition to bear tillage, and a ſucceſſion of other crops. It is the practice with the farmers here, when they intend breaking up a ſaintfoin lay, to feed it the laſt three or four years. Mowing it at this time, they think, hurts and exhauſts the land too much.

In the practice of the Oxfordſhire farmers, two methods are had recourſe to, in breaking up old ſaintfoin lays: the one that of common ploughing, the other that of paring and burning; the conviction of the propriety of the latter, when properly performed, being very general. In ſome caſes, they firſt rice baulk it, and then give a clean earth for turnips; but in others, the turnips immediately follow the burning. The great object is that of getting the land into a clean firm condition, before it is ſown with corn, which cannot be done ſo well by any other means as that of turnips; and this is found the beſt mode of getting them. Much effect is produced by treading with ſheep in eating them off. The uſual objections to the practice have no weight, except in ſo far as it may be repeated too often; as it has been purſued not only without inconvenience, but with much advantage, on the lighteſt and thinneſt ſoils of the ſtone-braſh kind for a vaſt length of time. It is alſo very powerful in preventing miſchief from the grub and wire-worm, by deſtroying them. In breaking up merely by the plough, there is often much danger from the worm; but this is thought to be much guarded againſt by ſheep treading, or penning them on the crops and the land before they are put in, as well as by heavy rolling. Theſe lays are moſtly broken up for oats in the firſt place, after which turnips, then barley, afterwards peaſe, vetches, clover, or trefoil; to which ſucceed wheat, turnips, barley, and then ſaintfoin again. Some think that the land ſhould not be ſown again with this graſs for fourteen years, and that it would be better if once only in twenty or twenty-five years. Others do not, however, give credit to the notion, which has ſpread in ſome places, that land, which has been under this crop, muſt not be ſown with it again for many years, adducing facts in proof of the contrary.

In Norfolk, in 1784, Mr. Coke had 400 acres, an extent to which he carried this excellent graſs, in order to be able to feed off all his turnips by the end of March; avoiding thereby the common evil of permitting them to run up to bloſſom, for ſupporting the flock in April, by which the ſucceeding barley is always materially damaged; he found the object well anſwered. The hay was given in well contrived racks on wheels, in which both the hay and the ſheep's head, while feeding, are under cover from rain. A ſpace ſown with winter tares received the ſheep in May, if the layers were not ready for them. The ſame excellent cultivator then made an experiment on this graſs: ten acres were ſown with an addition of white clover, ten with trefoil, ten with red clover, and ten with ſaintfoin only. The reſult was, that the white clover diviſion turned out the beſt, the ſaintfoin alone the next beſt, then trefoil, and the red clover much the worſt. But ſome years after that period, he tried ray-graſs, and approved of it much better than any other plant for this purpoſe; obſerving that it kept down the blubber-graſs, ſo apt to come up with ſaintfoin: but from the time of the drill huſbandry being adopted, he has left off all additions; the regularity of the crop being ſo great, that all ſpaces are filled, and the cleanneſs of the land being truſted to againſt the blubber. And ſir M. Folkes has given much attention to ſaintfoin, but not with ſucceſs: he has prepared for it by two crops of turnips in ſucceſſion, both fed on the land by ſheep; yet twitch and blubber-graſs over-ran the crop in a few years, and ſome in that caſe has been ſpoiled in three or four. He has been careful not to feed it with ſheep, and he has harrowed it the third year ſeverely croſs and croſs, and from corner to corner, yet without deſtroying the blubber. By reaſon of this circumſtance, the culture does not flouriſh at all: when broken up, it is fallowed for wheat, and the crop generally good. Alſo Mr. Overman, of Burnham, has broken up ſaintfoin layers, and ſuffered much loſſes by the red-worm, that he was fearful of ſowing corn upon the laſt field he ploughed. He therefore ploughed it before winter, and ſummer-fallowed it without manure. After this he ſowed barley, which crop the writer viewed, and found very fine, not having ſuffered the leaſt attack. He remarked that the ploughing before winter probably contributed to the deſtruction of the worm, as well as the ſummer tillage. Mr. Overman broke up another field by thorough fallowing for turnips, the crop very good; he then ſowed peaſe, the crop middling; turnips again, bad; then barley, which was very much eaten by the red-worm; this followed by winter tares, now (1802) on the ground, and a bad crop. Mr. Coke of Holkham pared and burnt a ſaintfoin lay, intending turnips; but changing his mind, ſowed wheat, and the red-worm eat half of it. This ſhews that this operation is not in all caſes effective againſt that deſtructive animal. Mr. Riſhton of Thornham broke up a ſaintfoin lay eleven years old, by a baſtard ſummer-fallow for oats: the wire-worm ate up the crop. He then laid on ten loads an acre of dung, and ſowed turnips, which came to nothing (eaten alſo, the writer ſuppoſes, by the worm); then barley, and got fifteen coombs an acre; then peaſe, ten coombs an acre; and this year (1802), a great crop of wheat. Mr. Bloomfield at Harpley broke up a ſaintfoin lay in 1802, by one ploughing, and got a fine tilth for wheat by much ſcarifying.

And in Hertfordſhire, Mr. Doo at Bygrave finds ſaintfoin advantageous to mow for five or ſix years; he then feeds it with ſheep three, four, or five years, till it has got a good turf for paring and burning. Alſo Mr. Parker broke up a field of this graſs by a ſummer-fallow, and ſowed wheat, which the red-worm ate up; he then fallowed the land again, and ſowed it with turnips: and he broke up another field for Swediſh turnips, and had a fine crop, after which he ſowed oats. It is ſtated as the opinion of the Rev. Mr. Dove, that it is more profitable to break it up after ſix or ſeven years, as the land will then give better crops than after the moſs has impoveriſhed it, as he has known ſome left fourteen or fifteen. The land will yield it again, he thinks, after ten or twelve years. It ſhould be manured every ſecond year with 40 buſhels of ſoot, or 60 of peat-aſhes. A ſingular idea is ſtated to prevail about Berkhamſtead, which is, that aſhes wear out ſaintfoin; and that Mr. Rooper has experienced it. It there commonly laſts fourteen or fifteen years; but if not carefully preſerved from ſheep, not more than ſix or ſeven.

In ſhort, wherever there is a deficiency of meadow and paſture on farms, this is a moſt beneficial graſs, and probably the beſt ſubſtitute for them that is yet known; the produce being equally large, and good in quality for moſt purpoſes, as that afforded from them: beſides, the lattermath is excellent for many uſes, ſuch as weaning lambs, milking cows, and moſt ſorts of live-ſtock which are to be kept well. There is in fact no other method of managing chalk-hills and other ſimilar lands to ſuch profit, as no ſubſtitute will nearly ſupport live-ſtock in ſuch a proportion.

SAINTONGE, in *Geography*, a province of France before the revolution, about 25 leagues long and 12 broad; ſituated between 45° 5′ and 46° 20′ N. lat. and between 1° 15′ and 0° 10′ E. long. and bounded on the N. by Aunis and Poitou, on the E. by Angoumois, on the S. by Guienne, and on the W. by the ocean. It abounds in grain, fruit, and excellent ſalt. Its principal articles of trade are paper, horſes, and iron. This province now forms the department of the Lower Charente.

SAINTS, derived from *ſanctus*, *holy*, an appellation by which perſons eminent for their piety and virtue have been diſtinguiſhed. There are two terms in the ſacred writings by which this appellation is expreſſed; theſe are ἅγιος and ὅσιος. The former is uniformly rendered in the New Teſtament *holy*, or when uſed ſubſtantively in the plural, *ſaints*; and the latter, except in one inſtance, is always rendered by the ſame term, not only in the Engliſh bible, but in moſt modern tranſlations. Hence ſome have concluded that both theſe Greek words are altogether equivalent. Dr. Campbell, however, is of a different opinion. In ſupport of this opinion he alleges, *firſt*, that in the Septuagint, which is the foundation of the Helleniſtic idiom, one of them is that by which one Hebrew word, and the other that by which another, not at all ſynonimous, are commonly tranſlated. Ἅγιος is the word uſed for קדוש, *kadoſh*, *ſanctus*, *holy*; ὅσιος for חסיד, *chaſid*, *benignus*, *gracious*. He argues further, that theſe words have been underſtood by the ancient Greek tranſlators to be ſo diſtinct in ſignification, that no ſingle inſtance occurs, in which the Hebrew word *kadoſh* is rendered by the Grek ὅσιος, or *chaſid* by ἅγιος. Another reaſon, which inclines this excellent biblical writer to think that the two words are not ſynonimous is, becauſe he finds, on examining and comparing, that there is a conſiderable difference in the application of them, not only in the Old Teſtament, but in the New. As to the word ἅγιος, it is applied not only to perſons, but to things inanimate, as the ſacred utenſils and veſtments; to times, as their jubilees and ſabbaths, their ſolemn feſtivals and faſts; and to places, as the land of Judea, the city of Jeruſalem, the mountain on which ſtood the temple, the temple with its courts; but more eſpecially the houſe which the courts incloſed, the outer part of which was called, by way of eminence, ἡ ἅγια, ſc. σκηνη, *the holy place*, and the inner, ἡ ἅγια ἅγιων, the *holy of holies*, or the *moſt holy place*. Whereas the word ὅσιος is applied only to perſons, or beings ſuſceptible of character. Moreover, when ἅγιος is applied to perſons, it has not always a relation to the moral character, but often to ſomething which, in regard to the perſon, is merely circumſtantial and external. In this reſpect the children of Iſrael are called a *holy* nation, being conſecrated by their circumciſion, though they were rather worſe inſtead of better than other nations, as Moſes their great legiſlator often declares to them. In this ſenſe the tribe of Levi was *holier* than any other tribe, purely on account of its ſelection for the ſacred ſervice: the prieſthood had more *holineſs* than the other Levites, and the high prieſt was the *holieſt* of all. Thus our author conceives the term ἅγιος to have been applied to Aaron (Pſ. cvi. 16.); not becauſe his perſonal character entitled him to this diſtinction above Moſes, but becauſe he was the only individual of the people who bore on his forehead the ſignature of his conſecration, *holineſs to the Lord*, ἁγι ασμα Κυριȣ. On the other hand, it does not appear, from any clear paſſage, either in the Old Teſtament or the New, that the Hebrew word *chaſid*, or the Greek ὅσιος, is ſuſceptible of this interpretation. To this purpoſe, Houbigant, in his valuable edition of the Old Teſtament, with a new Latin tranſlation, and notes, will not admit that it can any where refer to Aaron or his ſucceſſors in the pontificate. Our author further alleges, that the application of the words ἅγιος and ὅσιος is different in another reſpect, *viz.* that the latter is ſometimes found coupled with other epithets, expreſſive of different good qualities, and applied to character or moral conduct, each exhibiting, as it were, a feature diſtinct from thoſe exhibited by the reſt; whereas the word ἅγιος is not commonly accompanied with other epithets: when this is the caſe, they are of ſuch a general nature, as rather to affect the whole character than ſeparate parts of it. This obſervation is illuſtrated and confirmed by ſeveral appropriate inſtances, deduced from Heb. vii. 26. Tit. i. 8. and Rom. vii. 12. to which the reader is referred. Our author, having aſſigned his reaſons for thinking that the two words ὅσιος and ἅγιος in the New Teſtament are not ſynonimous, proceeds to aſcertain the meaning of each. The primitive ſignification of the word *kadoſh*, *hagios*, appears to have been *clean*; firſt, in the literal ſenſe, as denoting free from all filth, and ſecondly, as expreſſing what, according to the religious ritual, was accounted *clean.* The firſt is natural, the ſecond ceremonial cleanneſs. Some traces of the firſt of theſe meanings occur in the Old Teſtament; but nothing is more common than the ſecond, particularly in the Pentateuch. Moreover, as things are made clean for uſe, the term has been adopted to denote, thirdly, *prepared, fitted, deſtined for* a particular purpoſe; and more eſpecially, fourthly, *conſecrated,* or devoted to a religious life: fifthly, as things ſo prepared and devoted are treated with peculiar care and attention, to *hallow* or *ſanctify* comes to ſignify to honour, to reverence, to ſtand in awe of, and *holy* to imply worthy of this treatment, that is, honourable, *venerable,* awful; and ſixthly, as outward and corporeal cleanneſs has, in all ages and languages, been conſidered as an apt metaphor for moral piety, it denotes guiltleſs, *irreproachable,* which is at preſent, among Chriſtians, the moſt common acceptation of the word. The author has produced ſome examples of the ſix uſes abovementioned. See Deut. xxiii. 11. 13, 14. 2 Chron. xxix. 5, &c.—15, 16. 18.—5. 17. 19. Lev. xi. 42, &c. xx. 25, 26. Exod. xix. 10. 14. 22. Lev. xxi. 1—6. Joſh. iii. 5. Joſh. vii. 13. Numb. v. 17. Jer. vi. 4. Mic. iii. 5. 2 Chron. xxx. 17, 18. Iſaiah, lxv. 5. Jer. xii. 3. 1 Cor. vii. 14. Joſh. xx. 7. Judg. xvii. 3 Jer. i. 5. Lev. xxii. 32. Numb. xx. 12. Joſh. xxiv. 19. Pſ. xxix. 3. Pſ. cxi. 9. Iſ. vi. 1, &c. Rev. iv. 8, &c. Iſ. viii. 12, 13. Lev. x. 1, &c. We ſhall here add, that the exhortations to holineſs in the New Teſtament are evidently to be underſtood of moral purity, and of that only. On other occaſions, the words *holy* and *ſaints,* ἅγιοι, even in the New Teſtament, ought to be explained in conformity to the fourth meaning above aſſigned, *viz.* devoted or conſecrated to the ſervice of God.

With reſpect to the word חסיד, *chaſid,* ὅσιος, our author obſerves, that this is a term which properly and originally expreſſes a mental quality, and that only in the ſame manner as צדיק, *tſadik,* δικαιος, *juſt,* אמון, *amon,* meaning at different periods: its moſt certain acceptation being *gracious, merciful, beneficent, benign.* In its reference to God and religion, it means *pious* and *devout.* Agreeably to this ſenſe, our tranſlators have, in ſeveral places of the Old Teſtament, rendered it *godly;* and the phraſe οι ὁσιοι τȣ Θεȣ is, therefore, not improperly rendered the *ſaints of God,* that is, his pious ſervants.

Without farther enlarging, we ſhall cloſe this article with our author's obſervation, that in regard to the manner of tranſlating *kadoſh* in the Old Teſtament, and *hagios* in the New, when all circumſtances are conſidered, it is ſafeſt to retain very generally the common verſion *holy.* The ſame remark holds nearly alſo of the conjugates. Campbell's Preliminary Diſſertations, part iv.

SAINTS, *Sancti,* in the Romiſh church, holy perſons deceaſed, and, ſince their deceaſe, canonized by the pope, after ſeveral informations and ceremonies.

One of the points in which the Roman Catholics and Proteſtants differ is, that the former addreſs, invoke, and ſupplicate ſaints, &c. to intercede for them; whereas the latter hold it ſufficient to propoſe their good examples for our imitation.

Cardinal Bellarmine, and other popiſh writers, have pleaded, that by praying to the ſaints, they only intend to expreſs a deſire of their interceſſion, and that their invocation of the ſaints terminates ultimately in God. Accordingly they have diſtinguiſhed two ſorts of worſhip, one called *latria,* appropriate to God, and another *dulia,* which being of an inferior nature, is paid to angels and ſaints. However, many of their own writers have exploded this diſtinction, and others have owned that it is unſcriptural. There is another ſort of worſhip, which is of a higher degree than that paid to ſaints in common, and which is peculiar to the Virgin Mary: this they call *hyperdulia.*

After all, thoſe who read their books of devotion, their Hours, their Offices, their Roſaries, their Breviaries, and their Miſſals, will find many direct addreſſes to the ſaints, which are very different from thoſe prayers whoſe object is merely to ſupplicate their interceſſion. Beſide, the council of Trent, ſeſſ. 25. directs to apply to the ſaints for their help and aſſiſtance, as well as their prayers; and condemns all who think that it is not good and profitable to offer prayers to ſaints, as chargeable with impious ſentiments. And the creed of pope Pius IV. expreſsly inſiſts upon it as an article of faith, that the ſaints, reigning together with Chriſt, are to be invocated. As to the antiquity of this practice, the council of Trent, ſeſſ. 25. ſpeaks of it as the uſage of the Apoſtolic and Catholic church from the beginning of Chriſtianity. As to the doctrine of the interceſſion of ſaints and angels, there is not the leaſt intimation of it in the writings of the two firſt centuries; though it muſt be allowed to have been introduced in the next century, and that Origen and Cyprian expreſsly favour this ſuperſtition. The worſhip of ſaints and angels is of a much later date; eſpecially as a ſtanding generally received doctrine of the church. For though Athanaſius was for worſhipping the ſaints, yet Cyril, who lived in the next century, ſays, we neither call the holy martyrs gods, nor are we uſed to worſhip them. St. Auſtin affirms, that neither ſaints nor angels will be worſhipped. Archbiſhop Uſher ſays, that as to the firſt four hundred years after Chriſt, for nine parts of that time, not one true teſtimony can be produced out of any father in favour of this doctrine; and cardinal Perron, Richelieu, and other learned writers among the Romaniſts, own, that the invocation of ſaints was not practiſed for the three firſt centuries. The firſt ſymptoms of this worſhip did not appear till towards the end of the fourth century, and it ſeems to have ſprung out of the regard which the Chriſtians at that time manifeſted to the memory of the martyrs. (See RELICS.) They frequented their tombs, and erected altars there, praying to God, and engaging themſelves to a ſtrict imitation of the virtues and piety of the departed martyrs; by degrees this veneration degenerated into praiſes and eulogiums of the ſaints themſelves, in which they uſed ſome apoſtrophes and rhetorical addreſſes; whence proceeded a ſuperſtitious regard to them, and at length, a direct invocation and worſhip of them. Nor does it appear, that any public prayers to ſaints were eſtabliſhed till A.D. 788, by the ſecond council of Nice; and this council was condemned by another held at Francfort, A.D. 794; and the invocation of ſaints was likewiſe condemned by a former council held at Conſtantinople, A.D. 755, conſiſting of three hundred and eighty-eight biſhops. In the ſeventh century, Gregory expreſsly ſays, that angels refuſed to be worſhipped ſince the appearance of Chriſt. See PAPIST and POPERY.

In order to convey ſome idea of the extravagance to which veneration for reputed ſaints hath arrived in the Romiſh church, we ſhall only mention one inſtance out of many that might be alleged. It is well known that there were three altars in the cathedral church of Canterbury, one erected to the honour of Chriſt, another to the Virgin Mary, and a third to St. Thomas à Becket; and the offerings at his ſhrine amounted to about 1000*l.*, when thoſe to the Virgin did not amount to 5*l.*, and thoſe to Chriſt were nothing. And Rapin informs us, that in one year, *viz.* AD. 1420, there were no leſs than fifty thouſand foreigners who came in pilgrimage to pay their homage at this tomb.

The number of ſaints, allowed as ſuch, in the Romiſh church, is prodigious. Father Papebroche reckons ſeventeen or eighteen hundred to have died on the firſt of June, only. Indeed the crowd of ſaints, with which their martyrologies are ſtocked, is ſcandalous, even to the more ſober of their own communion. Father Mabillon, in an expreſs diſſertation on the worſhip of unknown ſaints, obſerves, that honours are given to ſaints, who, perhaps, were not Chriſtians, and whoſe very names were never known. Hence, being under a neceſſity of giving them names, they are therefore called *baptiſed* ſaints. He adds, that they every day beſeech ſaints to intercede for them with God, when it is much doubted whether they themſelves be in heaven.

Father Papebroche and his aſſociates were a long time employed in writing the lives and acts of the ſaints; they ranged them each on the day of the year in which they died. For the firſt ſix months they publiſhed twenty-four volumes in folio; and ſince Papebroche's death, in 1714, his ſucceſſors have publiſhed more.

SAINTWIX, Thomas, in *Biography*, doctor in muſic, and maſter of Univerſity college in Cambridge, 1463. Wood, however, in his Faſti, has been able to produce no names of muſicians that were enrolled among muſical graduates of the univerſity of Oxford before the 16th century; though we are told of ſeveral at Cambridge of an earlier period. Henry Habington was admitted to the degree of bachelor of muſic there in 1463, when Saintwix received his diploma of doctor. See Doctor *in Muſic*, and Degrees.

SAINVILLE, in *Geography*, a town of France, in the department of the Eure and Loire; 15 miles E. of Chartres.

SAIPACHZELL, a town of Auſtria; 6 miles S.E. of Wells.

SAIPOUR, a town of Hindooſtan, in the country of Benares, and diſtrict of Singrowla; 68 miles S. of Benares. N. lat. 24° 17′. E. long. 82° 59′.

SAIRE. See Zaire.

SAIS, in *Ancient Geography*, a town of Lower Egypt, in the Saitic nome, of which it was the capital. Strabo ſays, that it had a temple conſecrated to the worſhip of Minerva. It was ſituated between the Canopic canal and the Sebennytic, and gave the name Saitic to one of the mouths of the Nile.

SAISAR, in *Geography*, a town of Perſia, in the province of Irak; 75 miles N.W. of Hamadan.

SAISSAC, a town of France, in the department of the Aude, and chief place of a canton, in the diſtrict of Carcaſſone; 12 miles N.W. of it. The place contains 1754, and the canton 5991 inhabitants, on a territory of 160 kiliometres, in 8 communes.

SAISSANDIN, a town of Africa, in Satadoo. N. lat. 13° 15′. W. long. 10° 30′.

SAISSANS, a town of France, in the department of the Gers; 3 miles N. of Maſſeube.

SAITA, a town of Hindooſtan, in Bahar; 11 miles N. of Bettiah. N. lat. 26° 59′. E. long. 84° 28′.

SAITELBACH, a river of Bavaria, which runs into the Fils, near Kuchen, in the territory of Ulm.

SAITO, a river of Naples, which runs into the ſea, 5 miles E. of Squillace.

SAIVA, the deſignation of a very extenſive ſect of Hindoos, who worſhip Siva, the perſonification of the deſtroying, or rather changing, form of the deity. The term comprehends, indeed, ſeveral ſects, being rather generally deſcriptive of all thoſe who, in any form or character, adore excluſively or principally the deſtructive member of the triad; in contradiſtinction to thoſe who, under the like general name of Vaiſhnava, ſimilarly worſhip Viſhnu the preſerver, under any of his forms or characters. Of the latter, ſee Vaishnava.

In this comprehenſive view of the term, we are diſpoſed to claſs under the head of Saiva all thoſe ſects who excluſively or principally worſhip Parvati, the ſakti or energy of Siva, directly or ſymbolically, through the groſſneſs either of idolatrous or typical intervention; as well as thoſe who addreſs their adoration more immediately to Siva, or his ſymbol. The worſhippers of Parvati are called Saktas. (See theſe articles, and Sakti.) Such as worſhip her ſymbol, the Yoni, are called Yonija; under which articles ſome account of them will be found. And under the articles Linga, the name of the Phallic emblem of Siva, (the deity who preſides over generation, as well as deſtruction,) Lingancita, and Lingi, the deſignations of the ſect or ſects of Saivas, who adore their deity typically through the intervention of the Linga, we have given as much as we deem expedient on topics not ſufficiently underſtood, perhaps, to admit of more full expoſition; or reconcileable to our notions of decency, in matters where every thing of a contrary tendency ought to be ſtudiouſly ſhunned. To the articles above-mentioned, to Sects *of Hindoos*, and to the others thence referred to, ſuch of our readers may turn, as are deſirous of farther information on points on which we avoid extended diſcuſſion.

The Saivas are alſo called Siva-bakht, as the Vaiſhnavas are Viſhnu-bakht; and we are told that they may be externally diſtinguiſhed by the ſectarial lines or marks on the forehead; the Saivas drawing them horizontally, the Vaiſhnavas perpendicularly. The former have ſometimes one, two, or three yellow lines, four or five inches in length, ſtraight or curved, of equal or unequal lengths, with dots black or white between or under them. Sometimes a creſcent, with various marks under or within it; all of which are ſaid to have their appropriate meanings and myſticiſms. Of theſe "ſectarial marks or ſymbols," diſtinguiſhing the various ſects of Hindoos, plate II. of the Hindoo Pantheon contains a great and curious variety; and in the 400dth and following pages, a copious explanation is given of them.

In the Prabod'h Chandroyana, a name meaning Riſe of the Moon of Intellect, a very curious Sanſcrit drama, tranſlated by P. Taylor of Bombay, a Saiva is introduced, who thus deſcribes himſelf: "My necklace and ornaments are of human bones. I dwell amongſt the aſhes of the dead, and eat my food in human ſkulls. Hearken to our rites: we drink out of the ſkulls of Brahmans; our ſacrificial fires are fed with the brains and lungs of men, mixed up with their fleſh; and human victims, covered with the freſh blood guſhing from the dreadful wound in their throats, are the offerings by which we appeaſe the terrible god." By the terrible god is of courſe meant Siva, whoſe name in this character is Bhairava, or Vairava, the tremendous. See Vairava.

SAIZY, in *Geography*, a town of France, in the department of the Saone and Loire; 10 miles E. of Autun.

SAK, a river of Ruſſia, which runs into the Volga, 12 miles above Samara, in the government of Simbirſk.

SAKARA. See Saccara.

SAKARIA, a river of Natolia, which runs into the Black ſea, 50 miles W. of Eregri, N. lat. 40° 53′. E. long. 31°.

SAKATEA, a town of Braſil; 14 miles W. of Goragot.

SAKER, the name formerly uſed for a ſmall ſort of cannon, of which there were three ſpecies; *extraordinary*, *ordinary*, and *leaſt ſized*.

Saker *extraordinary*, was about four inches diameter at the bore, 1800 pounds weight, ten feet long; its load five pounds, ſhot three inches and a half diameter, and ſomething more than ſeven pounds and a quarter weight; its level range was eſtimated at 163 paces.

Saker *ordinary*, was a ſize leſs, three inches three quarters bore, nine feet long, 1500 weight; its charge, four pounds of powder; bullet's diameter, three inches and a half; weight, ſix pounds; its level range was 160 paces.

Saker *of the leaſt ſize*, was three inches and a half diameter at the bore, 1400 pounds weight, eight feet long, its load near three pounds and a half; ſhot four pounds three quarters weight, and three inches and a quarter diameter. See Cannon and Gun.

Saker, in the *Manege*, the ſame with dock.

Saker, in *Ornithology*. See Sacre.

SAKI, in *Mythology*, a name of Indrani, the conſort or ſakti of Indra, the Hindoo regent of the firmament, as ſufficiently noticed under thoſe articles.

SAKIEH, in *Geography*, a town of the Arabian Irak; 80 miles N.W. of Baſſora.

SAKIES, a river of Canada, which runs into lake Michigan, N. lat. 47° 58′. W. long. 86° 45′.

SAKIT, a town of Egypt, on the weſt ſide of the Nile; 8 miles N.E. of Aſhmunein.

SAKITA, a country of Hindooſtan, contained in an extenſive tract of a triangular form, whoſe baſe of 200 miles or more is a line drawn from Caſhmere to the eaſtern confines of Anderab, and whoſe ſides are the continuation of Himmaleh on the eaſt, and that of Hindoo-Kho on the weſt. This ſpace contains, amongſt other countries, not only Sakita, correſponding to the Sacæ of Ptolemy (ſee Sacæ), but Little Thibet (or Baltiſtan), the Byltæ of Ptolemy, and Kuttore, anſwering to the Comedi of the ſame geographer. It alſo contains the ſources of the Indus. This whole ſpace is mountainous, its general level being far elevated above the countries on either ſide of it.

SAKKAMIUT, a town of Eaſt Greenland. N. lat. 60° 32′. W. long. 44° 20′.

SAKKAR, a town of Hindooſtan, in Golconda; 50 miles N.W. of Rachore.

SAKMANZUR, a town of Turkiſh Armenia; 18 miles N. of Erzerum.

SAKMARA, a river of Ruſſia, which runs into the Ural, near Orenburg.

SAKRA, in *Mythology*, a name of the Hindoo regent of the firmament, of whom an account will be found under his more common appellation of Indra. See alſo Vamanavatara.

SAKRADAWENDRA, is the name of one of the Ceyloneſe deities, who commands and governs all the reſt, and formerly anſwered the prayers of his worſhippers; but, according to the fabulous account which is given of him, the golden chair, on which he ſat, and the foot of which was made of wax, that was ſoftened by their prayers and tears, and ſunk downwards, ſo that he could take notice of their requeſts and relieve them, being diſpoſed of among the poor, they no longer derive any benefit from him, or pay him any reverence. Phil. Tranſ. abr. vol. v. part ii. p. 182. See Budun.

SAKRAN, in *Geography*, a river of Perſia, which runs into the gulf of Perſia, near Bender Rigk.

SAKRIPA, in *Mythology*, a name of the Indian deity Boodh, or Budha. One of his leading tenets was the ſin of depriving any animal of life: hence, and from the general tenderneſs and humanity of his doctrines, contraſted with the practices of ſome ſects of Hindoos of that time, Boodha obtained the appellation of *Sakripa*, or *benevolent;* alſo that of *Sadaya-hridaya*, or *tender-hearted*. See of him and his doctrines under Boodh, Sects *of Hindoos*, and Sakya.

SAKROTSCHIN, in *Geography*, a town of the duchy of Warſaw; 20 miles N.W. of Warſaw.

SAKTA, the deſignation of a ſect of Hindoos, who worſhip excluſively the female principle of nature, typified in Parvati, as the ſakti or active energy of Siva. As his ſymbol is the Linga, an emblem ſimilar to the Phallus of the Greeks, ſo her's is the female organ, named Yoni. Theſe ſymbols are worſhipped, it is ſaid, figuratively; and doubtleſs are ſo by ſome, while the ignorant adore them literally and groſsly, though not in the groſſeſt forms. The individuals comprized in this ſect are called Saktas. Thoſe who worſhip the male principle, under the form of the Linga, are called Lingi. Several of the Hindoo ſects have a right-handed and decent path, and a left-handed and indecent mode of worſhip. The indecent worſhip of the Saktas is ſaid to be moſt groſsly ſo, conſiſting of unbridled debauchery with wine and women. This profligate ſect is ſuppoſed to be numerous, though unavowed. In moſt parts of India, if not in all, they are held in deſerved deteſtation; and the decent Saktas do not publicly avow their ſect, nor wear on their foreheads the ſectarial mark, leſt they ſhould be ſuſpected of belonging to the other branch of it. The ſectarial mark of the Saktas is compoſed of three lines drawn, through a circlet, horizontally on the forehead, with aſhes, obtained, if poſſible, from a hearth on which a conſecrated fire has been maintained. The circlet is yellow, made with ſaffron, or with turmeric and borax. (On the ſubject of conſecrated fire, ſee Sagnika.) The left-handed path, or indecent mode of worſhip, eſpecially that of the Saktas, is founded on the Tantras, a branch of literature for this reaſon held in diſeſteem by the correct and reſpectable part of the community. See Tantra.

It is remarked above that Parvati, under one or more of her many names and forms, is the deity to whom the Saktas chiefly addreſs their worſhip; but it is believed that the Saktis, or active energies of other gods, are ſimilarly addreſſed. Radha, for inſtance, the ſakti of Kriſhna, is ſaid to be ſo worſhipped, and under circumſtances of groſſneſs ſcarcely credible; of which ſome notice is taken under the article Radha of this work. The goddeſs Sita, the ſakti of Rama, is alſo excluſively addreſſed or worſhipped by a ſect called Ramanuj; and they are ſometimes called Saktas, but are not accuſed of the indecencies of thoſe who follow the left-handed path of that ſect. (See Ramanuj.) For farther notice of the points mentioned in this article, the reader is referred to the following: Linga, Matri, Sakti, Sects *of Hindoos*, Siva, Yoni. Under our article Veda it is noticed, from the beſt authority, that the legends, on which the worſhip of ſeveral of the ſects above-mentioned is grounded, are not to be found in the Indian ſcripture; it is, therefore, reaſonably to be inferred that ſuch ſectarial worſhip is comparatively of modern origin.

SAKTI, a name given, by Hindoo mythologiſts, to the conſorts of their male divinities. It muſt be recollected that this ſyſtem has perſonified the abſtract and attractive powers of the deity, and has popularly aſcribed ſexes to thoſe mythological perſonages. The ſakti, or energy, of an attribute of God is female, and is fabled as the conſort of that perſonified attribute. The moſt obvious attributes of the deity, thoſe of creation, preſervation, and deſtruction,

tion, perſonified, form the trimurti, or triad, of Brahma, Viſhnu, and Siva. Their ſaktis, or active energies, are Saraſwati, Lakſhmi, and Parvati. Not only are the great powers ſo accommodated; the inferior deities in their own perſons, and the avataras or terreſtrial incarnations of the ſuperior, are likewiſe mated in fable, and have their will executed by active helpmates; each of whom, "with the ſame form, the ſame decoration, and the ſame vehicle," as is expreſſed in one of the Puranas, exactly reſembles the deity whoſe partner ſhe is; from whoſe bodies, indeed, as Eve from Adam's, they are in ſome theogonies ſtated to have proceeded, and whoſe powers and attributes they are armed with. See SECTS *of Hindoos*.

Without affecting much accuracy of arrangement, we will here give the names of ſuch of theſe ſaktis as we find any authority for aſſigning to the fabulous deities of the Hindoos. 1. Saraſwati, called alſo Brahmi, and Brahmani; ſakti of Brama. 2. Lakſhmi, of Viſhnu. She is otherwiſe called generally Vaiſhnavi, and as his ſakti in his form of Varaha, ſhe is Varahi; in his form of Naraſingha, ſhe is Naraſinhi; in that of Narayana, Narayani: as Rama, ſhe accompanied him under the name and form of Sita; as Kriſhna, again as Radha; as Wittoba, he had Rukmeni and Satyavama, forms of Lakſhmi. See the article VISHNU, for a liſt of his principal avataras, or incarnations. 3. Parvati, ſakti of Siva. Under their various forms and names they aſſume different appellations, her's generally diſtinguiſhed from his only by a feminine termination, as Bhaga and Bhagi; Bhagavata, Bhagavati; Bhageſa, Bhagiſi; Bhava, Bhavani; Bhudeva, Bhudevi; Bhuva, Bhuvi; Hara, Hari; Iſa, Iſi; Iſwara, Iſwari; Kala, Kali; Maha-kala, Maha-kali; Maheſwara, Maheſwari; Pikeſwara, Pikeſwari; Rudra, Rudri, or Rudrani; Swardeva, Swardevi, and others. In his character of Kandehrao, Siva was accompanied by Parvati under the name of Malſara. 4. Indrani, ſakti of Indra. 5. Kaumari, of Kumara. 6. Kauveri, of Kuvera.

In addition to theſe may be added, among others, the following incarnated ſaktis, attending the avataras, or deſcents, of their lords. To Prith'u belonged Prithwi: Chandri is called the conſort of Chandra, or Soma; Nirriti, of Nairit or Nirut; Varuni, of Varuna; Swaha, of Pavaka; Prabha, of Surya, &c. &c.

The "*eight* ſaktis, or matris," are ſometimes ſpoken of in Hindoo books; and no diſtinction is perceptible between theſe deſcriptions of perſons. Still the conſort, or energy of ſome of the above, are ſtiled ſaktis, though there is no authority for adding them to the liſt of devi matris, or divine mothers. (See MATRI.) It may, however, be here, as in moſt other mythological diverſities, obſerved, that all theſe ſaktis are reſolvable into, as they emanate from, *three*, (thoſe firſt named,) and theſe into *one*, Bhavani or Parvati; the conſort of Siva, the *changer* of forms; therefore both *creator* and *deſtroyer*, as the latter term is uſed in common language; but which philoſophically means *transformer* or *renovator*: combining thus the two great attributes of the Deity,—the three indeed, for the intermediate power of preſervation is neceſſarily predicated. Thus all are reſolvable into Siva, or his ſakti; and all are ſo reſolved by the Saivas, and Saktas, who excluſively worſhip this attribute, in the male or female nature, under the ſymbols of the Linga or Yoni. The Vaiſhnavas trace them up to their deity Viſhnu and his ſakti Lakſhmi, and Vaiſhnavi. Now both Siva and Viſhnu are avowed to be the ſun, who is typically adored as the ſymbol of the Deity; and thus is the charge of polytheiſm evaded by the philoſophers of the Eaſt, who ſanction in the ignorant public the groſſeſt idolatry, and the moſt irrational ſuperſtition. See SURYA, IDOLATRY, and TRIMURTI.

From the concluding part of the laſt paragraph it may be inferred how intimately connected are the perſons, and how cloſely interwoven are the multiform ſubjects, of the Hindoo Pantheon: ſo much ſo as to render it very difficult to avoid confuſion and repetition in the endeavour to divide and clearly arrange what, under our preſent knowledge, are almoſt incompatible with ſeparation and arrangement.

So much of the mythology of Italy and Greece has been proved either to be taken from that of India, or from a ſource common to all, that a diſpoſition is evident on the part of ſome enquirers to prove the identity of the whole. Without offering any opinion on this point, we have to notice that, in conformity with ſuch diſpoſition, an attempt has been made, and made with conſiderable ingenuity, to prove the three ſaktis of the Hindoo triad, that is to ſay, Saraſwati, Lakſhmi, and Parvati, to be the ſame with the Parcæ of weſtern mythologiſts. The laſt-named Hindoo divinity, under her name of Sweta-devi, or the White goddeſs, combines the three in a triune form, conſtituting a female trimurti. (See TRIMURTI.) She is then called Tri-Kala-devi-Kumari, or the divine threefold maid Kali; Tri-ſakti-devi, or the goddeſs with the triple energy; Tri-vidha, or threefold; Tri-ſakti, triple energied, &c.; reminding us of the "triple Hecate," in ſome of the varied forms of the Grecian Juno, or Diana. (See PARVATI.) A triangle denoting a combination of three in one, is a ſymbol of her and of her lord, like a ſimilar ſymbol in ſome of the myſteries of the weſtern world. See O'M.

Having in this article introduced this point, we ſhall proceed to ſtate ſome farther particulars relating to the ſuppoſed identity of the three ſaktis of India with the Parcæ of the Weſt.

Sweta-devi was born on mount Kailaſa (ſee KAILASA); the three gods directed their eyes ſo that their looks met in a focus, or point, and this divine maid ſprang up inſtantly, partaking of the three powers whence ſhe was produced: when creating, ſhe is Satwiki-Brahmi; when foſtering, Vaiſhnavi; when deſtroying, ſhe is Raudri. Theſe three goddeſſes are concluded (as well from theſe as from other points of coincidence that we do not give) to be the Parcæ, which, according to Plutarch (de Fato) were *three* and *one*. Fate, he ſays, inaſmuch as it be an energy, is the general ſoul of the world, and is threefold, Clotho, Lacheſis, and Atropos. And Plato ſays that Providence, by which he underſtands fate, both phyſical and metaphyſical, is threefold. Theſe "daughters of neceſſity" correſpond thus: Clotho with Saraſwati, or Brahmi, weaving the web of creation; Lacheſis with the foſtering Lakſhmi, or Vaiſhnavi; and Atropos with Parvati, in her character of Raudri, "black as night," the deathly energy of the deſtructive Siva.

Under the article MATRI of this work many particulars are given, referring equally to the ſakti, the ſubject of this: both are ſometimes ſpoken of ſo connectedly in Hindoo books, that it is not eaſy to perceive much difference between one and the other. Sometimes we read of ſeven, ſometimes of eight ſaktis, or devi matris, which latter, both in name and deſcription, immediately remind us of the mother goddeſſes, or deæ matres, of the Weſt. Matri-devi, in Sanſcrit, has preciſely the meaning of matres deæ in Latin. In India they are, as in Italy they were, conſpicuous and important deities. The ſeven are invoked together: no nuptial rites, among many claſſes of Hindoos, are performed without a previous offering to the matri-devi, the mother goddeſſes. Seven parallel lines are drawn on the floor or ground with due form to repreſent theſe divine mothers, who are then reverently circumambulated in the manner noticed under our article PRADAKSHINA. They are alſo called in

Sanſcrit Janani-devi, reminding us again in ſound and ſignification of the Junones-deæ of the Romans, a name likewiſe of the mother-goddeſſes; who, in the Weſt, were farther ſtiled Matres Familias, an appellation equivalent to the Kula-devata of the Hindoos, which literally means Deus, or Dea-Familias. Hindoos, eſpecially Brahmans, out of reſpect, often call their mothers Janani-devi.

Several of the particulars related in the latter part of this article are taken from Mr. Wilford's ingenious and learned "Eſſay on the Sacred Iſles in the Weſt," in the 11th volume of the Aſiatic Reſearches; to which, and his preceding eſſays on the ſame ſubject in the earlier volumes, we refer our readers for much very curious information as to the claſſical coincidences of eaſtern and weſtern mythology and literature.

It is reaſonably believed that the uſages of the ſaktis are comparatively of modern origin; as in the Veda, or Hindoo ſcripture, there is no authority for, or indeed mention of them; except in ſome detached portions, the genuineneſs of which is ſtrongly ſuſpected. (See Veda.) This belief extends to the legends on which the worſhip of the avataras of Viſhnu is grounded: of *Kriſhna* and *Rama* for inſtance. See thoſe articles.

SAKYA, a name of the Hindoo deity Budha, or Boodh. The term is ſaid to mean a wiſe man,—a philoſopher; a general epithet applied by his numerous followers to this great reformer. Muni is another of his names of like import; and he is ſometimes ſtiled Sakya-muni; and Sakya-ſinha, or the lion Sakya; the latter intimating, perhaps, that he was a warrior as well as a philoſopher. In the Sanſcrit language, both Budha and Sakya are ſaid to be generic terms for wiſdom. (See Muni.) General Vallancy, in his Eſſay on the Primitive Inhabitants of Great Britain and Ireland (Collectanea de Rebus Hibernicis, vol. iv.) ſays, that Budh, both in Iriſh and Sanſcrit, means *wiſe, ſkilful;* and that the other name of this reformer, which the learned general writes Seacha, or Seagha, the ſame probably as Sakya, means *crafty, cunning, ingenious,* in both languages.

The name of Sakya is of extenſive uſage in the Eaſt, although differently ſpelled and pronounced. The Xa-ka of the Chineſe, and the Seaka of the Japaneſe, have been reaſonably ſuppoſed the ſame with Sakya. Speaking of the Budz, or Seaka, of the Japaneſe, Kæmpfer ſays, "I have ſtrong reaſons to believe, both from the affinity of the name, and the very nature of this religion, that its author and founder is the very ſame perſon whom the Brahmins call Budha, and believe to be the eſſential ſpirit of Wiſhna, who made his ninth appearance in the world under this name: the Peguers call him Samana-Khutama." Hiſt. Japan. b. iv. ch. 6. The latter name is a variation probably of Gautama, or Godama. (See that article.) Samana is alſo a name of Budha, meaning holy, &c. Hence we have the Somonocodom of ſome writers. See Hindoo Pantheon, art. *Buddha;* and Symes's Embaſſy to Ava, p. 300. Sudhodana, and Sugata, are other names of this extenſively worſhipped perſonage. See thoſe articles, and Sects *of Hindoos*.

SAKYLA, in *Geography*, a town of Sweden, in the government of Abo; 33 miles S.S.E. of Biorneborg.

SAL, a river of Ruſſia, which runs into the Don, oppoſite to Kotchelovſkaia; 20 miles N.E. of Tcherkaſk.—Alſo, a town of Arabia, in the province of Nedſjed; 20 miles N.E. of Jamama.—Alſo, a river of Pruſſia, which runs into the Drauſen lake; 5 miles W. of Holland.

Sal, or *Salt*, one of the Cape de Verd iſlands, about 40 miles in circumference, ſo called from its number of ſalt-ponds, the water of which cryſtallizes into a beautiful ſalt; but it is ſo barren as to afford no trees, nor even verdure, except a few ſmall ſhrubs. Dampier, when he viſited it, could ſcarcely perceive a blade of graſs, and ſaw no animals except a few lean goats; but Davity ſays, that notwithſtanding its barrenneſs, it produces large flocks of goats, ſome aſſes, a few ſmall horſes, and abundance of ſea-fowl. La Croix obſerves that a prodigious number of tortoiſes lay their eggs on this iſland, upon which many inhabitants might ſubſiſt; nevertheleſs, all authors agree in deſcribing it as a deſolate and deſert iſland. N. lat. 16° 35′. W. long. 22° 40′.

Sal *Lake*, a lake of North America. N. lat. 50° 25′. W. long. 91° 30′.

Sal, *Salt*. See Salt.

Sal *Alkalinus*. See Alkali, and Salts.

Sal *Ammoniac*, in *Chemiſtry*, a ſalt compoſed of muriatic acid and ammonia, or the volatile alkali, and hence properly called *muriate of ammonia*. In commerce and the arts, it is called ſal ammoniac. From its great conſumption in dyeing, and ſeveral manufactures, it is manufactured extenſively in Great Britain, France, and Germany. It takes its name from Ammonia, a country in Libya, in the ſoil of which it exiſts ready formed. This ſalt, till the year 1759, was ſolely ſupplied from Egypt. The preparation of it conſiſted in collecting the excrement of camels and other animals feeding on ſaline plants. This excrement is firſt made into maſſes, and uſed as fuel. The ſalt is afterwards collected and put into large glaſs bottles. The bottles are expoſed in the lower part to nearly a red heat, in furnaces made for the purpoſe, the upper part of the bottle being kept at a lower temperature, and the mouth ſlightly ſtopped. The ſalt in this proceſs is ſublimed into the upper part of the bottle, in the form of a cake of a white colour, but ſlightly tranſparent, the impurities being left in the bottom. When the bottles are cold they are broken, and the cake of ſalt removed. The ſoot affords from about one-third to one-fourth of its weight of ſalt.

Since the period above-mentioned, the manufacture of it in Europe has continued to increaſe ſo much, as to render the importation from Egypt unneceſſary.

In the manufactories of Europe, the ammonia is generally obtained from animal ſubſtances, and in ſome caſes from the ſoot of pit-coal. Lord Dundonald attempted to obtain it by the direct diſtillation of coal, but the proceſs was not ſufficiently profitable. The Newcaſtle coal contains much more than moſt others. This is remarkably ſhewn in the great liability which braſs and copper have to be deſtroyed by expoſure to the ſmoke in London.

The animal ſubſtances employed for the extraction of crude ammonia are generally bones, and ſometimes hoofs, and the refuſe of horns. The waſte of curriers and ſhoemakers yields a conſiderable quantity. It might alſo be obtained in conſiderable quantity, and at little expence, from blood in the vicinity of large towns, or where great quantities of cattle are ſlaughtered.

The diſtillation of any of theſe ſubſtances is carried on in large ſtills made of caſt or wrought iron, but the latter is to be preferred, from not being ſo liable to crack with heat, which is often to a degree above redneſs. The moſt advantageous form is a ſhort direct cone with a broad bottom, the fire playing all over it: this will be obvious, from the difficulty of heat being communicated through looſe unconnected maſſes. The exit-pipe for the vapour is at the higheſt point in the ſtill, which is either inſerted into a worm-tub, or paſſes through a running ſtream of water into a receiver. The receiver ſhould be ſpacious, and kept quite cool. The ſubſtances which come over are animal tar in vapour, condenſing into a light brown fluid in the receiver, and extremely fetid;

an inflammable gas, which does not condenſe; and carbonic acid, united to the ammonia, which condenſes in the receiver. Beſides theſe there is a great quantity of water, commonly called phlegm. The latter is leſs when dry animal ſubſtances are employed, ſuch as bones and horns.

The inflammable gas ſhould be conveyed from the receiver by a tube, ſo as to open into the aſh-pit, where the gas is ſet on fire. The reſulting products of this combuſtion, and other fetid matter, paſs through the fire of the ſtill, and in a great meaſure prevent the ſmell which is too often a nuiſance in theſe manufactories. The tube above-mentioned ſhould be provided with a valve opening outwards, and fitting very tight. This is to prevent a retrograde current, when the gas ceaſes to be formed in the ſtill. At the time the latter takes place, and when the heat decreaſes, a partial vacuum is formed in the receiver. The common air now ruſhes in with the returning inflammable gas on fire, and a dreadful exploſion enſues. All this miſchief is prevented by the valve above-mentioned. The contents of the receiver are carbonate of ammonia, diſſolved in water or phlegm, and the animal tar. A conſiderable quantity of the latter may be ſeparated mechanically in the form of a browniſh oil. The clear liquid is ſtill very fetid, and is known by the name of *crude hartſhorn*. This generally is diſtilled a ſecond time, by which more of the fetid matter is ſeparated. It is now ſufficiently pure for the preparation of ſal ammoniac. This ſubſtance, rectified to a greater degree, is known by the name of *ſpirit of hartſhorn*.

In the ſtate above-mentioned it is directly, or indirectly, to be ſaturated with ſulphuric acid, which expels the carbonic acid, and forms ſulphate of ammonia. This was formerly effected by immediately adding ſulphuric acid.

A patent was obtained for forming the ſulphate of ammonia by means of ſulphate of lime (gypſum). When the latter ſalt, in powder, is placed on a large filter, and a ſolution of carbonate of ammonia runs through it, a double decompoſition enſues. The ſulphuric acid of the ſulphate of lime combines with the ammonia, forming a ſolution of ſulphate of ammonia. The carbonic acid of the carbonate of ammonia combines with the lime, forming carbonate of lime, which being inſoluble remains on the filter. The ſulphate of ammonia, which paſſes through, requires now to be evaporated till it can be obtained in cryſtals, which ſeparates the pure ſalt from the reſidual products of the animal matter. This ſalt, whether formed by the free ſulphuric acid, or by the laſt proceſs, is now to be employed for obtaining the muriate of ammonia.

For this purpoſe the ſulphate of ammonia and muriate of ſoda muſt be intimately mixed together, in the proportions of three of the former to two of the latter by weight, the ſalts being previouſly dried at the temperature of 212°.

The muriate of ammonia is now to be ſeparated from the ſulphate of ſoda by heat, the former ſalt being volatile at about 400° or 500° of heat. The mixed ſalts are put into an earthen veſſel capable of bearing a red heat without cracking. This veſſel is to be covered with another veſſel inverted upon it, of the ſame materials, and glazed in the inſide. Its ſhape ſhould be conical, having a ſmall hole in the ſummit, with a conical plug. The lower veſſel is to be placed in a furnace capable of heating it red-hot. The proportion of the height of the veſſels to their width ſhould be ſuch, that the upper veſſel may be kept at a heat juſt ſhort of ſubliming the ſalt. When the proceſs commences, the plug muſt be removed from the upper veſſel, the two veſſels being carefully luted at their joining with a mixture of pipeclay and ſand. The juncture will be more complete, if the lower veſſel has a groove round the top for the reception of the upper one, leaving a little ſpace for the lute. The fire is now to be gradually raiſed. A quantity of aqueous vapour, in the firſt place, eſcapes at the hole in the upper veſſel. When this ceaſes, white fumes begin to appear, which are the ſublimed ſalt. The plug may now be put in ſlightly. As the vapour of the ſalt riſes, it as quickly condenſes, and adheres to the upper veſſel, and ultimately forms a cake of the ſhape of the veſſel. This cake is the thickeſt at the top, and, when broken, exhibits a cryſtalline arrangement, the maſs being ſlightly tranſparent. The latter appearances will be more marked the hotter the upper veſſel, ſo that it be not too hot to volatilize the ſalt. When the white vapour ceaſes to aſcend, the proceſs muſt be ſtopped, and the veſſels allowed to cool.

The ſalt in the lower veſſel is ſulphate of ſoda, which requires only to be diſſolved and cryſtallized for the market. The ſal ammoniac is ſold in the cakes as it comes from the veſſel.

There would be no economy in making the ſubliming veſſels of a larger ſize than from about 12 to 18 inches in diameter. One fire-place, provided with a number of holes, may hold from ſix to eight pots.

A patent was granted to Mr. Joſeph Aſtley, dated July 28, 1807, for an improved proceſs for forming this ſalt. He procures the mother-water of the ſalt-pans, called *bittern*, which contains the muriate of magneſia. This, as well as the other earthy muriates, gives out its acid with moderate heat. He mixes the *bittern* with the animal ſubſtance from which the ammonia is to be procured, in ſuch proportion as to afford mutual ſaturation. The animal ſubſtance being reduced into ſmall pieces, the liquid bittern is added, and the maſs dried in a ſtove. It is then diſtilled in the common way. The acid of the earthy muriate riſes at the ſame heat the ammonia is evolved. They therefore unite in their naſcent form, directly producing the muriate of ammonia. The ſalt is, by a ſecond proceſs, either cryſtallized in the humid way, or ſublimed by the apparatus already alluded to in the common method. Sal ammoniac, or muriate of ammonia, in a ſtate of purity, and in its ſublimed ſtate, is a compact cake, ſlightly elaſtic, and poſſeſſing ſo much flexibility as to be difficult to reduce to powder. In this ſtate it is not white, owing to its ſlight tranſparency, but it becomes white when finely powdered. It diſſolves in about 2.5 times its weight of water at 60°, and is much more ſoluble in boiling water. The ſolution affords cryſtals of a plumous appearance, which, when cloſely examined, are long ſix-ſided pyramids. If expoſed to the temperature of 600° it quickly riſes in white fumes, giving a white appearance to the ſurface on which it condenſes. If the oxyds of copper or iron be preſent, they riſe with the ſalt, forming what have been thought triple compounds. The latter is known in the old pharmacopeias by the name of *Flores Martiales*. This ſubſtance is doubtleſs a combination of oxymuriatic acid with iron, or, according to Dr. Thomſon's Nomenclature, a *chlorite of iron*. It is the great facility which this ſalt poſſeſſes of carrying off the oxyd of copper and iron, that renders it ſo valuable in the ſoldering of metals. No ſooner do the white fumes begin to riſe, than the metal diſplays a bright ſurface, and at the ſame inſtant the ſolder flows very freely. Sal ammoniac is alſo uſed in dyeing for giving brightneſs to ſeveral colours.

The compoſition of this ſalt, according to the moſt modern analyſis, is 51 acid, 32 ammonia, and 17 of water, in 100 parts.

SAL *Ammoniac*, in the *Materia Medica*, an inodorous ſalt, of a ſalt, bitteriſh, acrid, and cool taſte, perſiſtent in the air, rather ductile, and not very eaſily reduced to powder. Its ſpecific gravity is 1.42. It requires, ſays Thomſon, 3½ times its weight of water at 60°, and its own weight at

212°, to diſſolve it; and it is alſo ſoluble in 4.5 parts of alcohol. Its component parts, according to Kirwan, are 28 parts of ammonia, 42.75 of acid, and 29.25 of water. The ſulphuric and nitric acids unite with its alkali, and ſet free the muriatic acid. Potaſs and its carbonate, carbonate of ſoda, lime, chalk, magneſia, and carbonate of magneſia, combine with its acid, and ſet free the ammonia; ſuper-acetate of lead, when added to a ſolution of it, throws down a precipitate of muriate of lead; hence theſe ſalts are incompatible in preſcriptions with muriate of ammonia.

This ſalt was formerly conſidered as a powerful aperient and attenuant of viſcid humours, acting as a diaphoretic, diuretic, purgative, and emetic, according to the mode of its exhibition, or its doſe; but it is now (ſays Thomſon) ſcarcely ever ordered as an internal medicine. The liberal and continued uſe of it, according to Boerhaave, renders the blood ſo thin as to burſt through the veſſels, particularly thoſe of the lungs and the urinary organs. In doſes of half a drachm, or a drachm, diſſolved in water, if the patient is kept warm, it generally proves ſudorific; by moderate exerciſe, or walking in the open air, its action is determined to the kidneys; in larger doſes it looſens the belly.

The firſt who gave ſal ammoniac internally was Platerus; but its uſe in fevers was not then known; he only uſing it in aſthmas. In ſucceeding times it became known as a febrifuge. It was frequently uſed with this intention in Germany and Holland, and with great ſucceſs. The common doſe to a grown perſon was one drachm; the largeſt doſe, in caſes of the moſt robuſt conſtitutions, was two drachms. A perſon of eleven or twelve years old might take two ſcruples, and an infant of a year old, fourteen grains. Its chief virtue was thought to be manifeſted in intermittent fevers, in which it may be thus given. Let the doſe of ſal ammoniac, proportioned to the age and ſtrength of the patient, be diſſolved in an ounce of common water, or of any diſtilled water; and let the patient take it half an hour before the time that the fit is to come on. This is to be repeated in the ſame manner, before every fit, till the diſtemper is removed.

Though the great uſe of this medicine was in intermitting fevers, it was thought, however, not adapted only to thoſe, but to be of uſe in fevers of other kinds. The ſame doſe was recommended to be taken every five or ſix hours, drinking a baſon of ſage-tea after it. It very frequently ſucceeded ſo well, that one doſe of it carried off the diſeaſe, ſo that it never returned again; but if the firſt doſe did not ſucceed in this manner, a few others were thought to be effectual. Two, three, or four doſes, almoſt always proved ſufficient. This medicine has no viſible effect upon the body, more than the ſudden removal of the ſickneſs; for it neither operates by vomit, nor by ſtool, nor by ſweat; its effect ſeems to be owing to the correcting and altering of the matter of the diſeaſe, not the evacuating it out of the body.

The bark was deemed ſuperior to this ſalt in the cures of quartan agues, and indeed in other caſes it is more certain in the ſtopping of a ſecond fit; but in this there was ſaid to be another advantage which the bark was ſuppoſed to want; this is the prevention of relapſes. Theſe are very frequent after cures in the common way, but it is ſaid they are ſcarcely ever found to follow in caſes when this ſalt has been uſed.

Another advantage of this medicine is ſaid to be the ſmall quantity of the doſe, and the few doſes that are neceſſary to be taken for a cure; whereas every one knows how many large doſes of the bark are neceſſary, and that often at ſuch ſmall diſtances of time, in caſes, that it is often difficult to perſuade the patient to be cured at the expence of ſo nauſeous a load of medicines. (Act. Erudit. 1717.) Dr. Lewis obſerves, that in many caſes, as an aperient, it is an excellent aſſiſtant to the bark, where that aſtringent drug would by itſelf produce dangerous obſtructions, or aggravate thoſe already formed.

This ſalt is advantageouſly employed, externally, as a fomentation, on account of the cold produced by its ſolution in water, to abate the pain and heat of inflammation, and to allay violent head-ache; alſo in caſes of mania, plethoric apoplexy, injuries of the head; and to aſſiſt in the reduction of hernial tumours. Its ſtimulant qualities render it an excellent diſcutient, when diſſolved in the proportion of ℥j of the ſalt in f℥ix of water with f℥j of alcohol, in indolent tumours, gangrene, pſora, and chilblains; and as a gargle, it is occaſionally uſeful in cynanche, and in attenuating and diſſolving thick mucus in the mouth and fauces. Saturated ſolutions of it are ſaid to conſume warts. Lewis Mat. Med. Thomſon's Diſp.

For its officinal preparations, ſee AMMONIACAL *Preparations*, and *Ammonia*, &c. under the article SALTS.

SAL *Ammoniac, Native*, Naturlicher ſalmiak, Werner, in *Mineralogy*, a ſubſtance of a greeniſh-white colour, paſſing to apple-green, or browniſh-black. It occurs in thin ſuperficial effloreſcences, or maſſive, or ſtalactical, or rarely in minute imperfect cryſtals; and has in general a ſlight vitreous luſtre. Its fracture is fine-grained, uneven; ſoft, and often friable. It has a pungent bitter ſaline taſte. In chemical characters it agrees with the manufactured ſalt. It is found ſublimed in the crevices of volcanoes; ſuch as Ætna, Veſuvius, the Solfatara, and the Lipari iſlands. Aikin's Dict.

SAL *Ægypti*, in *Natural Hiſtory*, a name given by Hippocrates, and many other of the old writers, to the *natrum* of the ancients, called alſo *nitrum* by ſome, though very different from our nitre. It had the name *natrum* from Natrium, or Nitrium, the name of a city of Egypt; and therefore this, as well as the name uſed by Hippocrates, ſtood for Egyptian ſalt. See NATRON and CARBONATE *of Soda*.

SAL *Aquarum*, a name given by many of the ancient writers to the nitre of the ancients, or *natron*; which ſee.

They had this ſalt principally from Egypt, and called it in their works the produce of the evaporated waters of the Nile; for this reaſon Hippocrates ſometimes calls it *ſal Ægypti*, and ſometimes *ſal in aquis creſcens, a ſalt growing in the water.*

SAL *Catharticus Amarus*, the bitter purging ſalt, commonly called EPSOM *Salt*, (which ſee,) which was firſt made by Dr. Grew by evaporating Epſom waters.

This ſulphate of magneſia, or bitter purging ſalt, is found native in a pure ſtate; but more commonly combined with gypſum, and in ſolution in ſea-water, and ſeveral mineral ſprings, as ſtated under the article EPSOM *Salt*. For many years paſt, the whole quantity of it uſed in this country has been manufactured from bittern, or the reſidual brine after the cryſtallization of ſea-ſalt. This ſubſtance conſiſts chiefly of muriate of magneſia, muriate of lime, ſome common ſalt, and a ſmall portion of ſulphate of lime; and therefore the ſulphate of magneſia is probably obtained by decompoſing the muriate by means of ſulphate of iron, or ſulphuric acid in ſome form, though, as ſome ſay, the bittern is only boiled down to a high point of concentration; when the ſulphate of magneſia forms, and is purified by a ſecond ſolution and cryſtallization. The ſulphate of the ſhops generally contains ſome muriate of magneſia; and ſhould therefore be preſerved in jars, cloſely covered. For its chemical properties, ſee *Sulphate of* MAGNESIA. Its ſpecific gravity is 1.66. As it is decompoſed by the alkalies and their carbonates, lime-water, the muriates of barytes and lime, nitrate of ſilver, and acetate and ſuper-acetate of lead, of courſe theſe are incompatible with it in preſcriptions.

With regard to its medical properties, this ſalt is purgative and diuretic; it operates readily without griping; and notwithſtanding its nauſeous taſte, it is generally retained by the ſtomach, more eſpecially when given in ſmall doſes largely diluted, or united with an acidulated infuſion of roſes. In theſe forms it is a very uſeful purgative in hypochondriaſis, colica pictonum, ileus, puerperal fever, and in all acute diſeaſes. It is alſo uſed as an adjunct to ſtimulating clyſters. By moderate exerciſe in the open air, while taking this ſalt, its purgative effect is diminiſhed, and its diuretic property increaſed. The doſe is from ʒj to ʒij diſſolved in water, gruel, or any other vehicle; and taken either at once, or in divided doſes frequently repeated. See Carbonate *of Magneſia*, and Magnesia.

Sal *Catharticus Glauberi*. See Sal *Mirabile*, and *Sulphate of* Soda.

Sal *Circulatum*, in *Chemiſtry*, a term uſed by Paracelſus for a preparation of ſea-ſalt, of which he diſtinguiſhes two kinds, under the names of the *circulatum minus*, and *circulatum majus*. Theſe ſeem to have a great affinity with the famous alkaheſt, or univerſal ſolvent, ſo much talked of in the works of this author, and his ſucceſſor Van Helmont. Many ridiculous properties were attributed to it. See Alkahest.

Sal *Communis*. See Salt.

Sal *de Duobus*. See Arcanum *Duplicatum*, *Vitriolated* Tartar, and *Sulphate of Potaſh*, under Salts.

Sal *Decrepitatum*. See *Common* Salt.

Sal *Diureticus*, a form of medicine, of the nature of the *terra foliata tartari*, introduced into practice by the College diſpenſatory of 1745. See *Acetate of Potaſh*, under Salts.

Sal *Enixum*. See Enixum *Sal*, and *Super-ſulphate of Potaſh*, under Salts.

Sal *Gemmæ*. See Rock-*Salt*, Salt, and *Muriate of* Soda.

Sal *Jamblici*. See Jamblici *Sal*.

Sal *Lucidum*, a name given by ſome to nitre. Others uſe the phraſe to expreſs the nitre of the ancients, that is, the natron.

Sal *Marinus*. See Salt.

Sal *Marinus*, in *Ichthyology*, the name of a truttaceous fiſh of the umbla kind, and very much approaching to that ſpecies called the *reutele*; and by ſome ſuſpected not to be eſſentially different from that ſpecies. It is a very ſcarce fiſh, and is extremely valued for the table, but is never caught in any plenty, never keeping in ſhoals as many other fiſh, but living ſingly. It loves clear ſtony rivers of a ſharp current, and feeds on ſmall fiſh. Its moſt frequent ſize is of about a pound weight, and it very rarely exceeds twice that. Its tail and fins are very red; its ſides and belly reddiſh, and its back of a ſort of orange-colour or reddiſh-yellow, having ſome yellow ſpots; its ſcales are moderately large, and do not eaſily fall off in rubbing.

The ſal marinus is diſtinguiſhed by Artedi by the name of the forked-tail ſalmon, with a yellowiſh back, and with yellowiſh ſpots. See Salmo.

Sal *Marinus Regeneratus*, in *Chemiſtry*, the name given to a ſea-ſalt, produced by adding a fixed vegetable alkali to marine acid, or the acid ſpirit of ſalt drawn by diſtillation. The proceſs is thus: dilute four ounces of oil of tartar, with three times its weight of fair water; put this mixture into a tall glaſs body, and heat it, and drop into it any of the kinds of ſpirit of ſea-ſalt, whether Glauber's, or that prepared with bole; ſhake the veſſel now and then, and continue to drop in the acid till the alkaline liquor is ſated, and there riſes no more efferveſcence; filter the liquor, evaporate to a pellicle, and ſet it by to cryſtallize, and there will be procured cryſtals of perfect ſea-ſalt, in all things agreeing with common ſalt. See *Muriate of Potaſh*, under Salts.

This ſalt has been denominated the febrifugal ſalt of Sylvius; though it does not ſeem to deſerve the name. However, in proper doſes, it may, as a purgative and antiſeptic, contribute to the cure of ſome fevers; qualities which it poſſeſſes in common with other neutral ſalts. But it is not now employed.

Sal or *Vitriolum Martis*, *ſalt of iron*, a chemical preparation, now called *ſulphate of iron*. See Iron, in the *Materia Medica*.

This ſalt is one of the moſt powerful preparations of iron; it is tonic, emmenagogue, and anthelmintic. It has been given with advantage in diabetes, in the latter ſtage of phthiſis, and in amenorrhœa, depending on a weakened action of the blood-veſſels. The doſe is from gr. j to v, combined with ammoniacum, rhubarb, myrrh, or bitter extracts; improper doſes of this ſalt occaſion pains of the bowels, nauſea, and vomiting, and by being too long continued, it proves hurtful. It has been lately uſed, diſſolved in water, as a lotion to cancerous and phagedenic ulcers. Thomſon.

Sal *Microcoſmicus*. See Phosphorus and Urine, and *Fuſible* Salt, &c.

Sal *Mirabile*, or *Glauber's ſalt*, is compoſed of the vitriolic acid of the mineral alkali natron, and is now called "natron vitriolatum." It has been uſually prepared by adding to ſea-ſalt equal or half its weight of oil of vitriol, diluted with water, diſtilling off the marine acid, and diſſolving and cryſtallizing the reſiduum. Though this be a well-known preparation, and the reſult of a mixture of a vitriolic acid with marine ſalt, and the world has ſuppoſed it could be no other way found than by ſuch an union made by art; yet M. Hellot has communicated to the Academy of Sciences at Paris an account of its being found in vitriol alone, without the addition of any foreign matter.

M. Lemery has ſhewn, that after a moderate diſtillation of green vitriol, a ſalt of the nature of alum may be drawn by a lixivium from the colcothar; and beſide this, M. Hellot has found in that colcothar a vitrifiable earth, and a genuine "Glauber's ſalt." Mem. de l'Acad. Scien. Par. 1738.

Glauber's ſalt may be obtained from borax, by mixing oil of vitriol with it. Mix four ounces of borax with one ounce and one drachm of oil of vitriol; upon ſublimation, this gives the ſal ſedativum of Homberg, and the reſiduum, expoſed to a ſtrong fire, affords Glauber's ſalt. This operation may be ſhortened very much, for inſtead of ſublimation, the ſalt may be obtained by cryſtallization, in light foliated laminæ. This ſalt, whether prepared by ſublimation, or by cryſtallization, has the property of diſſolving in ſpirit of wine; and if the ſpirit of wine be ſet on fire, the flame is green. Spirit of wine has no effect on borax, and the oil of vitriol digeſted with it does not make its flame green; therefore it is neceſſary, in order to give this greenneſs to the flame, that borax ſhould be united to an acid. Phil. Tranſ. N° 436. p. 89.

And, in general, Glauber's ſalt may be obtained from all vitriolic ſalts with earthy or metallic baſes, by decompoſing them with ſoda; and alſo by burning ſulphur with common ſalt, or ſoda.

Sal mirabile may likewiſe be obtained by the following proceſs; powder calcined kelp in an iron mortar, put it into a glazed earthen pan, and pour upon it boiling water, in the proportion of a quart to a pound; ſtir it about, and either filtrate or decant the clear liquor from the ſediment; put this liquor into a glazed earthen diſh, and having heated it over a gentle fire, pour in gradually oil of vitriol, diluted (*viz.* to every pound of oil allowing a pint and a half of water) till no efferveſcence ariſes; and having thus gained the exact point of ſaturation, filtrate through paper, or let it ſtand to depurate, and decant the clear liquor; evaporate it to a pellicle, and ſet it by to cryſtallize. By the above proceſs eight ounces and a half of the ſalt have been procured from a pound and a half of kelp; and ſomewhat leſs than two ounces of the oil of vitriol was found ſufficient for the ſaturation. Mr. Fergus, who deſcribes this proceſs, obſerves that it may be alſo had from barilla inſtead of kelp, but not ſo cheap.

Glauber's ſal mirabile was long thought to be the produce of art only; but of late years, a natural ſalt, perfectly ſimilar to Glauber's, has been found in many places. We have a full account, by Mr. Boulduc, of a ſubſtance of this kind, which had been found near Grenoble in Dauphiné. The ſame gentleman alſo found a ſal mirabile in the waters of Paſſy. The true Epſom ſalt, deſcribed by Dr. Grew in 1696, is alſo either the ſame as Glauber's, or at leaſt Glauber's is the principal part of it. Stahl afterwards found a true Glauber's ſalt in the acidulæ, or ferruginous waters, and he did not ſcruple placing this among the natural mineral ſalts. Hoffmann alſo found a ſpring of very bitter and purgative mineral water, a pound of which contained two drachms of this ſalt. The cathartic ſalt, found near Madrid, is alſo of the ſame nature; and it may be obſerved in general, that though it differs from Epſom ſalt, it is contained in ſea-water, and many mineral waters. See Hiſt. de l'Acad. Par. 1727, p. 29, 30; and the Memoirs of the ſame year, 4to. p. 375.

It is to be obſerved, that though Glauber made his ſalt known about the middle of the preceding century, yet Kunckel, in his Laborat. Chymic. aſſures us it was known in the electoral houſe of Saxony a hundred years before. However this be, we owe the knowledge of it to Glauber, who called it *admirable;* and it ſoon acquired, and has ever ſince maintained, the reputation of an excellent internal medicine in many caſes. Its medicinal qualities are nearly the ſame with thoſe of the *ſal catharticus amarus,* which frequently ſupplies its place in the ſhops. For a further account of this ſalt, now known under the appellation of *Sulphate of* SODA, ſee that article.

SAL *Muriaticus Calcareus,* is a combination of the marine acid with calcareous earths, which forms a very pungent ſaline compound, that aſſumes with difficulty a cryſtalline form, deliquiates in the air, diſſolves not only in water but in rectified ſpirit of wine, and changes the colours of blue flowers of vegetables to a green. This ſalt is contained, in conſiderable quantity, in ſea-water, and remains fluid after the cryſtallization of its other ſaline matters; and it is found alſo in many common waters, to which, like the calcareous nitre, it communicates a greater or leſs degree of hardneſs and indiſpoſition to putrefy, according to its quantity. It is much more antiſeptic than the perfect marine ſalt, and is ſaid to be diuretic and lithontriptic. The medicine, commonly ſold as a lithontriptic, under the name of *liquid-ſhell,* appears to be no other than a combination of this kind, conſiſting of calcined ſhells diſſolved in marine acid. Theſe combinations have been chiefly prepared, by mixing the calcareous earth with ſal ammoniac, and urging the mixture with a gradual fire, till the volatile alkali of the ſal ammoniac is either diſſipated in the air, or collected by diſtillation, and only its acid left incorporated with the earth; and ſo much of the earth as is ſatiated with the acid, may be ſeparated from the reſt by elixation with water. Lewis. See MURIATE *of Soda,* and SODA.

SAL *Nitrium.* See NATRON.

SAL *Petræ,* or *Nitri.* See SALTPETRE, NITRE, POTASSÆ *Nitras,* and *Nitrate of Potaſh,* under SALTS.

SAL *Polychreſt of Seignette,* a ſoluble tartar made with ſal kali, inſtead of ſalt of tartar; or it is ſulphate of potaſh, combined with a very ſmall portion of ſulphur, formerly uſed in medicine. M. Boulduc deſcribes this ſalt in the Mem. Acad. Scienc. 1731. See RUPELLENSIS *Sal,* and *Sulphate of Potaſh,* under SALTS.

SAL *Prunellæ* is nitrate of potaſh, from which the water of cryſtallization has been expelled by fuſion. See PRUNELLÆ, and CRYSTAL *Mineral.*

SAL *Rupellenſis.* See RUPELLENSIS *Sal,* and *Tartrite of* POTASS and SODA.

SAL *Sedativus of Homberg.* This uſed to be made by diſſolving borax in water, into which oil of vitriol was poured, and then diſtilling this mixture, quieting ſalt was obtained. M. Geoffroy has lately taught us an eaſier way of preparing it; he evaporates the liquor to the proper conſiſtence, and then allows it to cryſtallize. See *Sedative* SALT, and SAL *Mirabile.*

SAL *Tartari.* See TARTAR.

SAL *Vegetabilis,* is obtained by diſſolving vegetable alkali in boiling water, in the proportion of a pound to a gallon, and then adding refined tartar, till a freſh addition occaſions no farther efferveſcence; the liquor is then filtered while hot, and either cryſtallized or evaporated to dryneſs.

SAL *Volatile.* See CARBONATE *of Ammonia,* and *Ammonia,* &c. under SALTS.

SAL *Volatile Oleoſum,* is the name of an aromatic volatile liquor firſt prepared by Sylvius de la Boe, and found a very notable medicine, chiefly as a cephalic and cordial.

It is made thus: to an ounce of volatile ſalt of ſal ammoniac, diſtilled with ſalt of tartar, and dulcified with ſpirit of wine, put a drachm and a half of ſome aromatic oil, or eſſence, drawn from ſome generous aromatic vegetable; as cinnabar, cloves, roſemary, baum, &c.; and when the ſpirit and oil are well ſtirred and incorporated together, draw off the volatile ſalt and ſpirit in a cucurbit. Some, inſtead of this, mix all the ingredients together at firſt; *viz.* the ſal ammoniac, ſal tartari, ſpirit of wine, and powder of cinnamon or cloves, with other aromatics, and diſtil off the volatile ſpirit and ſalt at once; but the former way is preferred.

The College of London formerly ordered a quart of the dulcified ſpirit of ſal ammoniac, two drachms of eſſential oil of nutmegs, the ſame quantity of eſſence of lemons, and half a drachm of oil of cloves, to be diſtilled together with a very gentle heat. That of Edinburgh directed an ounce and a half of oil of roſemary, an ounce of oil of amber, and half an ounce of eſſence of lemons, to be put to eight ounces of the volatile ſalt of ſal ammoniac, and a gallon and a half of French brandy, and near a gallon to be drawn off in the heat of a water-bath. See SPIRIT *of Ammonia,* &c.

SAL, in the *Hiſtory of Gems,* a term uſed by Pliny and the ancients, to ſignify a defect or flaw, which took off very much from the value of the gem. Martial having occaſion to mention this ſort of blemiſh in cryſtal, calls it *nitrum* inſtead of *ſal.*

"Et turbata levi queſtus cryſtallina nitro."

The critics have ſometimes changed this word *nitro,* to *vitro,* and others have made the confuſion yet greater, by ſuppoſing that the poet did not mean rock cryſtal, but cryſtalline glaſs; but theſe are all errors. It is plain, by what Pliny and others have ſaid on the ſame ſubject, that the author means here the ſame that others do by the word ſal. This was a duſky and duſty foulneſs, ſeemingly compoſed of a quantity of ſaline particles, ſhooting into their forms within the body of the cryſtal. The gems in general were ſubject to this blemiſh; and we find, in particular, that the emerald was frequently debaſed by it.

It is found at this time, indeed, that cryſtal is much more ſubject to it than any of the gems; but as the Romans called all the green cryſtals found in the copper mines of

Cyprus by the name of emeralds, it is eaſy to conceive, that the emerald, as they underſtood the word, muſt be frequently ſubject to it. The poets uſing the word *nitrum* inſtead of *ſal*, is not wonderful; for the Greeks called common ſalt *halonitrum*, ſo that the words ſeem almoſt ſynonimous.

SALA, Nicola, in *Biography*, one of the moſt learned contrapuntiſts of the Neapolitan ſchool. This venerable maſter, Duranti's diſciple and ſucceſſor in the conſervatorio della Pietà de Terchini, drew up, during forty years' ſtudy and experience, a regular and well-digeſted ſyſtem of counterpoint, or practical harmony, for the uſe of the conſervatorio over which he preſided; but when he had finiſhed it, he found himſelf unable to ſupport the expence of the impreſſion. Having, however, made his caſe known to the late ſir William Hamilton, who was well acquainted with his worth, and the eſtimation in which he ſtood for muſical ſcience with all the Neapolitan maſters, he undertook to repreſent to his Sicilian majeſty how uſeful a work it would be in forming young compoſers, and continuing that reputation which Naples had long ſo juſtly enjoyed for producing the greateſt number of eminent compoſers which Italy could boaſt. The king graciouſly condeſcended to be at the whole expence of printing Sala's Treatiſe at the royal preſs, in the moſt ſplendid manner. And this moſt valuable work was publiſhed in 1794.

What became of the copies of this impreſſion, or the plates, we know not, during the anarchy in which Naples was thrown by the arrival of the French in that city; but we believe there is at preſent no other copy in England than that now before us, for which we are indebted to the munificent kindneſs of lord and lady Bruce, who brought it from Naples with pictures and other valuable books and antiques, which miraculouſly eſcaped from all the perils of war and revolution.

This excellent author teaches more by example than precept. His rules are few, and without exceptions. His examples are chiefly *à cappella*; but they contain all that is neceſſary, except novelty and invention, which no books can teach. Peruſing and hearing the works of the greateſt maſters, meditation, practice, and trying effects, will ferment ideas if the ſeeds are planted by Nature, and qualify a ſtudent for compoſing ſuch muſic as generally pleaſes, yet it muſt not be without novelty, and ſcience ſufficient to attract the notice of able maſters.

Sala does not write on canto fermo ſo much as on the ſcale, which is in fact writing on the règle de l'octave, and which extends the uſe of his work to ſecular muſic, while Fouchs and P. Martini confine their labours wholly to ſacred compoſitions, built on fragments of ancient chants.

As this work will be of difficult attainment, we ſhould wiſh to give our muſical readers ſpecimens of the author's ſcience in every ſpecies of learned and ingenious compoſition, at the knowledge of which a young contrapuntiſt can aſpire; but it would require more plates than our plan allows to any one article, or indeed entire branch of ſcience; we muſt therefore content ourſelves, and, we hope, our readers, by deſcribing his method, and the arrangement of his materials, which have been ſo ſucceſsfully uſed in the firſt muſical ſeminary at Naples, the moſt celebrated ſchool of counterpoint in Europe.

Analyſis of Sala's Rules of Counterpoint.—He allows four concords, the 3d, 5th, 6th, and 8th; two perfect, the 5th and 8th; and two imperfect, the 3d and 6th. Four diſcords, the 2d, 4th, 7th, and 9th. The $\substack{4\\2}$ are uſed on a binding note in the baſs, and reſolved by the baſs deſcending one degree, when the 2d becomes a 3d, and the 4th a 5th, amounts to the 6th. The 7th and 9th are prepared and reſolved in the treble. The 7th is prepared in all the concords, and generally reſolved on the 6th to the ſame baſs, but on the 5th, if the baſs, inſtead of falling a 5th, riſes one degree. See *Diſappointed* Cadence.

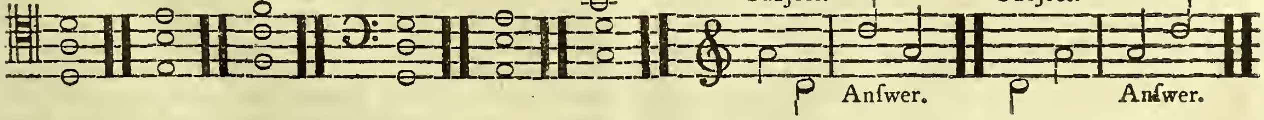
He begins by cadences in two, three, and four parts, ſimple, compound, and double. Then gives a treble to the ſcale in the baſs, and a baſs to the ſcale in the treble. After which, two trebles to each note of the ſcale in the baſs; then the ſame two notes in the baſs to one in the treble. He next gives three and four notes to one in both ſcales. After this, we have 7ths reſolved into 6ths in binding notes to the ſcale in the baſs. Then 2ds in the treble, while the baſs has driving or binding notes. This is the beginning of double counterpoint. Afterwards 5ths into 6ths, to avoid a *ſucceſſion of 5ths*, ſo ſtrongly prohibited in all elementary works in compoſition of thorough-baſs. Sevenths into 6ths again to the ſcale in both parts. He then gives examples in three and four parts, of the different uſe of the 2d and 9th, and examples of the $\substack{6\\5}$, with ſcales, firſt in plain counterpoint; then giving four crotchets to each part alternately, to ſemibreves in the other parts.

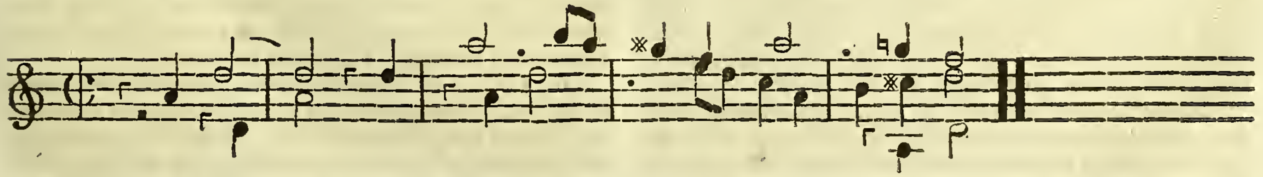
He next proceeds to binding notes in one of four parts, by turns. Double ſcale in canon, the other two parts moving in different melodies. Two parts in ſcale, aſcending, the other two parts moving in melody by 3ds. Three parts in florid counterpoint, and one in ſcale. A movement *fugato* in ſcales of two parts. *Genere chromatico alla moderna*, to a ſcale in five parts: five examples.

Rules for double counterpoint, *alla decima, ed alla duodecima*, or in the 10th and 12th. Examples of double counterpoint on canto fermo in two parts; three parts, two in canon. Four parts, *l'iſteſſo moda*. Two parts, ſometimes three, in canon. Then three parts in imitation, and one in diviſion. In five parts. In ſix parts.

The ſecond volume begins with ſhort examples of *canon* in every interval, from the 2d to the 9th, in two parts. Followed by examples of *imitation per moto contrario*.

Principles of fugue, nearly the ſame as Dr. Pepuſch gives from the authentic and plagal modes of the church. See Authentic and Plagal.





If the ſubject begins on the 8th, the anſwer ſhould be on the 5th, and *è contra*.

Fugues on two and three ſubjects. Fugues in *moto contrario*, or contrary motion, and various ingenious and artificial contrivances in two parts, to p. 11. Then the method of writing two parts upon the ſcale of a prolated baſs. After which two trebles perform the ſcale in 3ds, and the principal treble is given to the baſs. Seven different ways of diſpoſing the parts in fugues of three parts, to p. 14. Then fugues of all kinds in three parts. Ditto in four parts, with rules for bringing in the anſwers, and inverting ſubjects, p. 24 to 33. Then follow ſtudies of fugues in four parts of every kind, to p. 43. When a method is given of anſwering ſubjects of fugue in contrary motion, and direct. This laſt ſection is given for ſtudy, not for uſe. A maſs, motet, ſervice, or anthem of this kind, would be too elaborate for a common choir to perform, or a common congregation to hear with pleaſure. Each movement of theſe examples is a curioſity; uſeful in the peruſal to ſtudents, and amuſing to maſters. To all the examples of fugue in four parts, on one, two, three, and four ſubjects, from p. 33 to 73, there are Latin words from the Roman Miſſal. All theſe examples are treated with great ingenuity, clearneſs, and ſcience. It is true that nothing like taſte or fancy appears in this work, which perhaps have no buſineſs in ſacred muſic; but all theſe examples are excellent foundations, on which taſte and fancy may be built with convenience and ſafety.

At p. 72 begin rules for the diſpoſition of the parts in fugues for two ſopranos or trebles, a counter-tenor, tenor, and baſs, in ſix different ways; in which we have examples of *augmentation* and *diminution*, or what Morley calls, "prolation of the more and prolation of the leſs."

From p. 80 to 116, examples of fugue, canon, and other kinds of learned counterpoint, in five parts, are curious ſtudies for young muſicians. After which there is a fugue in eight parts, or for two choirs, at p. 122, written with great clearneſs and harmonical accuracy. After which a fugue in eight parts, *concertata e ricercata*, with different and more rigid ways of treating the ſubject in the firſt and ſecond chorus. Then another fugue in eight parts on four ſubjects, which are reverſed. P. 127. Introduction in canon to canto fermo, and the canto fermo in canon, with the anſwer in the 4th above, with the two other parts likewiſe in the 4th above. P. 129. Canto fermo in canon à 4, with a moving organ-baſs. P. 134. Canto fermo concertato, *in due maniere*, or two ways.

Antifona à 5 concertata. P. 141. The ſame canto fermo, concertato à 5. Then follows, p. 143, a pſalm in five parts, which the author compoſed in 1745, when a candidate for the place of maeſtro di cappella in the chapel royal at Naples.

P. 145. Canto fermo in the 4th eccleſiaſtical tone, upon which is built a ſhort movement to a pſalm, concertato, in five parts.

P. 150. Canto fermo in the 7th tone, and in the 5th eccleſiaſtical tone, à otto. P. 153. Canto fermo in the 5th tone, concertato à otto, with two organ-baſſes in canon.

P. 159. Canons in the uniſon, 2d, 3d, 4th, 5th, 6th, and 7th, which are reverſed in two parts, and in moto contrario.

Chromatic canon in two parts; in four parts, with the anſwer in prolation, or notes of double value. After which nine canons in three parts. Then canon upon canon, in four parts, all' ottava, *per moto contrario*, p. 168. Ditto with a moving baſs, p. 170. Another, all' ottava, with a ſimilar baſs. Canons in triple time of two parts: in uniſon, all' ottava, in moto contrario, p. 175. Then *canone chiuſo*, or a cloſe canon, written not in ſcore, but on one ſtaff, with ſigns or numbers to indicate when the ſeveral parts come in, p. 176. Then the ſame canon opened or ſcored.

This is followed by five more myſterious canons on one line, and explained and ſolved in a ſcore of four lines. Then canon upon canon, with a *coda*, or tail-piece. After which p. 179, et ſeq. very curious and artificial canons in three, four, five, and ſix parts. Other canons in ten parts. And, finally, a canon, of which the ſcore occupies fourteen ſtaves, eight for the two choirs, four for the intonation ſwelled out à pedale, in uniſons and octaves, and two for organ-baſſes, in perpetual imitation, bar for bar.

Upon the whole, theſe are not only the moſt ample, complete, and beſt digeſted rules of counterpoint, without violating the ancient laws of modulation, but the volumes are the moſt magnificent in ſize, and engraved on copper plates, in the largeſt, cleareſt, and moſt elegant character, of any muſical publication which we have ever ſeen.

SALA, in *Ancient Geography*, a river and town on the weſtern coaſt of Africa, in Mauritania Tingitana, according to Pliny, 50 miles from the river Ibur.—Alſo, another river of the ſame country, belonging to the Greater Atlas, 6° 50′ more ſoutherly than the preceding, according to Ptolemy.—Alſo, a town of Hiſpania, in the interior of Bœtica, in the country of the Turduli, between Tucci and Balda. Ptolemy.—Alſo, a town of Upper Pannonia, ſituated near Patavium, according to Ptolemy.—Alſo, a town of Aſia, in the Greater Armenia. Ptol.—Alſo, a town of Thrace, ſituated to the eaſt and at the mouth of the Hebrus, in a canton named Doriſca, according to Herodotus, who gave to this nome the epithet of Samothracian, becauſe it lay in a part of the continent inhabited by the people of the iſle of Samothrace.—Alſo, a town of Aſia Minor, in Greater Phrygia, between Pylacæum and Gazena, according to Ptolemy.—Alſo, a town of Hyrcania, called alſo *Sale* and *Sace*. Ptol.

SALA, in *Geography*, a town of Africa, in the kingdom of Tombuctoo; 140 miles N.E. of Tombuctoo.—Alſo, a town of the duchy of Parma; 3 miles S.S.W. of Parma.

SALA, *La*, a town of France, in the department of the Dora; 11 miles W. of Aoſta.—Alſo, a town of Naples, in the province of Principato Citra; 15 miles N. of Policaſtro.—Alſo, a town of Aſiatic Turkey, in the province of Diarbekir; 15 miles S.E. of Heſn Kaifa.

SALA, or *Salberg*, a town of Sweden, in Weſtmanland, near which is a ſilver mine, formerly very productive, and a medicinal ſpring; 28 miles W. of Upſal. N. lat. 59° 55′. E. long. 16° 29′.

SALABIA BAY, a bay on the E. coaſt of Dominica.

SALABIM, or SELEBIM, in *Ancient Geography*, a town of Paleſtine, in the tribe of Dan.

SALACIA, *Alcaçer de Sal*, a town of Hiſpania, in Luſitania, belonging to the Celtici, near the mouth of the river Calipus or Calipos, N.W. of Oliſipo and S.E. of Pax Julia. Ptolemy aſſigns it to the Turdetani.

SALACIA, in *Botany*, a genus known to Linnæus only, who is ſuppoſed to have dedicated it to *Salacia*, the ſpouſe of Neptune. Hence De Theis imagines it to be a native of the ſea-ſhore; for which however we can meet with no authority. We rather apprehend the author of the name had the word *ſalax* in view, and meant to allude to the remarkable proximity of the anthers to the ſtigma, which muſt ſo greatly facilitate the impregnation.—Linn. Mant. 2. 159. Schreb. 607. Willd. Sp. Pl. v. 4. 150. Mart. Mill. Dict. v. 4. Juſſ. 424.—Claſs and order, *Gynandria Triandria*. Nat. Ord. uncertain.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, very ſhort, in five deep, ovate, acute, ſpreading, permanent ſegments. *Cor.* Petals five, roundiſh, ſeſſile. *Stam.* Filaments none; anthers three, of two lobes, divaricated at the baſe, ſeſſile on the ſummit of the germen. *Piſt.* Germen ſuperior, roundiſh, larger than the calyx ; ſtyle very ſhort, between the anthers ; ſtigma ſimple. *Peric.* and *Seeds* unknown.

Eſſ. Ch. Calyx inferior, in five deep ſegments. Petals five. Anthers ſeſſile on the ſummit of the germen. Style very ſhort. Stigma ſimple.

1. S. *chinenſis.* Linn. Mant. 2. 293. Willd. n. 1.—Leaves alternate, entire.—Native of China. A *ſhrub,* with ſmooth, angular, purpliſh, or ſomewhat glaucous *branches. Leaves* ſcattered, remote, about two inches long, oval, rather pointed, entire, ſmooth, ſomewhat coriaceous ; paler beneath ; furniſhed with a mid-rib, ſending off two or three pair of veins. *Footſtalks* thick, channelled, ſmooth, about half an inch in length. *Flowers* ſmall, on ſhort ſimple ſtalks, ſeveral together from each axillary bud, accompanied at the baſe by many downy ſcales. The ſpecimen of Linnæus, from whence he made his deſcription, ſtill exiſting in his writing on the back of the paper, is ſo very imperfect, that, except many flowers were deſtroyed in the examination, it is difficult to conceive how he could obtain ſufficient information from hence. Its affinity to *Stilago* merely relates to the artificial ſyſtem, for we can trace no other ; and this latter ſuppoſed genus is now known to be merely the male plant of *Antideſma alexiteria.*

2. S. *cochinchinenſis.* Loureir. Cochinch. 526.—"Leaves oppoſite, ſomewhat ſerrated."—Native of buſhy places in Cochinchina, where it is called *Cây Tráoc mau.*—Loureiro deſcribes this plant as a *ſhrub,* ſix feet high, nearly erect, with numerous twiſted *branches. Leaves* oppoſite, ſtalked, ovate, ſomewhat pointed, ſlightly ſerrated, ſmooth. *Flowers* ſmall, crowded, axillary, of a yellowiſh-red. *Calyx* coloured. *Style* none. *Stigma* a minute point. *Berry* roundiſh, unequal, reddiſh, of a middling ſize, eatable, of one cell, with three ſmooth roundiſh *ſeeds.*—The reſt of this author's deſcription, particularly the ſituation of the *anthers,* agrees preciſely with the account of the other ſpecies, given above. Loureiro had not ſeen that ſpecies, and was not without a ſuſpicion of his being the ſame plant ; to which its oppoſite and ſomewhat ſerrated *leaves* ſeem to us a ſufficient objection. If his be however of the ſame genus, as appears probable, the generic character might be enlarged with "Berry of one cell, with three ſeeds."

Salacia, or *Salecia,* in *Zoology,* the name of a genus of inſects of the gymnarthria kind ; the body of which is ovato-oblong, and the tentacula are numerous, and diſpoſed in little cluſters.

It is called by different authors *priapus marinus,* and *mentula marina.* This is the ſpecies denominated *Mentula,* under the claſs of *Aſcidia* in the Linnæan ſyſtem.

SALACONIA, in *Ancient Geography,* a place of Africa, in Mauritania Tingitana, between Ad Mercuri and Tamuſide, according to the Itinerary of Antonine.

SALACSAE, in *Natural Hiſtory,* a name given by the inhabitants of the Philippine iſlands to a kind of bird, by whoſe flight they pretend to divine the event of things. All the account we have of the bird is, that it is of a ſmall ſize, and is variouſly coloured, and has a long and large beak.

SALAD, Corn, in *Agriculture,* a plant of the weed kind, met with in tillage-fields, as well as paſture-lands, where the plough has been, but eſpecially in the former, when much exhauſted by cropping. It alſo prevails in ſome places on the bank-ſides of the fences ; but being only annual in its nature, there is but little danger to be apprehended from it. See Weeds.

Salad *Herbs,* in *Gardening,* the different ſorts of eſculent plants from which herbs for ſalads are collected. Theſe, by different ſowings, plantings, &c. are obtained at all times of the year ; but the moſt generally eſteemed ſorts may be compriſed under the heads of large, ſmall, and occaſional ſalad herbs. The firſt of theſe kinds conſiſt chiefly of the different ſorts of lettuces, the different ſorts of endive, and all the varieties of celery, which ſorts are in the beſt perfection for uſe when arrived at the full growth ; any of which may be eaten as a ſalad alone, or all mixed together, or with a proper quantity of ſmall ſalading, eſpecially in winter and ſpring ; as the ſmall ſalading, being of a warm nature, renders the ſalad more grateful and wholeſome. Lettuces are generally eſteemed moſt in ſummer, when full grown and firmly cabbaged, but may be uſed at all ſeaſons. The endive and celery are excellent for autumn and winter ſalads, being in full perfection from September to the end of November, when they are full grown and finely blanched, and often continuing in tolerable perfection all winter and ſpring. See Lactuca, Cichorium, and Apium.

And the ſecond ſorts are creſſes, muſtard, radiſh, rape, and ſome others ; in all of which herbs, the young leaves are the uſeful parts for the purpoſe of ſalad, and are always in beſt perfection when quite young, as a few days or a week old at moſt, while in their firſt leaves, cutting them up, ſtalks and top together, cloſe to the ground ; as when uſed thus quite young they eat exceedingly tender, with an agreeable warm reliſh, but become too hot by age.

The laſt ſorts are principally corn-ſalad, or lamb's lettuce, purſlane, ſpear-mint, water-creſs, borage, and borage-flowers, naſturtium-flowers, and the young leaves, chervil, burnet, and ſometimes red cabbage, radiſhes, red beet-root, finochia, or Azorian fennel, ſorrel, tarragon, young onions, cives, and ſometimes horſe-radiſh, incorporated with other herbs, moſt of which ſorts are occaſionally uſed in compoſition with other ſmall ſalad herbs, and ſome alone as a ſalad, ſuch as red cabbage, water-creſs, young borage, &c. See their reſpective kinds.

SALADA, in *Geography,* a ſmall iſland in the Weſt Indies. N. lat. 10° 58′. W. long. 64° 13′.—Alſo, a river of Chili, which runs into the South Pacific ocean, S. lat. 27° 15′.—Alſo, a bay on the coaſt of Chili, in the Pacific ocean. S. lat. 27° 15′.—Alſo, a river of Spain, which runs into the ſtrait of Gibraltar, E. of Tarifa.

SALADILLA, a town of South America, in the government of Buenos Ayres; 280 miles N.N.W. of Buenos Ayres.

SALADIN, in *Biography.* See Salaheddin.

SALADINE, a tax impoſed in England and France, in the year 1188, to raiſe a fund for the croiſade undertook by Richard I. of England, and Philip Auguſtus of France, againſt Saladin, ſultan of Egypt, then going to beſiege Jeruſalem.

The Saladine tax was thus laid : that every perſon who did not enter himſelf a croiſee, was obliged to pay a tenth of his yearly revenue, and of the value of all his moveables, except his wearing-apparel, books, and arms.

The Carthuſians, Bernardines, and ſome other religious, were exempted from the Saladine. See Salaheddin, infra.

SALAGENA, or Sadagena, in *Ancient Geography,* a town of Cappadocia, in the Sargaranſene territory. Ptol.

SALAGESSA, or Salagisa, a town of India, on this ſide of the Ganges. Ptol.

SALAGRAMA, a ſtone found in a river of Nepaul, and conſidered by many ſects of Hindoos as very ſacred and myſtical. It is an eſſential article in ſeveral of the ſuperſtitious rites and ceremonies of the Brahmans ; it is uſed in propitiatory oblations to Viſhnu, as well as in funeral and other ceremonies. Many ſtones, eſpecially thoſe of a conical form, are deemed myſtically ſacred to Siva ; but the ſalagrama ſeems conſecrated peculiarly to Viſhnu.

Mr. Colebroke informs us (Aſ. Reſ. vol. vii.), that the ſalagrams are found in part of the Gandaki river, within the limits of Nepaul. They are black, moſtly round, and are commonly perforated in one or more places by worms, or, as the Hindoos believe, by Viſhnu, in the ſhape of a reptile. According to the number of perforations, and of ſpiral curves in each, the ſtone is ſuppoſed to contain Viſhnu in various characters. For example, ſuch a ſtone, perforated in one place only with four ſpiral curves in the perforation, and with marks fancied to reſemble a cow's foot, and a wreath of flowers, contains Viſhnu and his conſort Lakſhmi, in that form or combination called Lakſhmi-Narayana, a form in which they are commonly ſeen in images of a diminutive ſize, ſitting on the knee of Viſhnu or Narayana. The ſalagrama is found not to be calcareous : it ſtrikes fire on ſteel, and ſcarcely at all efferveſces with acids.

Sonnerat deſcribes the ſalagrama, we think, very incorrectly, in calling it a petrified ſhell, of the ſpecies *cornua ammonis*. He ſays it is very heavy, commonly black, but ſometimes violet, oval or round, a little flat, nearly reſembling a touch-ſtone, and hollow, (how then can it be very heavy?) with only one ſmall aperture, almoſt concave within, having ſpiral lines terminating towards the middle. Some, he ſays, are ſuppoſed to repreſent the gracious incarnations of Viſhnu, and are then highly prized ; but when they border a little on the violet, they denote a vindictive avatara, ſuch as Naraſingha, when no man of ordinary nerve dares keep them in his houſe. The fortunate poſſeſſor of a ſalagrama preſerves it in a green cloth : it is frequently perfumed and bathed, and the water, thereby acquiring virtue, is drank, and prized for its ſin-expelling property.

The Brahmans and Hindoos, in general, look on this ſtone with much reverence. It is rarely met with in India in vulgar hands. Two of them have recently paſſed under the inſpection of the writer of this article. They are leſs than a ſmall billiard-ball, nearly round; appearing like our common ſiliceous pebble, or one of granite, rendered ſmooth by attrition, and blackened by being ſoaked in oil. They are ſolid, without perforation or aperture.

From general Kirkpatrick's " Account of the Kingdom of Nepaul," we learn that the river in which theſe holy ſtones are excluſively found, is in that part of its courſe where they moſt abound, called Salagrami ; and that the name of Gandaki, by which we have been taught to call it, is, in Nepaul, a general appellation for a river, and not ſpecifically applicable to that in queſtion.

SALAGUA, in *Geography*, a harbour on the W. coaſt of Mexico. N. lat. 18° 50′.

SALAHEDDIN, Yuſef Ebn Ayub, in *Biography*, commonly called *Saladin*, a celebrated ſultan of Egypt and Syria, was born in the year 1137, in the caſtle of Tecrit, of which his father, a Curd ſoldier of fortune, was governor. In his youth he ſerved under his father, and an uncle, named Shiracough, the latter of whom was ſent to aſſiſt the Fatimite caliph Adhed againſt the viſier Shawer. Saladin accompanied his uncle in the expedition, and on his death, in 1168, he was appointed to ſucceed him in the command of the caliph's armies. Previouſly to this he had been greatly addicted to wine and gaming, but the important duties of his ſituation led him to a complete courſe of reformation ; and from this period he rigorouſly obſerved the precepts of the Koran, and wiſhed to be regarded as the hero of his religion. Looking to Noureddin as the ſource of his authority, he followed his intentions in repreſſing the ſect of Ali ; and in 1171, by his order, he put an end to the dynaſty of the Fatimite caliphs in Egypt. The death of Adhed happening at the ſame time, Saladin took poſſeſſion of his treaſures, and though nominally holding the country under the caliph of Bagdat, and in ſubordination to Noureddin, he reſolved to make himſelf independent of both. With this object in view, he ingratiated himſelf with the Egyptians by a mild and prudent government ; and to wean them from the doctrine of Ali, he eſtabliſhed colleges, in which were taught the principles of theology moſt according with his own notions. At the death of Noureddin, he, in point of form, acknowledged Al-Malek, the minor ſon of the late prince, as lawful heir to the throne, but at the ſame time took meaſures to ſeize his dominions, firſt under the pretence of protecting them, and then openly for himſelf. He now appeared in the character of an enemy, and reduced Damaſcus and other places in Syria, and beſieged Al-Malek himſelf in Aleppo, but was not ſucceſsful in that project. He endeavoured to expel the Franks from the maritime parts of Paleſtine, but was entirely defeated at Aſcalon, with the deſtruction of almoſt all his army. By the death of Al-Malek, in 1181, Saladin obtained the full poſſeſſion of Syria, as well as of Egypt, to both which provinces his title as ſultan was confirmed. He now manifeſted an ardent deſire to expel the Chriſtians from Paleſtine, and recover the city of Jeruſalem. His ardour was further inflamed by the deſire of vengeance. A ſoldier of fortune, Reginald de Chatillon, had ſeized a fortreſs on the edge of the Deſart, from whence he pillaged the caravans, inſulted Mahomet, and threatened even the cities of Mecca and Medina. Saladin complained of this infraction of treaties, but ſecretly rejoiced that he was denied that juſtice to which he had a claim, and at the head of 80,000 horſe and foot, he invaded the Holy Land. The choice of Tiberias for his firſt ſiege was ſuggeſted by Raymond, count of Tripoli, to whom it belonged ; and the king of Jeruſalem drained his garriſons for the relief of that important place. By the advice of the perfidious Raymond, the Chriſtians were betrayed into a camp deſtitute of water : he fled on the firſt onſet : Guy of Luſignan, an oppoſing warrior, was overthrown, with the loſs of 30,000 men. The royal captive was conducted to the tent of Saladin, and as he was on the point of fainting with thirſt and fear, the generous victor preſented him with a cup of ſherbet cooled in ſnow, without ſuffering Reginald to partake of this pledge of hoſpitality and pardon. " The perſon and dignity of a king," ſaid the ſultan, " are ſacred ; but this impious robber muſt inſtantly acknowledge the prophet whom he has blaſphemed, or meet the death which he has ſo often deſerved." The warrior diſdained the proffered terms of mercy : Saladin ſtruck him on the head with his ſcimitar, which was a ſignal for his guard to finiſh that which he had begun, and Reginald was immediately diſpatched. Luſignan was ſent to Damaſcus, and was ſpeedily ranſomed ; but the victory was ſtained by the execution of 230 knights of the hoſpital, the intrepid champions and martyrs of their faith. From all the cities, both of the ſea-coaſt and the inland country, the garriſons had been drawn away for the fatal field. Tyre and Tripoli alone could eſcape the rapid inroad of Saladin ; and three months after the battle of Tiberias, he appeared in arms before the gates of Jeruſalem. For a time he peremptorily refuſed all offers of capitulation, and expreſſed a determination to take it by ſtorm. At length, however, finding the inhabitants reſolute in their preparations for a vigorous defence, he agreed that they ſhould evacuate the city, and carry away their effects. Saladin entered the holy capital

in

in great triumph, and fairly executed the conditions of the treaty. From Jeruſalem he proceeded to lay ſiege to Tyre; but the deſtruction of his fleet by the Franks rendered the attempt abortive. The loſs of Jeruſalem excited the utmoſt grief and conſternation among the Chriſtian powers, and the emperor Barbaroſſa, the kings of France and England, with ſeveral other princes, took the croſs, and prepared armaments for the relief of the Holy Land. Succours arrived from various parts of Europe to the Chriſtians in Tyre, by which they were enabled, in 1189, to undertake the recovery of Acre. This attempt recalled Saladin from the purſuit of other conqueſts, and for two years the fields of Acre were the theatre of ſome of the fierceſt conteſts recorded by hiſtory between the followers of Chriſt and Mohammed. In one of the early conflicts the Chriſtians penetrated as far as the ſultan's tent, and made a great carnage. In another, Saladin threw into the city a conſiderable reinforcement. The death of the emperor Frederic, who had arrived with an army in Aſia, inſpired the Mohammedans with hopes, which, however, were conſiderably checked by the news of the approach of the kings of England and France, Richard and Philip, at the head of a mighty hoſt. Upon their arrival, the ſiege was puſhed with ſo much vigour, that Acre, in 1191, ſurrendered to their united arms. Philip, upon this event, returned to Europe; but Richard remained, and after he had twice defeated Saladin, took Cæſarea and Jaffa, and ſpread alarm as far as Jeruſalem. At length a truce was made between the two ſovereigns, by the terms of which the coaſt from Jaffa to Tyre, incluſively, was ceded to the Chriſtians; Aſcalon was left demoliſhed and unoccupied; and the reſt of Paleſtine remained to the ſultan. The departure of Richard freed Saladin from his moſt formidable opponent; but his death by diſeaſe, in 1193, put a period to all the projects which his active ambition might have formed. He died at Damaſcus, at the age of 56; and the loſs of their hero plunged his ſubjects in Syria and Egypt into deep mourning. The unity of the empire was diſſolved by his death; his ſons were oppreſſed by the ſtronger arm of their uncle Saphadin; the hoſtile intereſts of the ſultans of Egypt, Damaſcus, and Aleppo, were again revived; and the Franks, or the Latins, exulted in their fortreſſes along the Syrian coaſt. The chief monument of a conqueror's fame, and of the terror which he inſpired, is the Saladine tenth, a general tax, which was impoſed upon the clergy, as well as the laity, of the Latin church, for the ſervice of the holy war. The practice was too lucrative to expire with the occaſion; and this tribute became the foundation of all the tythes on eccleſiaſtical benefices which have been granted by the Roman pontiffs to Catholic ſovereigns, or reſerved for the immediate uſe of the Apoſtolic ſee.

Saladin was unqueſtionably one of the moſt conſpicuous characters of that period: though chargeable in the outſet of life with thoſe unjuſtifiable methods of obtaining power which the ambitious rarely ſcruple to adopt, but which he only ſnatched from the hands of other uſurpers, he employed his power with great attention to the good of his ſubjects, whoſe burdens he lightened, while he benefited them by a great number of uſeful works and eſtabliſhments. In his private and perſonal expences he was extremely moderate; but in his donations he was magnificent, and was ſo little addicted to hoarding, that the whole contents of his treaſury at his death were a ſingle gold coin, and a few ſilver drachmas. In religion he was a fanatic and intolerant. The only ſtudy which he encouraged was the orthodox theology of his ſect, and he looked with contempt or averſion upon all polite literature and profane ſcience. He was faithful in all engagements, and adminiſtered juſtice with diligence and impartiality. By his virtues he is ſaid to have obtained the eſteem of his enemies. He left a family of 17 ſons and a daughter, and was himſelf the founder of the dynaſty of Ayoubites. Univer. Hiſt. Gibbon.

SALAIGNAC, in *Geography*, a town of France, in the department of the Dordogne; 7 miles N.E. of Sarlat.

SALAKA, a ſea-port of Nubia, on the W. coaſt of the Red ſea. N. lat. 20° 42′. E. long. 37° 5′.

SALAKARI, a ſmall iſland on the E. ſide of the gulf of Bothnia. N. lat. 65° 17′. E. long. 25° 7′.

SALAMANCA, a city of Spain, in the province of Leon, ſituated, in the form of an amphitheatre, partly on a hill, and partly on a plain, on the banks of the Tormes, which bathes a part of its walls, and waters its beautiful plain, and over which is a ſtone bridge, by ſome perſons attributed to the Romans, having 27 arches, and being about 500 feet in length. This is one of the moſt ancient biſhoprics in Spain, ſuffragan to Compoſtella; it has a revenue of 2500*l.* ſterling, and is one of the eccleſiaſtical juriſdictions. This city has a royal adminiſtration, compoſed of a corregidorat, a governor, an alcalde-mayor, common alcaldes, &c. It has a cathedral and collegiate church, compoſed of 26 canons, 25 pariſh churches, 20 convents of monks, ſeveral of nuns, an univerſity, 25 private colleges, four great colleges, ſeveral hoſpitals and penitentiary-houſes, chapels or oratories, hermitages, &c. Several of its churches are magnificent; and ſome of its convents are ſpacious; and though its ſtreets are narrow and dirty, it has many large buildings, and two conſiderable ſquares, many fountains, and a variety of ſtructures and appendages that ſerve to the embelliſhment of a town. Of all the public edifices, the cathedral is the moſt worthy of notice; it is majeſtic, and in the Gothic ſtyle. Its foundation was laid A.D. 1513; but it was not finiſhed till the year 1734. It is 378 feet in length, 181 wide in the clear, 130 high in the nave, and 80 in the aiſles. The whole is beautiful; but the moſt ſtriking part of this church, and of many public buildings in this city, is the ſculpture, which diſplays much taſte, and is well preſerved. Over the principal gate is repreſented, in bold relief, the adoration of the ſages; and over another, the public entrance of Chriſt into Jeruſalem; all appearing as freſh and ſharp as if they were recently put up. Beſides the chief gate, which is finely executed, it has a ſuperb and grand ſteeple, ſurrounded by a broad, commodious, and handſome gallery, where ſeveral people can walk abreaſt. By the ſide of this cathedral, whoſe cloiſter merits inſpection, there is another church, perhaps more ancient, to which the deſcent is by ſteps, and which is much frequented. Before the cathedral is a large ſquare, paved with large ſquare ſtones, and encompaſſed with thick pillars, about ſix feet high, connected by a ſtrong iron-chain, with openings for footpaſſengers. The church of the Dominicans is little inferior to the cathedral in point of ſculpture; it has a repreſentation of St. Stephen ſtoned, with a crucifix above it, all as large as life, and to appearance not injured by the weather. In the year 1030 there was not a ſingle convent in Salamanca; and in 1480, previouſly to the diſcovery of America, they had only ſix for men and three for women; but they have now (ſays Mr. Townſend) thirty-nine. In 1518, they counted 11,000 virgins; but when Mr. Townſend viſited the city, the perſons under vows were happily reduced to 1519. Among the more handſome convents we may mention thoſe of St. Dominic, of St. Bernard, and of Auguſtus. The ancient church of the Jeſuits, now that of St. Marc, deſerves notice; as do alſo the

King's college, built in the reign of Philip II., and the Collegios mayores de St. Bartolomé, particularly admired for its ſize. All the convents and colleges have libraries, and MSS., which are more or leſs valuable. But the eſtabliſhment which merits more particular notice, is the univerſity. It was founded, ſays Townſend, in the year 1200, by Alphonſo IX., king of Leon, and regulated by Alphonſo, the Wiſe, A. D. 1254. It ſoon roſe to importance, and became eminent in Europe by acquaintance with the Arabian authors, and, through them, with the Greek. The reverence of its firſt profeſſors for Ariſtotle and for Thomas Aquinas, it is ſaid, continues to the preſent day. La Borde dates the eſtabliſhment of this univerſity in the year 1239, out of the ruins of that at Palencia; and he ſays, there have been as many as 8000 ſcholars in it, who came thither from every part of Spain, and 7000 from the other countries of Europe. But their number has been ſince much reduced. In 1785 they reckoned 1909 matricules. The univerſity has 61 profeſſors, at the head of whom is a rector, and next to him is the grand maſter of the claſſes, who nominates all the civil officers of the univerſity, which is itſelf endowed with above 1,200,000 reals. Here are 80 endowed profeſſors, and ſeveral candidates for profeſſorſhips, who have no ſalaries. Beſides the univerſity, there are 25 colleges, which have 30 collegians each, who live in common with the maſters, and four collegios-mayores, or grand colleges; the ſcholars are the moſt illuſtrious, and the children who are brought up here are thoſe of the greateſt, families in Spain. There are no more than ſeven of theſe colleges in Spain. One of the four eſtabliſhed at Salamanca was founded by Fonſeca, archbiſhop of Toledo. The Iriſh college was built A. D. 1614, by the Jeſuits; but upon their expulſion, it was divided: the ſouth ſide being given to the Iriſh, and the north to the biſhop of the dioceſe for his ſtudents. In the Iriſh college 60 ſtudents are received at a time, and when theſe return to Ireland, the ſame number is admitted, to be trained up for the miniſtry. The courſe of their education requires eight years, four being devoted to the ſtudy of philoſophy, and the remainder to divinity. They riſe every morning at half paſt four, and have no vacations. Their mode of education is as follows, and deſerves the notice of other ſimilar inſtitutions. They have queſtions propoſed for their diſcuſſion twice every day, and on theſe they are informed what books to read; then, ſuppoſing the ſubject to admit of a diſpute, it is carried on by two of them, under the direction of a moderator, who gives aſſiſtance when it is wanted, and guides them to the truth. When this mode of proceeding is not admiſſible, the tutors, inſtead of giving formal lectures, employ themſelves in the examination of their pupils, and the buſineſs of inſtruction is thus greatly expedited. "Dr. Curtis," ſays Mr. Townſend, in his "Journey through Spain in the years 1786 and 1787," "lives with his pupils like a father with his children; and, although in a ſtate of baniſhment, ſeems happy in the diſcharge of his important functions. It is, however, much to be lamented, that he and they ſhould be reduced to the neceſſity of ſeeking that protection in a foreign and diſtant country, to which they are intitled in their own. This kind of perſecution is neither juſt nor politic. It is certain that ignorance and bigotry have a ſtrong connection. Would you overcome inveterate prejudices, and are you anxious to baniſh ſuperſtition? let in the light. Would you conciliate the affections of thoſe who differ from you in their religious creed? no longer perſecute. Embrace them, and from enemies they will become your friends; let in the light, and difference of opinion dies away. Catholics, in the more enlightened countries, are no longer papiſts; their whole ſyſtem is going to decay; and, without claiming more than common ſagacity, we may venture to foretel, that in proportion as the limits of toleration ſhall be extended, all that cannot bear the light will gradually vaniſh, till the diſtinction between Catholics and Proteſtants ſhall ceaſe.

"To haſten this event, the education of Catholics in Ireland, for the purpoſe of the miniſtry, ſhould not only be connived at, but ſhould meet with all poſſible encouragement."

The ſcholars of the univerſity of Salamanca and of the colleges, about 3000 in number, are all, without exception, clad in black gowns like prieſts; their heads are ſhaved and covered with a cap; they are not permitted to wear a hat in the town, unleſs it rains, and are ſubjected to a moſt regular life. In fine, they have great privileges, are dependent only on their profeſſors, and are under the juriſdiction of the rector.

In a curious edict of Charles V. for the regulation of mendicity, there is a clauſe permitting ſtudents in the univerſity to beg, provided they have a licence from the rector; but in the preſent day they appear to be in a more reſpectable condition, and few, if any, avail themſelves of this privilege. The library is ſpacious, and tolerably well furniſhed with modern books; but the bulk is traſh, conſiſting principally of ſcholaſtic divinity.

Of all the colleges and convents, it were endleſs to enumerate the treaſures and rich jewels deſigned for the ſervice of the altar. Whatever is moſt valuable, the produce of Europe, Aſia, Africa, and America, is here collected; and the beſt workmen in every country have exerted all their taſte and ſkill, each in his ſeveral branch, to ſhew the perfection of his art. The ornaments and dreſſes of the prieſts are both rich and beautiful; but the moſt coſtly piece of furniture, in moſt convents, is the cuſtodia, that is, the depoſitory of the hoſt, or, according to the ideas of a Catholic, the throne of the Moſt High, when upon ſolemn feſtivals he appears to command the adoration of mankind. It is not uncommon to expend ſix thouſand ounces of ſilver upon one of theſe, beſides gold and precious ſtones; yet, in moſt of them, the workmanſhip ſurpaſſes the value of the materials.

From the account already given of Salamanca, it might be imagined that it was a city of the firſt order, and that it was very populous and rich; but it has much declined from its former ſtate. It contains about 3400 families, without including the ſcholars, the members of the univerſity and of the colleges, the prieſts, monks, nuns, and officers of the government. It is, however, full of merchants, and is inhabited by a tolerably numerous nobility. The houſes, ſays Mr. Townſend, are no more than 3000, yet they have 27 pariſh churches, with 15 chapels; and the clergy are, of thoſe that are parochial, 399, of the cathedral, 132, beſides 49 of the royal clergy of St. Mark; amounting in the whole to 580.

The town is ſurrounded by a good wall; the public edifices are of different eras; the pooreſt of them are of the 18th century: the moſt curious are thoſe of the time of the kings of Caſtile and Leon, and of that of Charles V.; and others of the reigns of Philip II. and Philip III. Its numerous ſquares admit a free circulation of air; and one of theſe may rank with the fineſt in Spain; it is ſpacious, modern, and of an elegant architecture. It is environed by a portico of 20 arcades; the houſes are of three ſtories, each ornamented with a handſome balcony, which ſurrounds it, ſo that each ſtory has its balcony continued without interruption. In the archivoltes are placed medallions, containing the kings of Caſtile and Leon, down to Charles III., then all the illuſtrious warriors of Spain. This uniform building is crowned above its entablatures with baluſtrades. The portico is not more to be admired for its beauty in the day, than for the protection it affords by night; becauſe in this city they have an execrable cuſtom, ſimilar to that for which the inhabitants of the Old town in Edinburgh have been deſervedly reproached. The town-houſe occupies one ſide, and ſeveral ſtreets run from the others.

In this city beggars abound; and in conſequence of the ample proviſion made for lazineſs, every ſtreet ſwarms with vagabonds; not only with thoſe who are objects of compaſſion, but with wretches who, if compelled to work, would be able to maintain themſelves. The hoſpicio, or general work-houſe, has not funds ſufficient for their reception, amounting only to 1600*l.* a-year, which can only ſupport 450 paupers. In this hoſpicio are various implements, and particularly one for weaving tape, of which Mr. Townſend has given a drawing and deſcription. In its conſtruction it is cheap and ſimple, and in its operation ſo expeditious, that a little child weaves near 50 yards, and a woman more than 120, in a day.

The country about this town is beautiful and fertile. The river Tormes abounds in eels, barbel, and excellent trout. Salamanca is 100 miles N.W. of Madrid, and 70 S. of Leon. N. lat. 41° 24′. W. long. 5° 54′.

SALAMANCA, a town of Mexico, in the province of Mechoacan; 40 miles N.N.W. of Mechoacan. N. lat. 20° 40′. W. long. 102°.

SALAMANCA *de Bacalar*, a ſmall but flouriſhing town of Mexico, in the province of Yucatan, on the E. ſide of the iſthmus which joins the peninſula of Yucatan to the continent; containing about 120 houſes, with a bad fort and a ſmall garriſon, to prevent contraband trade; 160 miles S. of Merida. N. lat. 17° 45′. W. long. 90° 36′.

SALAMANCA, *New*. See RAMADA.

SALAMANDER, in *Zoology*, a name given by authors to ſeveral ſpecies of the lizard kind. See LIZARD.

SALAMANDER's *Blood*, a term which chemiſts give to the red vapours, which, in diſtilling ſpirit of nitre, riſe towards the latter end, and fill the receiver with red clouds.

They are the moſt fixed, and the ſtrongeſt part of the ſpirit; nothing but nitre yields a red vapour in diſtillation.

SALAMANDRINO, in *Ichthyology*, a name given by the Italians to that ſpecies of ſalmon, which Salvian calls *ſal marinus*.

SALAMANIE, or CALEMUT, in *Geography*, a river of North America, in the Indiana territory, which runs into the Wabaſh; 12 miles E. of Eel town.

SALAMANIE, in *Muſic*, the true Turkiſh flute, a wind inſtrument in uſe among the Turcoman ſhepherds in Arabia. It is entirely open, and without any reed, ſo that to wind it is no eaſy matter. This is the favourite inſtrument of the Merlavi derviſes, who, as they uſe muſic in their acts of religious worſhip, are the beſt muſicians in the Eaſt, and excel eſpecially in playing on the flute. It is made either of a reed, or of a piece of fine wood.

SALAMASCIA, in *Geography*, a town of Mingrelia; 8 miles N. of Iſgaur.

SALAMBORIA, or SARABREA, in *Ancient Geography*, a town of Cappadocia, in Garſauria. Ptol.

SALAME, in *Geography*, a ſmall iſland at the entrance of the Perſian gulf, near cape Muſſendom. N. lat. 26° 20′. E. long. 56° 48′.

SALAMEA. See ZALAMEA.

SALAMGA, in *Natural Hiſtory*, the name given by the people of the Philippine iſlands to a ſpecies of ſea-ſwallow. This is the bird, whoſe neſts are ſo famous as an ingredient in ſoups.

SALAMI, in *Geography*, a town of Arabia, in the province of Nedsjed; 20 miles E. of Tima.

SALAMIEH, a town of Arabia, in the province of Nedsjed; 25 miles E. of Hamah.

SALAMINE, in *Ancient Geography*, a ſmall iſland in the Saronic gulf, which formerly made a part of the territory of Attica. It anciently bore the name of Cycria, after Cychræus, the name of its firſt king, and that of Pityuſſa, from the quantity of pines which were found there. Strabo gives it the appellation of Scirias, after that of an ancient hero. The name of Salamine was derived from Salamis, who, according to Greek authors, was the daughter of Aſopus, king of Bœotia, tranſported to this iſland by Neptune, by whom ſhe became the mother of Cychræus. It has in ſucceſſion two towns, called Salamis, one towards the ſouth, oppoſite to Egina, and the other towards Attica. This latter, or New Salamis, became very populous, and was governed by its own laws until the time of Auguſtus. Some authors ſay, that this iſland was anciently peopled by Ionians, and afterwards by colonies from different parts of Greece. After Cychræus above-mentioned reigned Teucer, and after him Telamon, whoſe ſon Ajax conducted the ſhips of Salamine to the war of Troy. One of the ſucceſſors of Teucer ceded this iſland to the Athenians; from them it was taken by the Megarians, and again recaptured by the Athenians, at the requeſt of Solon. When the kings of Macedon humbled the power of the Athenians, they loſt among other iſlands under their dominion this iſland of Salamine, which revolted under the reign of Caſſander; but this enterpriſe terminated unfortunately; for the Athenians, being more powerful than they were ſuppoſed to be, ſuppreſſed this revolt, and drove from the iſland all who poſſeſſed any kind of property, and placed a colony of Athenians in their room. Sylla declared the iſland of Salamine free, and it enjoyed this privilege until the reign of Veſpaſian, who reckoned it among the Roman provinces. Salamine is famous for a naval battle fought in the year 479 B.C. in the ſtrait formed between the iſland and the continent.

SALAMINIAS, a town of Aſia, in Syria, ſituated at the foot of the mountains, S.W. of Occaraba, and N.E. of Emeſa.

SALAMIS, a famous town of the iſland of Cyprus. According to Scylax this town had a ſecure port, proper for the ſhelter of ſhips in the winter. It was ruined by an earthquake, which cauſed the ſea to overflow it: but it was again re-eſtabliſhed in the 4th century. Here was a temple dedicated to Venus. When it was re-eſtabliſhed in the 4th century it took the name of Conſtantia; and though it was depopulated about the end of the 7th century, the name of Conſtanza was annexed to its ruins. St. Paul came to Salamis with St. Barnabas, A.D. 44, and there converted Sergius Paulus. Acts, xiii. 5. See FAMAGUSTA.—Alſo, a ſmall country of Aſia.

SALAMONE, in *Geography*, a cape of the iſland of Candia, at the E. end; 16 miles E. of Settia.

SALAMPRIA, a river of Theſſaly, which runs into the Peneo; 20 miles W. of Lariſſa.

SALAMPSII, in *Ancient Geography*, a people of Africa, in Mauritania Cæſarienſis, in the vicinity of the Machuri, and E. of the Baniuri. Ptol.

SALAMUN, in *Geography*, a town of Egypt, at the W. branch of the Nile; 4 miles S. of Shabur.

SALANCHA, or SALANCHES, a town of France, in the department of Mont Blanc, late capital of Upper Faucigny, in a mountainous ſituation, on the banks of the Arve; bearing marks of antiquity, and containing 4000 inhabitants; it has a weekly market, and the inhabitants carry on a conſiderable traffic in horſes, cattle, cheeſe, woollen ſtuffs, iron tools, &c.; 31 miles S.E. of Geneva. N. lat. 45° 54′. E. long. 6° 30′.

SALANCON, in *Ancient Geography*, a river of Illyria, which ran into the Atlantic gulf.

SALANDRA, or SALANDRIA. See CHELANDIUM.

SALANDRA, in *Geography*, a town of Naples, in Baſilicata; 22 miles S.E. of Acerenza.

SALANDRETTA, a river of Naples, which runs into the Adriatic, N. lat. 40° 27′. E. long. 16° 42′.

SALANGA. See JUNKSEILON.

SALANGARI, a ſmall iſland in the Eaſt Indian ſea, near the W. coaſt of Gilolo. N. lat. 2° 25′. E. long. 127° 31′.

SALANIEH, a town of Egypt; 1 mile W. of Damietta.

SALANKEMEN, a town of Sclavonia, on the S. ſide of the Danube, oppoſite to the mouth of the Theiſs; 18 miles N.W. of Belgrade.

SALAPHITANUM OPPIDUM, in *Ancient Geography*, a town in the interior of Africa, which was ſubject to the Romans, according to Pliny, who reckons it in the number of the thirty towns which were indulged with the liberty of chooſing their own magiſtrates.

SALAPIA, SALPE, a town of Italy, in Apulia, towards the ſouth coaſt, near the ſea, in a marſhy ſituation, which rendered it very inſalubrious. Some pretend that it was founded by Diomedes. It was a poſt of conſequence, which was eagerly contended for by the Romans and Carthaginians during the ſecond Punic war.

SALAPOREE, or SALAPOUR, in *Geography*, a town of Hindooſtan, in Dowlatabad; 30 miles W.N.W. of Nander.

SALAR, in *Ichthyology*, a name given by ſome authors to the trout.

Others apply the name to a young ſalmon, while very ſmall.

SALARANO, in *Geography*, a town of Italy, on the Lambro; 5 miles W.S.W. of Lodi.

SALARIA, in *Ancient Geography*, a town of Hiſpania Tarragonenſis, in the interior of the country, and in the territory of the Oretani. Ptol.

SALARS, in *Geography*, a town of France, in the department of the Aveiron; 7 miles S.E. of Rhodez.

SALARY, SALARIUM, a ſtipend, or wages allowed any perſon in conſideration of his pains, induſtry, or ſervice, in another man's buſineſs.

SALAS, in *Geography*, a town of Spain, in the province of Leon; 22 miles W. of Aſtorga.—Alſo, a town of Spain, in Old Caſtile; 20 miles S.E. of Burgos.

SALASCO, a town of Italy, in the department of the Seſia; 7 miles W. of Vercelli.

SALASSES, lofty mountains in the iſland of Bourbon, ſaid to be 1600 toiſes high, and having on the S.W. part a volcano.

SALASSI, in *Ancient Geography*, a people of Gallia Tranſpadana, more northerly than the Taurini, in a fine valley watered by the Duria Major. In the year of Rome 610, a difference took place between the Salaſſi and ſome of their neighbours. Appius Claudius Pulcher, to whom was aſſigned the department of Gaul, took occaſion to war againſt them; he loſt the firſt battle, but gained the ſecond, and ſubjected the country to the dominion of the Romans. On occaſion of a ſecond revolt in 728, Auguſtus ſent againſt them Terentius Varro Murena, who terminated the war in a ſingle campaign: and under a pretext of levying contributions, he diſtributed his troops through the whole country. Strabo ſays that the Salaſſi, to the number of about 40,000, were forcibly diſpoſſeſſed and carried away by the Romans; 36,000 were ſold as ſlaves; and 4000 were incorporated with the Pretorian cohorts.

SALASSUR, in *Geography*, a town of Aſiatic Turkey, in the Arabian Irak; 170 miles N.W. of Baſſora.

SALATH, a river of Stiria, which runs into the Kainach, near Voitſberg.

SALATHOS, in *Ancient Geography*, a people of Africa, in Interior Libya, who inhabited the territory between mount Mandre and Sagapola. Ptol.—Alſo, a river of Africa, in the environs of mount Mandre.

SALATY, in *Geography*, a town of Samogitia; 15 miles W.N.W. of Birza.

SALAURIS, in *Ancient Geography*, a town of Hiſpania, ſituated on the coaſt, between mount Sellius and the town of Tarracone, among ſandy deſarts.

SALAWAUK, in *Geography*, a town of Hindooſtan, in the Carnatic; 35 miles S.S.W. of Madras.

SALAYA, a town of Mexico, in the province of Mechoacan; 50 miles N.N.E. of Mechoacan. N. lat. 20° 45′. W. long. 102° 20′.

SALAYAR, or SALAYER, one of the Celebezian iſles in the Eaſt Indian ſea, about ten leagues long, and one broad, ſeparated from the S. coaſt of the iſland of Celebes by a ſtrait to which it gives name. It is nearly S. from point Laſſeus, and diſtant two leagues. In the ſtrait between them are the Budjeroons, called by our ſeamen the Boeſeroons, which are three ſmall uninhabited iſlets. Salayer is mountainous and woody, and in its foreſts are many deer. Its productions are ochre and batta, the laſt being a ſort of millet, which conſtitutes a chief part of the food of its inhabitants. It likewiſe produces capas, or cotton, of which is manufactured a large quantity of coarſe, blue, and white, ſtriped cloth. This iſland is governed by 14 regents, who once a year, in the month of October, reſort to fort Rotterdam with 250 or 300 of their countrymen, to perform the cuſtemary duties of vaſſalage, and to obtain an adjuſtment of their diſputes. The inhabitants, according to Capt. Forreſt, amount to about 60,000, who drink much of a liquor called Saguire, drawn from the palm-tree, and burn tallow obtained from the tallow-tree, as in China. They are deſcribed by Stavorinus as puſillanimous and ſervile, and at the ſame time perverſe and quarrelſome, ſo that if they do not like their ſituation, they immediately migrate, with their whole family, to another country. The Macaſſars, who had poſſeſſion of this iſland, ceded it, by the treaty of Boni, to the king of Ternate; but in proceſs of time it was wreſted from the Ternateſe by the Dutch company. There are ſeveral other iſlands which lie round and near Salayer, and belong to it; but of theſe, two only are inhabited, *viz.* Bonarette and Calauwe. Theſe were given in fief to the old Radja Palacca, and his ſucceſſors have appropriated it to the purpoſe for which he aſſigned it, that of inſtructing his dancing girls. S. lat. 6° 5′. E. long. 120° 55′.

SALAYASIR, in *Natural Hiſtory*, the name by which the people of the Philippine iſlands call that ſmall ſpecies of duck, which is ſo common thereabouts. This is an inhabitant of their lakes and marſhes, and is a perfect duck, and very beautifully coloured, but does not exceed the bigneſs of a man's fiſt,

SALAZAR, in *Geography*, a town of South America,

rica, in the kingdom of Granada ; 40 miles N. of Pamplona.

SALBARRY, a town of Hindooſtan, in Berar ; 43 miles W. of Nagpour.

SALBERG. See Sala.

SALBEY, a town of Hindooſtan, in the circar of Gohud ; 20 miles N.E. of Narwa.

SALBOE, a town of Norway, in the province of Drontheim ; 40 miles S.S.E. of Drontheim.

SALBRIS, a town of France, in the department of the Loire and Cher, and chief place of a canton, in the diſtrict of Romorantin ; 12 miles N.E. of it. The place contains 1260, and the canton 7791 inhabitants, on a territory of 735 kiliometres, in 8 communes.

SALCHENAU, or Salenau, a town of Auſtria ; 2 miles N.W. of Ebenfurth.

SALCOMBE, a bay and village of England, on the S. coaſt of Devonſhire, between the Mew ſtone and Praule point.

SALDÆ, in *Ancient Geography*. See Bugia.

SALDAGNA, or Saldana, in *Geography*, a town of Spain, in the province of Leon ; 38 miles E. of Leon.

SALDANHA Bay, a bay of the Atlantic, on the S. coaſt of Africa, and N.W. of the Cape of Good Hope. This is repreſented by Mr. Barrow as one of the beſt harbours, perhaps, in the world : and as it is a windward port with regard to Cape Town, it is the moſt deſirable wintering ſtation for ſhips of war. Any number of ſhips may lie here, in perfect ſecurity, at all ſeaſons of the year, either to the northward of the entrance in Hoetjes bay, from whence they can at all times go out in the winter months, or to the ſouthward in ſummer, when, with equal facility, the ſouth-eaſterly winds will at any time carry them out. On the W. ſide of Hoetjes bay, nature has erected a granite pier, againſt the ſides of which ſhips may be brought as to the ſide of a quay ; and it terminates to the northward in a fine ſmooth ſandy beach, where boats may always land with ſafety. The poſition of Marcus iſland, in the entrance, a ſolid block of granite, is peculiarly favourable for protecting the bay, to which a battery erected upon it, and mounted with heavy cannon, would be fully competent. The different points alſo jutting into the bay are well calculated to provide for its defence. Beſides, the ſituation of Saldanha bay is much more convenient than that of the peninſula, for receiving the ſupplies afforded by the country. The deep ſandy iſthmus, ſo deſtructive to cattle, could be altogether avoided ; and its diſtance from the corn diſtricts, which is the moſt material article of conſumption, is much leſs than that of the Cape. Its ſituation with regard to all the northern parts of the colony is much more convenient than Cape Town ; and equally ſo for thoſe who inhabit the diſtant diſtrict of Graaf Reynet, and who uſually paſs over the Roode Sand Kloof. It is ſubject, however, to one very great inconvenience, that no ſtream of water, like that of the Table mountain, falls into this bay ; nor has any ſpring been yet diſcovered in the vicinity of its ſhores, ſufficient for ſupplying the demands of a ſmall ſquadron for freſh water. In proceſs of time, and by farther trials, it is thought that water might be found. Moreover, it is obſerved, in recommendation of this bay, that if a naval eſtabliſhment were once formed here, many coaſting veſſels and fiſhing ſhips would be conſtructed, as it affords every convenience that could be required for building ſhips ; and this would be the means of increaſing the coaſting trade, and eſpecially with regard to the article of timber, the produce of the colony. Barrow's Africa, vol. ii.

SALDI Partenico, a town of Sicily, in the valley of Mazara ; 14 miles W.S.W. of Palermo.

SALDUBA, in *Ancient Geography*, a town of Hiſpania, upon the coaſt of Bœtica, with a river of the ſame name. Pliny.

SALE, in *Geography*, a river of Pruſſia. See Sal.—Alſo, a lake of Perſia, in the province of Farſiſtan ; 9 miles E. of Schiras.

Sale, George, in *Biography*, an Engliſh Oriental ſcholar of great celebrity, but of whoſe perſonal hiſtory very little is known. The following particulars of him have been collected by the writers in the General Biography. He was a married man, and had a ſon, who was educated at New college, in the univerſity of Oxford, of which he became a ſellow, and was afterwards elected to a fellowſhip in Wincheſter college. Mr. Sale himſelf was one of the founders, and of the firſt committee of a ſociety for the encouragement of learning, eſtabliſhed in 1736, of which ſeveral noblemen, and ſome of the moſt literary characters of the age, were members. This ſociety was inſtituted with a view of enabling authors to publiſh their own works, without the intervention of bookſellers. Mr. Sale's ſervices to the ſociety were of very ſhort duration, as he died in the month of October 1736. He was one of the authors of the great "General Dictionary," and had a conſiderable ſhare in that tranſlation of the works of Bayle which is incorporated with it. He contributed to that work the coſmogony, and a ſmall part of the hiſtory immediately following the ſame. But his moſt important production is the "Koran, tranſlated into Engliſh immediately from the Original Arabic, with explanatory Notes, taken from the moſt approved Commentators. To which is prefixed a preliminary Diſcourſe," 1734. This is a literal, and at the ſame time an elegant verſion of the ſacred code of thoſe numerous nations that follow the prophet of Mecca, enriched with notes abounding with curious as well as important information. The preliminary diſcourſe contains the following ſubjects. 1. Of the Arabs before Mohammed, their hiſtory, religion, learning, and cuſtoms. 2. Of the ſtate of Chriſtianity, particularly of the Eaſtern churches, and of Judaiſm, at the time of Mohammed's appearance ; and of the methods taken by him for eſtabliſhing his religion. 3. Of the Koran itſelf, the peculiarities of that book, the manner of its being written, and the general deſign of it. 4. Of the doctrines and poſitive precepts of the Koran, which relate to faith and religious duties. 5. Of certain negative precepts in the Koran. 6. Of the inſtitutions of the Koran in civil affairs. 7. Of the months commanded by the Koran to be kept ſacred, and of the ſetting apart of Friday for the ſpecial ſervice of God. 8. Of the principal ſects among the Mohammedans, and of thoſe who have pretended to prophecy among the Arabs, in or ſince the time of Mohammed.

Sale, *Venditio*, in *Commerce*, is the transferring of the property of goods from one to another, upon valuable conſideration ; and if a bargain is, that another ſhall give me 5*l.* for ſuch a thing, and he gives me earneſt, which I accept, this is a perfect ſale. On ſale of goods, if earneſt be given to the ſeller, and part of them be taken away by the buyer, he muſt pay the reſidue of the money upon fetching away the reſt, becauſe no other time is appointed ; and the earneſt given binds the bargain, and gives the buyer a right to demand the goods ; but a demand without paying the money is void ; and it has been held, that after the earneſt is taken, the ſeller cannot diſpoſe of the goods to another, unleſs there is ſome default in the buyer ; therefore, if he doth not take away the goods, and pay the money, the ſeller ought to require him ſo to do ; and then if he doth not do it in convenient time, the bargain and ſale are diſſolved, and the ſeller may diſpoſe of them to any other perſon. A ſeller of a thing is to keep it a reaſonable time for delivery; but where no time is appointed for delivery of things ſold, or for payment of the money, it is generally implied that the delivery be made immediately, and payment on the delivery. Where one agrees for wares ſold, the buyer muſt not carry them away before they are paid for, except a day of payment is allowed him by the ſeller. It is ſaid a perfect bargain and ſale between parties will be good, though the ſeller knows of an execution that is againſt him, and doth ſell the goods, to prevent the falling of it upon them. A ſale may be of any living or dead goods in a fair or market, be they whoſe they will, or however the ſeller came by them, if made with the cautions required by law; but if one ſell my goods unduly, I may have them again. If a man affirms a thing ſold is of ſuch a value, when it is not, this is not actionable; but if he actually warrants it at the time of the ſale, and not afterwards, it will bear an action, being part of the contract.

Sale *of Diſtreſs*. See Distress and Replevy.

SALEBRO, in *Ancient Geography*, a place of Italy, in Etruria, N.W. of Ruſellæ, upon the Aurelian way, between the lake Aprilis and Manliana.

SALECHA, Salcha, or *Salchan*, a town of Paleſtine, towards the northern extremity of the portion of Manaſſeh, in the kingdom of Og, and country of Baſhan, beyond Jordan. Deut. iii. 10. 1 Chron. v. 11. Joſh. xii. 5. xiii. 11.

SALECTO, in *Geography*, a town of Africa, in the kingdom of Tunis, on the E. coaſt, near the Mediterranean; near it are the remains of a large caſtle, anciently called "Turris Hannibalis," 40 miles S.E. of Cairoan. N. lat. 35° 13′. E. long. 11° 3′.

SALEEN, Lough, a lake of the county of Mayo, Ireland, not far from Caſtlebar.

SALEF, a river of Aſiatic Turkey, which runs into the Mediterranean, near Seleſtria.

SALEFUR, a name given by ſome of the chemiſts to garden ſaffron.

SALEHIEH, in *Geography*, a town of Egypt; 20 miles S.W. of Tineh.

SALEK, a town of Weſtphalia, in the biſhopric of Fulda; one mile S.W. of Hamelburg.—Alſo, a river of South Wales, which runs into the ſea, two miles N. of Aberyſtwith.

SALEM, in *Ancient Geography*, a name given by the ſacred writers to Jeruſalem. (Pſ. lxxvi. 2.) It has been a common opinion, that Melchiſedech, king of Salem, was king of Jeruſalem. Gen. xiv. 18. Heb. vii. 1, 2.

Salem, or *Shalem*, a town of Paleſtine, which belonged to the Shechemites, where Jacob arrived on his return from Meſopotamia. Gen. xxiii. 18.

Salem, a place near to Jeruſalem, or weſt of it, according to Jerom.

Salem, or *Salamias*, a place of Paleſtine, in the territory of Scythopolis, 8 miles from this city. Jerom.

Salem, or *Salim*, a place of Paleſtine, on the banks of Jordan, in the half tribe of Manaſſeh, where John the Baptiſt baptized. John, iii. 23.

Salem, a town of Paleſtine, where Melchiſedech is ſaid to have reigned. This town, according to Jerom and Reland, was different from Jeruſalem, and is placed by the former in the territory of Scythopolis, in which were ruins, in his time, of what was ſaid to have been the palace of Melchiſedech.

Salem, a name ſometimes given by the Septuagint writers to Shiloh, which was ſituated in the tribe of Ephraim. See Jer. xli. 5. xlviii. 5.

Salem, a river which diſcharged itſelf into the ocean, about 90 ſtadia from the promontory of Abila, according to Philoſtratus.

Salem, in *Geography*, a town of Hindooſtan, in the Barramaul country; 28 miles S. of Darempour.—Alſo, a town of Perſia, in the province of Kerman; 115 miles N.E. of Sirgian. N. lat. 30° 26′. E. long. 58° 50′.

Salem, a county of New Jerſey, in America, bounded E. by Cumberland, and W. by Delaware river, and divided into nine townſhips, of which thoſe on the Delaware river are excellent for paſture, and have large dairies. Beſides, the ſoil produces flax, Indian corn, wheat, and other grain; but the people, it is ſaid, are ſubject to intermittent fevers. In this county the Friends have four meeting-houſes, the Preſbyterians four, the Epiſcopalians two, the Baptiſts three, and the German Lutherans one.—Alſo, a poſt-town of New Jerſey, and capital of the above county, on a branch of Salem creek, about 3½ miles from its confluence with Delaware bay. It contains a meeting-houſe for Baptiſts, one for Quakers, and one for Methodiſts; a court-houſe, gaol, and about 100 houſes, moſtly built with brick, and many of them elegant. It contains 929 inhabitants, 37 miles S.W. by S. from Philadelphia.—Alſo, a townſhip of Vermont, in Orleans county, at the S. end of lake Memphremagog, containing 58 inhabitants.—Alſo, a port of entry and poſt-town of Maſſachuſetts, and the capital of Eſſex county; 19 miles N. by E. from Boſton. It is ſuppoſed to be the ſecond town for ſize in the United States, and, except Plymouth, the oldeſt. It was ſettled in 1628, and called by the Indians "Naumkeeg." It contains 12,603 inhabitants. Here are a ſociety of Friends, an epiſcopal church, and five congregational ſocieties. The town is ſituated on a peninſula, formed by two ſmall inlets of the ſea, called North and South rivers. Notwithſtanding the inconvenience of its harbour, Salem has more ſhipping and more trade than any port of the commonwealth, Boſton excepted. The inhabitants are ſaid to be richer than thoſe of any town in the United States. The fiſhery, the trade to the Weſt Indies, to Europe, to the coaſt of Africa, to the Eaſt Indies, and the freighting buſineſs from the ſouthern ſtates, are here purſued with energy and ſpirit. Here are two banks, one eſtabliſhed in 1792, and another in 1803. A court-houſe, built in 1786, forms a principal ornament of the town. Salem is connected with Beverly by Eſſex bridge, upwards of 1500 feet long, erected in 1789. The harbour is defended by a fort and citadel. N. lat. 42° 30′. W. long. 70° 50′.—Alſo, a townſhip in Weſt Cheſter county, New York, bounded E. and S. by the ſtate of Connecticut, and W. by Pounbridge, Bedford townſhips, and Croton river.—Alſo, the county and poſt-town of Waſhington county, New York, bounded W. by Argyle.—Alſo, a poſt-town of Stokes county, North Carolina, on the W. ſide of Wack creek; containing above 100 houſes, regularly built, and occupied by tradeſmen. This ſettlement was formed by Moravians in 1766; 35 miles N.E. by N. from Philadelphia.—Alſo, a county in South Carolina, in Sumpter diſtrict.—Alſo, the chief town of Surry county, in Saliſbury diſtrict of North Carolina.—Alſo, the name of two townſhips of Pennſylvania; the one in Luzerne county, containing 530 inhabitants, and the other in the county of Weſtmoreland, containing 1518 inhabitants.—Alſo, a townſhip of Rockingham county, New Hampſhire, in the S.W. corner of the county, adjoining Plaſtow, and divided from Methuen by the Maſſachuſetts line. It was incorporated in 1750, and contains 1179 inhabitants.

bitants.—Alſo, a Moravian ſettlement in the ſtate of Ohio, on Muſkingum river; abandoned in 1781, and plundered by the Indians in alliance with the Britiſh army.—Alſo, a Moravian ſettlement on the N.E. bank of Monongahela river; 78 miles W. from Pittſburg.—Alſo, *New Salem*, a Moravian ſettlement of Chriſtian Indians, on Huron river, on the S. ſide of lake Erie.

SALEMIA, a town of Arabia, in the province of Nedsjed; 40 miles N. of Jamama.—Alſo, a town of Aſiatic Turkey, in the pachalic of Tripoli, on the borders of the deſarts of Syria; 70 miles N.N.E. of Damaſcus.

SALENÆ of Ptolemy, in *Ancient Geography*, a town of the iſle of Albion, in the country of the Cattivellauni, probably ſituated at Saludy in Bedfordſhire, where ſeveral Roman antiquities have been found.

SALENGORE, in *Geography*, a city of Aſia, and capital of a kingdom of the ſame name, ſituated to the ſouth of Queda, in the peninſula of Malacca. N. lat. 3° 27′. E. long. 101° 20′.

SALENI, in *Ancient Geography*, a people of Hiſpania, in the Tarragonenſis and in Cantabria, in the environs of the river Salia. Mela.

SALENTIA, or Sallentiæ, a town of Magna Grecia, in the country of the Meſſapians. Steph. Byz.

SALENTINA Regio, a country of Magna Grecia, in which was the promontory called Japygium, and that called Salentinum promontorium, which terminated the peninſula of Japygiæ; now called cape St. Marie de Leuca. The inhabitants of this country were called Salentini. Ptolemy.

SALENTINO, in *Geography*, a town of Naples, in the province of Bari; 11 miles S.S.E. of Bittetto.

SALEP, in the *Materia Medica*, the root of a ſpecies of orchis.

The orchis maſcula of Linnæus is moſt valued, although the roots of ſome of the palmated ſorts, particularly of the orchis latifolia, are found to anſwer almoſt equally well. The orchis flouriſhed in various parts of Europe and Aſia, and grows in our country ſpontaneouſly, and in great abundance. It is much cultivated in the Eaſt, and the root of it forms a conſiderable part of the diet of the inhabitants of Turkey, Perſia, and Syria. The ſalep, which is brought from the eaſtern countries, is in oval pieces, of a yellowiſh-white colour, ſomewhat clear and pellucid, very hard, and almoſt horny, of little or no ſmell, in taſte like gum tragacanth.

Salep ſhould be choſen clean, firm, and hard; it is very little liable either to decay, or ſophiſtication.

The people of the Eaſt are extremely fond of ſalep; they look upon it as one of the greateſt reſtoratives and provocatives to venery in the whole vegetable world.

That ſalep is the root of an orchis, no way differing from our common orchis in virtue, but owing its appearance to the manner of preparing it, and, conſequently, that ſalep may be prepared from the roots of orchis of our own growth, M. Geoffroy has proved in the following manner. He conſidered, that the method of curing one root in the eaſtern part of the world was probably the ſame with that uſed in all; and obſerving that Kæmpfer had deſcribed the manner in which the Chineſe prepare their ginſeng, to make it pellucid, which was by firſt ſteeping, or macerating it in water, and afterwards carefully drying it, he determined to attempt the curing of the roots of the common orchis, in a method not unlike that uſed with the ginſeng, in order to make ſalep of it. The ſalep which we receive from Turkey, is a root of a white or reddiſh colour, according to its different age; and as we receive it, is always tranſparent. As to our own orchis, if we attempt to dry the roots in the common way, they never will appear at all like the ſalep, but will become ſhrivelled up and brown, and will always retain, or be ready to imbibe from a humid air a great quantity of moiſture. To prepare theſe, in imitation of the ſalep, M Geoffroy choſe the largeſt, plumpeſt, and faireſt roots he could find; theſe he nicely ſkinned, taking off the whole outer rind, then throwing them into cold water, he ſuffered them to macerate there ſome time; after this he ſlightly boiled them; and taking them out of the water, and draining them, he had them ſtrung upon threads, to be dried in a warm and dry air. When the roots were thoroughly dried, they were very tranſparent, and reſembled pieces of gum tragacanth, and continued dry and hard. The roots, thus prepared, may be kept long in a dry place, and will never attract humidity, or become mouldy and rotten; as they will always do in wet weather, if dried in the common way with their ſkins on.

The orchis roots thus prepared may be reduced to powder; this powder will diſſolve away in boiling water, and a ſcruple of it will make a baſon full of jelly, in the manner of the Turkiſh ſalep. This jelly is an admirable medicine in all the caſes in which ſalep is preſcribed, and may be rendered agreeable by the addition of wine, ſugar, ſpice, &c.; and the powder may be given with great ſucceſs in aſſes' milk, for diſeaſes of the breaſt.

If the water, in which the roots have been boiled, be evaporated over a gentle fire in an earthen veſſel, there will remain an extract of a viſcous texture, and a very agreeable ſmell, reſembling that of a meadow of flowers when the wind blows over it.

Retzius, in the Swediſh Tranſactions for 1764, has improved upon Geoffroy's method; but Mr. Moult, of Rochdale, having publiſhed a new proceſs, which is recommended by the ingenious Dr. Percival, from his own knowledge of its ſucceſs, we ſhall here add an account of it; firſt premiſing, that the beſt time for gathering roots is when the ſeed is formed, and the ſtalk ready to fall; becauſe the new bulb, of which the ſalep is made, is then arrived to its full maturity, and may be diſtinguiſhed from the old one, by a white bud ariſing from the top of it, which is the germ of the orchis of the ſucceeding year. The new root is to be waſhed in water, and the fine brown ſkin which covers it is to be ſeparated by means of a ſmall bruſh, or by dipping the root in hot water, and rubbing it with a coarſe linen cloth. When a ſufficient number of roots have been thus cleaned, they are to be ſpread on a tin plate, and placed in an oven heated to the uſual degree, where they are to remain ſix or ten minutes, in which time they will have loſt their milky whiteneſs, and acquired a tranſparency like horn, without any diminution of bulk. In this ſtate they are to be removed, to dry and harden in the air, which will require ſeveral days; or by uſing a very gentle heat, this operation may be finiſhed in a few hours. Mr. Moult obſerves, that his ſalep has a quality of thickening water, which is to that of fine flour nearly as two and a half to one, with this difference, that the jelly of ſalep powder is clear and tranſparent, whereas that of flour is turbid and white. Phil. Tranſ. vol. lix. p. 1, &c.

Dr. Percival informs us, that ſalep thus prepared may be afforded, in that part of England where labour bears a high value, at about eight-pence or ten-pence *per* pound, and that it might be ſold ſtill cheaper, if the orchis were cured without ſeparating from it the brown ſkin which covers it; whereas the foreign ſalep is ſold at five or ſix ſhillings *per* pound.

Salep is ſaid to contain the greateſt quantity of vegetable nouriſhment in the ſmalleſt bulk. The powder of it has been, therefore, propoſed to conſtitute part of the proviſions of a ſhip's company at ſea. This powder, and portable ſoup, or the dried gelatinous part of fleſh, diſſolved in boiling water, form a rich, thick jelly; and an ounce of each, with two quarts of boiling water, will be ſufficient ſubſiſtence for a man a day; and as portable ſoup is ſold at half a crown a pound, and ſalep, cultivated in our own country, might be afforded at ten-pence *per* pound, the day's ſubſiſtence would amount only to two-pence halfpenny. And this food, it is ſaid, would prove more nouriſhing than double the quantity of rice cakes, made by boiling rice in water. Beſides rice, as an aliment, is ſlow of fermentation, and a very weak corrector of putrefaction, and much inferior, as a wholeſome nouriſhment, to ſalep. Salep has alſo the ſingular property of concealing the taſte of ſalt-water; and it has the property of retarding the acetous fermentation of milk. Dr. Percival propoſes ſalep as a very uſeful and profitable addition to bread.

The reſtorative, mucilaginous, and demulcent qualities of the orchis root, render it of conſiderable uſe in various diſeaſes. In the ſea-ſcurvy, it powerfully obtunds the acrimony of the fluids, and is eaſily aſſimilated into a mild and nutritious chyle. In diarrhœas and the dyſentery, it is highly ſerviceable, by ſheathing the internal coat of the inteſtines, by abating irritation, and gently correcting putrefaction. In the ſymptomatic fever, which ariſes from the abſorption of pus, from ulcers in the lungs, from wounds, or from amputation, ſalep uſed plentifully is an admirable demulcent, and well adapted to reſiſt the diſſolution of the craſis of the blood, incident to theſe caſes. By the ſame mucilaginous quality, it is equally efficacious in the ſtrangury and dyſury. It has alſo been found an uſeful aliment for patients afflicted with the ſtone or gravel. Percival's Eſſ. Med. and Exp. vol. ii.

SALER Mouler, in *Geography*, a town and fortreſs of Hindooſtan, in the Baglana country; 114 miles N.W. of Aurungabad. N. lat. 20° 44′. E. long. 74° 7′.

SALERA, in *Ancient Geography*, a town of Africa Propria, taken by Scipio. Livy, b. xxix.

SALERNE, in *Geography*, a town of France, in the department of the Var, and chief place of a canton, in the diſtrict of Draguignan; 10 miles W. of it. The place contains 2417, and the canton 4265 inhabitants, on a territory of 117½ kiliometres, in 3 communes.

SALERNI, a town of Sicily, in the valley of Mazara; 34 miles S.W. of Palermo.

SALERNO, a ſea-port town of Naples, capital of the province of Principato Citra, and the ſee of an archbiſhop. The harbour is good, and defended with a caſtle; 26 miles E.S.E. of Naples. N. lat. 40° 40′. E. long. 14° 35′.

SALERNUM, Salerno, in *Ancient Geography*, a town of Italy, S.E. of Neapolis, at the bottom of a ſmall gulf, in the territory of the Picentini. It was ſituated on an eminence, at a ſmall diſtance from the ſea; and the Romans, in fortifying it againſt the Picentini, extended it to the coaſt. Under the conſulate of P. Cornelius, Scipio Africanus, and Sempronius Longus, in 559, the Romans ſent hither a colony. When the Normans, in the 11th century, obtained poſſeſſion of this town, it had the title of a principality, and in the 13th century the emperor Frederic founded an univerſity, which was in great reputation for medical inſtruction. See the next article.

Salernum, *the School of*, in *Medical Hiſtory*, the firſt Chriſtian univerſity eſtabliſhed in Europe, unleſs we believe the accounts which ſome writers give of thoſe of Paris and Bologna.

Many learned men, who had ſtudied medicine and philoſophy in the Arabian ſchools, conſiſting moſtly of monks, but including alſo Hebrew and other profeſſors, had aſſembled at Salernum, in Italy, as early as the middle of the ſeventh century, and by their learning and ſkill procured ſo much reputation for that city, that Charlemagne thought proper to found a college there, in the year 802. Their employment was the diffuſion of the learning of the Arabians, and eſpecially the medicine, which they introduced into Europe, with the moſt extravagant applauſe, ignorant of its origin from the Greeks, whoſe very name the reputation of theſe Arabian phyſicians had almoſt extinguiſhed, and whoſe writings were ſcarcely ever looked into, except by very few, till the end of the fifteenth century. Salernum, however, though thus eſtabliſhed by royal charter, and the ſeat of the learning of the Eaſt, and though its exiſtence as a college was prolonged for ſeveral centuries, appears to have produced few phyſicians of conſiderable note, and nothing, as a body, except a collection of precepts for the preſervation of health, which was entitled "Schola Salernitana," the School of Salernum.

The principal writer of note, who flouriſhed at the college of Salernum, was Conſtantine the African, a native of Carthage, who had ſpent thirty years at Babylon and Bagdad, and had become fully acquainted with the Oriental languages and learning. He wrote many books, which he affirmed were in a great meaſure original; but which were, in fact, mere compilations and plagiariſms, eſpecially his work entitled "Loci communes," which is an entire tranſcription from Haly Abbas, whoſe name he has not mentioned. Conſtantine, however, held a high reputation; was a great promoter of medical knowledge; and, by his influence and intereſt with Robert, duke of Normandy, the ſon of our William the Conqueror, obtained great patronage for the ſchool. This duke, on his return from the cruſade, remained ſome time in Apulia, and conſulted the phyſicians of Salernum reſpecting a wound in his arm, which had become fiſtulous, in conſequence, it was ſuppoſed, of having been inflicted by a poiſoned arrow. They recommended ſuction of the wound; but the duke would not admit of it, leſt the perſon who did it might be poiſoned. But his wife, Sybil, a noble and accompliſhed lady, whom he had married in Sicily, taking the opportunity in the night, frequently ſucked the ſore, and it healed. About this time, namely in the year 1100, the Schola Salernitana was compiled, which, from its high origin, made a great noiſe both then and in ſucceeding ages. It has been maintained by a French writer, Andry, in the Journal des Savans, that this work was compoſed by Tuſa and Rebecca Guerna, two celebrated ladies, who diſtinguiſhed themſelves by ſeveral writings. It is not generally believed, however, to be the work of an old woman, but is aſcribed to John of Milan, and was dedicated, in the name of the whole college, to duke Robert, in honour of whom a chapter was added, on the cure of fiſtulous ſores. This work was written in *Leonine* verſes, in compliment alſo, it is ſuppoſed, to the ſame noble patron; as this ſort of poetry was in great requeſt among the Romans. The work contains an account of the ſix *non-naturals*, with a ſeries of rules for the preſervation of health. It had the honour of being commented upon by Arnaldus de Villa Nova; and of being imitated by Ægidius, an Athenian, and a Benedictine monk, about the end of the twelfth century, in a work on the virtues of medicines, of urines, and the pulſe, in Latin hexameter verſes, though without much regard to the quantity of the ſyllables.

The ſchool of Salernum continued to flouriſh for many ages. The hiſtorian Ordericus Vitalis, who died in 1141, affirms that, in his time, this college was renowned over all the world for its excellent ſkill in phyſic ; and Benjamin of Tudela, a Jew, on his return from his travels over the greateſt part of the then known world, about 1165, commends it as the beſt ſeminary of medicine among the ſons of Edom ; for ſo he calls the weſtern Chriſtians. The ſtudy of medicine was greatly patronized in this city by ſeveral royal perſonages ; eſpecially duke Roger, the firſt king of both the Sicilies, in 1130, and by his ſucceſſors, William the firſt and ſecond, who followed his example. It had alſo ſome great privileges conferred upon it, about the year 1225, by the emperor Frederic II., particularly an excluſive power, (together with the college of Naples,) of granting degrees and licences to practice. This emperor was, in fact, a great judge as well as patron of learning, and was the principal promoter, at this time, of the tranſlations of the works of the Arabians into Latin. Indeed, not only the original Arabians were tranſlated, but their tranſlations alſo of the writings of the Greek authors were put into that language ; a circumſtance which, though it contributed partly perhaps to the neglect in which the Greek originals remained for ſome centuries, yet it prevented probably the Greek copies from being ultimately loſt, as Dr. Freind has obſerved, by directing the attention of the learned to them.

The ſtatutes of the college of Salernum were of very ancient date, being probably the firſt ſpecimen of ſuch ordinances, and obviouſly the models of ſubſequent enactments of the ſame nature. St. Matthew was the patron of the inſtitution : the motto on its ſeal was CIVITAS HIPPOCRATICA. The college conſiſted of the limited number of ten doctors, who ſucceeded according to ſeniority. The examination for admiſſion to a degree was very ſtrict, and muſt be either in Galen's treatiſe on therapeutics, or in the firſt of the canons of Avicenna, or in the Aphoriſms. The perſon admitted to examination muſt have attained the age of 21 (a miſtake, in the opinion of Dr. Freind, for 25 or 27); and muſt produce teſtimonials of having ſtudied phyſic for ſeven years. If he wiſhed to be admitted a ſurgeon, he muſt have learned anatomy for one year. He muſt ſwear to be true and obedient to the ſociety ; to take no fees from the poor ; and to have no ſhare in the gains of apothecaries. After this, a book was put into the hands of the candidate, and a ring upon his finger ; his head was crowned with laurel ; and he was diſmiſſed with a kiſs. There are many other ſtatutes for the regulation of the practice of the profeſſion ; particularly the apothecaries were obliged to make up their medicines according to the directions of the phyſicians, and to ſell them at a certain price.

The reputation of the college, rather than the intrinſic merits of the work, contributed probably to the extenſive diſſemination and multiplication of the editions of the "Schola Salernitana, de conſervanda valetudine." More than twenty editions appeared in Latin in the courſe of a century, after the invention of printing ; and it has been tranſlated into moſt of the European languages. See Freind's Hiſtory of Phyſick, part ii. ; Eloy Dict. Hiſt. de la Med.

SALERS, in *Geography*, a town of France, in the department of the Cantal, and chief place of a canton, in the diſtrict of Mauriac ; 9 miles S.E. of it. The place contains 1645, and the canton 12,598 inhabitants, on a territory of 330 kiliometres, in 11 communes.

SALES, a town of France, in the department of the Aude, and chief place of a canton, in the diſtrict of Caſtelnaudary, 7 miles W. of it. The place contains 939, and the canton 4958 inhabitants, on a territory of 135 kiliometres, in 14 communes.

SALESBURY, WILLIAM, in *Biography*, a Welſh grammarian, who flouriſhed at the beginning of the 17th century, was bred to the law. He aſſiſted biſhop Davies in tranſlating the New Teſtament into the Welſh language, which was printed in 1620. He is known as the author of "A Welſh Dictionary ;" "A Treatiſe on Rhetoric ;" "Poems," &c.

SALES-CURAN, or SALLES-CURAN, in *Geography*, a town of France, in the department of the Aveiron, and chief place of a canton, in the diſtrict of Milhau ; 11 miles S.E. of Rhodez or Rodés. The place contains 1164, and the canton 3886 inhabitants, on a territory of 210 kiliometres , in 8 communes.

SALET, SALLET, *Salade*, or *Celate*, in *War*, a light covering or armour for the head, anciently worn by the light horſe ; only differing from the caſk in that it had no creſt, and was little more than a bare cap. It ſometimes had a viſor, and was ſometimes without it.

Nicod derives the word from *ſila*, which had the ſame ſignification among the Latins ; others from *ſaladinus*, alleging that it was borrowed from the Orientals ; others from the Italian *celeta*, as if the head were hid by it ; others from the Spaniſh *celada*, *a little caſk*, &c.

SALETZ, or SALEZ, in *Geography*, a town of the Helvetian republic, in the county of Sax, on the Rhine ; 4 miles E. of Sax.

SALEVE, MONT, one of the Alps, ſituated about two leagues S. of Geneva ; extending near nine miles in length, and elevated above the lake not quite 3300 feet. The ſide of it, which is next Geneva, is for the moſt part a barren rock, the N.E. end of it being almoſt a perpendicular precipice ; the other ſide is leſs rude, of a more gentle acclivity, covered with trees, ſhrubs, and herbage, as is alſo the top, where is ſome of the fineſt paſture in the world. It is inhabited only by a few ſhepherds, who paſs the ſummer months here with their cattle, in little miſerable huts or barns ; during the remaining part of the year, *viz.* for about four or five months, it is covered with ſnow. This mountain conſiſts chiefly of a calcareous ſtone ; and there is reaſon to believe that in ſome parts of it there is an iron ore. This was one of the ſtations ſelected by ſir George Shuckburgh for making his obſervations for aſcertaining the heights of mountains : another of his ſtations was the Mola, an inſulated mountain about 18 miles E. of Geneva, and riſing near 5000 feet above the lake. From the ſummit of this mountain the clouds had a ſtriking appearance to an inhabitant of the plain ; very few of them being at above one-fifth of the height ; not governed by the wind, but moving in every poſſible direction. Some of them ſeemed creeping along the ground, whilſt others were riſing perpendicularly between the hills. The clouds obſerved from Geneva were generally three days in the week below the ſummit of Mont Saleve ; ſo that the ordinary region of theſe vapours ſeems to be at that height in the atmoſphere, where the barometer would ſtand at about 26 inches in this climate. Phil. Tranſ. vol. lxvii. p. 538.

SALEYER. See SALAYER.

SALFELD, or SAAL, a town of the duchy of Carinthia ; 6 miles N.E. of Clagenfurt.

SALFELDEN, a town of the archbiſhopric of Salzburg, on the Saal ; 26 miles S.S.W. of Salzburg.

SALFELDT, a town of Pruſſia, in Oberland ; 26 miles S.E. of Marienberg.

SALFERINA, a town of Italy, in the department of the Mincio ; 17 miles N.W. of Mantua.

SALFORD, *Upper* and *Lower*, two townſhips in Montgomery county, Pennſylvania.

SALFORD, a townſhip in the pariſh of Mancheſter, hundred of Salford, and county palatine of Lancaſter, England, is ſituated on the northern bank of the river Irwell, at the diſtance of 180 miles N.W. by N. from London. It is to Mancheſter what Southwark is to the metropolis, being ſeparated from it only by the river above-mentioned, over which are thrown ſeveral bridges to facilitate communication. Salford is a royalty belonging to the crown, and would appear to have been anciently a town of ſome importance, from the circumſtance of its giving name to an extenſive hundred. Here are held two fairs, one at Whitſuntide, the other in November, for horſes, horned cattle, pigs, toys, and various articles of peddling merchandize. The principal ſtreet in Salford extends from the old bridge to the entrance of the town from Warrington to Bolton. It is denominated Chapel-ſtreet from Trinity chapel, which ſtands near its centre, and was founded in the reign of Charles I. The ſecondary ſtreets, which are numerous, branch off from Chapel-ſtreet on both ſides. A new church, called St. Stephen's, was conſecrated in 1794, and the increaſe of the town has, in every reſpect, kept pace with that of Mancheſter. Several of the public buildings are ſituated on the Salford ſide of the river, and among others the New Bayley priſon, over the entrance to which is a commodious and large ſeſſion-room, where the weekly and quarterly ſeſſions are held, beſides various with-drawing rooms for the magiſtrates, jurors, witneſſes, &c.

According to the parliamentary returns of 1811, the townſhip of Salford contains 3718 houſes, and 19,114 inhabitants. (See MANCHESTER.) A brief hiſtorical Deſcription of the Towns of Mancheſter and Salford, &c. 8vo. 1804. Aikin's Mancheſter, 4to. 1795. Beauties of England and Wales, by John Britton, F. S. A.

SALGA, in *Ancient Geography*, a town of Africa, in Mauritania. Steph. Byz.

SALGADO, in *Geography*, a river of Braſil, on the ſouth coaſt, 13 leagues N.E. of Rio Lagoa de Sal, or Salt-lake river; navigable only for ſmall boats, but having a very good harbour behind the ſands.

SALGANEA, or SALGANEUS, in *Ancient Geography*, a town of Greece, in Bœotia, at the paſſage of the Euripus to the iſle of Eubœa.

SALGIR, in *Geography*, a river of Ruſſia, which riſes in the ſouth part of the government of Tauris, and runs into the ſtrait of Theodoſia, on the eaſt coaſt, N. lat 45° 30′. E. long. 36°.

SALGO, a town and caſtle of Hungary; 16 miles S.E. of Korpona.

SALHI, a town of Egypt, on the right bank of the Nile; 3 miles N.E. of Atfieh.

SALHUUS, a town of Norway, in the province of Bergen; 6 miles N. of Bergen.

SALI, a town of Hindooſtan, in Berar; 38 miles W. of Mahur.

SALI, in *Ancient Geography*, a people of European Sarmatia, north of the Agathyrſi. Ptolemy.

SALIÆ, in *Antiquity*, Roman virgins, dreſſed after the manner of the Salii, who aſſiſted the pontiff in ſacrificing. Pitiſc. in voc.

SALIAN, or SALLIAN, JAMES, in *Biography*, was born at Avignon in the year 1557. He entered the ſociety of the Jeſuits at the age of 21, and was ſoon appointed to teach the principles of polite literature at different ſeminaries, in the province of Lyons. After this he was choſen to the office of rector of the college of Beſançon. The remainder of his life he ſpent at Paris. He died in 1640, at the age of 83. He is known as a conſiderable author, and among his works are the following: "Annales Eccleſiaſtici Veteris Teſtamenti, ab Orbe condito uſque ad Chriſti Domini Mortem," in 6 vols. folio; an "Epitome" of the preceding work; "Enchiridion Chronologicum ſacræ et profanæ Hiſtoriæ."

SALIAN *Dance*, in *Antiquity*. See DANCE and SALII.

SALIANAH, in *Geography*, a town of Thibet. N. lat. 28° 8′. E. long. 81° 22′.

SALIANT, in *Fortification*, denotes *projecting*.

The word is formed from the French, *ſaillant*, which ſignifies the ſame thing; of *ſailler*, *to project*, *advance outwards*; and that of the Latin, *ſalire*, *to leap*.

There are two kinds of angles; the one *ſaliant*, which are thoſe that preſent their points outwards; the other *re-entering*, which have their points inwards. Inſtances of both kinds we have in tenailles and ſtar-works.

SALIBABO, in *Geography*, an iſland in the Eaſt Indian ſea, twelve miles long and three broad, with a harbour, called "Leron," on the S.E. coaſt. The inhabitants are ſubject to Sanghir, which is under the dominion of the ſultan of Ternate, and much oppreſſed by their chiefs, who on trivial occaſions ſell them for ſlaves. They manufacture a kind of cloth from wild plantain leaves. This iſland gives name to a group, including Tolour, Kabroang, and another iſland. N. lat. 4°. E. long. 128° 9′.

SALIC, or SALIQUE *Law*, *Lex Salica*, an ancient and fundamental law of the kingdom of France, uſually ſuppoſed to have been made by Pharamond, or at leaſt by Clovis, in virtue of which males only are to inherit.

Some, as Poſtellus, will have it to have been called Salic, *q. d. Gallic*, becauſe peculiar to the Gauls. Cenal takes the reaſon to be, that the law was only ordained for the royal *ſalles*, or palaces. Claud. Seiſſel ſays, it was thus called, becauſe of the *ſalt* and the prudence with which it abounds. Fer. Montanus inſiſts, it was becauſe Pharamond was at firſt called *Salicus*; others, with the abbot Uſperg, derive its name from *Salogaſt*, Pharamond's principal miniſter; and others, from the frequent repetition of the words *Si aliqua*, at the beginning of the articles. Genebrard ſays, it was called *Salic* for *Salomonic*, becauſe Solomon ſet the firſt example of it. Daviſon derives it from the German words *ſalts* and *lick*, q. d. *like to ſalt*. The moſt probable opinion is that which derives the word from the ancient Franks, who were called *Sali*, *Salici*, and *Salingi*, on account of the Sala, a river of ancient Germany. This is the ſentiment of Rhenanus and Æmilius, who are followed by ſeveral others; among the reſt, Menage, Paſquier, Borel, and Juncker. Bouteroue gives another plauſible origin of the word: he ſays it comes from the word *ſalich*, which, in the old Teutonic language, ſignified *ſalutary*; and that the French in this law imitated the policy of the ancient Romans, who made ſalutary laws, which the magiſtrates were to have before them when they adminiſtered juſtice. This he confirms from a curious figure taken out of the Notitia Imperii, where the book is repreſented covered with gold, with this inſcription, *Leges ſalutares*.

Du Haillan, after a critical examination of the Salic law, declares it to have been an expedient of Philip the Long, in 1316, for the excluſion of the daughter of Louis Hutin from inheriting the crown. Father Daniel, on the other hand, maintains, that it is quoted by authors much more ancient than Philip the Long; and that Clovis is the real author of it. The opinion of Du Haillan has been confuted by Meſſrs. Vertot and de Foncemagne, in the Mem. de l'Acad. des Inſcript. tom. ii. p. 603, &c. and tom. viii. p. 490, &c. who trace the exiſtence of the Salic laws to the kings of the firſt and ſecond race. The ſtyle, which is ſcarcely intelligible, and which is in a Latinized dialect, is a mark of its antiquity.

After the Franks had quitted their country, ſays Monteſquieu, they made a compilement of the Salic laws, with the aſſiſtance of the ſages of their own nation. According to M. Leibnitz, in his Treatiſe of the Origin of the Franks, the Salic law was made before the reign of Clovis; but it could not be before the Franks had quitted Germany, for they did not at that time underſtand the Latin tongue.

Before the election of the Merovingian kings, the moſt powerful tribe or nation of the Franks appointed four venerable chieftains to compoſe the Salic laws; and their labours were examined and approved in three ſucceſſive aſſemblies of the people. After the baptiſm of Clovis, he reformed ſeveral articles that were incompatible with Chriſtianity. The Salic law was again amended by his ſons; and at length, under the reign of Dagobert, the code was reviſed and promulgated in its actual force, 100 years after the eſtabliſhment of the French monarchy. Within the ſame period, the cuſtoms of the Ripuarians were tranſcribed and publiſhed; and Charlemagne himſelf, the legiſlator of his age and country, had accurately ſtudied the *two* national laws, which ſtill prevailed among the Franks: the former, or Salic law, extended from the Carbonarian foreſt to the Loire; and the latter, or Ripuarian, might be obeyed from the ſame foreſt to the Rhine.

Latin appears to have been the original language of the Salic law. It was probably compoſed in the beginning of the fifth century, before the era (A.D. 421) of the real or fabulous Pharamond.

The tribe of the Ripuarian Franks having joined itſelf, under Clovis, to that of the Salians, it preſerved its own cuſtoms; and Theodoric, king of Auſtraſia, ordered them to be reduced to writing. He collected likewiſe the cuſtoms of thoſe Bavarians and Germans who were dependent on his kingdom. The Thuringian code was given by the ſame Theodoric, for the Thuringians were his ſubjects. As the Friſians were ſubdued by Charles Martel and Pepin, their law cannot be prior to thoſe princes. Charlemagne, the firſt that reduced the Saxons, gave them the law ſtill extant. As ſoon as the Viſigoths, the Burgundians, and the Lombards, had founded their reſpective kingdoms, they reduced their laws to writing, not with a view of obliging the vanquiſhed nations to conform to their cuſtoms, but with a deſign of regulating their own conduct by them. In the Salic and Ripuarian laws, as well as in thoſe of the Alemans, Bavarians, Thuringians, and Friſians, there is an admirable ſimplicity: they breathe an original ruſticity, and a ſpirit which no other ſpirit had weakened. They received but very few alterations, becauſe all thoſe people, except the Franks, remained in Germany; and even the Franks themſelves laid there the foundation of a great part of their empire, ſo that they had none but German laws. The ſame obſervation is not applicable to the laws of the Viſigoths, of the Lombards, and Burgundians; their character altered conſiderably, from the great change which happened in the character of thoſe people, who had ſettled in their new habitations. The kings of the firſt race ſtruck out of the Salic and Ripuarian laws whatever was abſolutely inconſiſtent with Chriſtianity, but left the chief part untouched; but this cannot be ſaid of the laws of the Viſigoths, which were new-moulded by their kings and by the clergy. The laws of the Burgundians, and eſpecially thoſe of the Viſigoths, admitted of corporal puniſhments; whereas theſe were not tolerated by the Salic and Ripuarian laws. They preſerved their character much better. The biſhops had an immenſe authority at the court of the Viſigoth kings. All the maxims, principles, and views of the inquiſition, afterwards eſtabliſhed, are owing to the code of the Viſigoths, and the monks only copied againſt the Jews the laws formerly enacted by biſhops. The laws of the Burgundians and Viſigoths were impartial; but this was not the caſe with the Salic law, for it eſtabliſhed between the Franks and Romans the moſt mortifying diſtinctions. When a Frank, a barbarian, or one living under the Salic law, happened to be killed, a compoſition of 200 ſols was to be paid to his relations; only 100 upon the killing of a Roman poſſeſſor, and no more than 42 for a Roman tributary. The compoſition for the murder of one of the king's vaſſals, if a Frank, was 600 ſols; of a Roman, though the king's gueſt, only 300. Moreover, if a number of people aſſembled together to aſſault a Frank in his houſe, and he happened to be killed, the Salic law ordained a compoſition of 600 ſols; but if a Roman or a freedman was aſſaulted, only half that compoſition. By the ſame law, if a Roman put a Frank in irons, he was liable to a compoſition of 30 ſols; but if a Frank had thus uſed a Roman, he paid only 15. A Frank ſtripped by a Roman was entitled to a compoſition of 62½ ſols, and a Roman ſtripped by a Frank received only 30.

The country at this day called France was, under the firſt race, governed by the Roman law, or the Theodoſian code, and by the different laws of the barbarians who ſettled in theſe parts. In the country of the domain of the Franks, the Salic law was eſtabliſhed for the Franks, and the Theodoſian code for the Romans. If it be aſked, how comes it to paſs, that the Salic laws gained almoſt a general authority in the country of the Franks, and the Roman law gradually declined; while in the juriſdiction of the Viſigoths, the Roman law ſpread itſelf, and obtained at laſt a general ſway?—Baron Monteſquieu replies, that the Roman law came to be diſuſed among the Franks, on account of the great advantages accruing from being a Frank, a barbarian, or a perſon living under the Salic law; every one, in that caſe, readily quitting the Roman to live under the Salic law. The clergy alone retained it, becauſe a change could be of no advantage to them. The Roman law inflicted no hardſhips upon them, and in other reſpects it was moſt proper for them, as it was the work of Chriſtian emperors. On the other hand, in the patrimony of the Viſigoths, as the Viſigoth law gave no civil advantages to the Viſigoths over the Romans, the latter had no temptation to diſcontinue living under their own law, in order to live under another. They retained, therefore, their own laws, without adopting thoſe of the Viſigoths. In Burgundy the Roman law was continued, in order to regulate the diſputes of Romans among themſelves. The latter had no inducement to quit their own law, as in the country of the Franks; and the rather as the Salic law was not eſtabliſhed in Burgundy. The Roman and Gothic laws continued likewiſe in the country of the eſtabliſhment of the Goths, where the Salic law was never received. The Salic, the Ripuarian, Burgundian, and Viſigoth laws, came by degrees to be diſuſed among the French, becauſe, when fiefs became hereditary, and arriere-fiefs were extended, many uſages were introduced, to which theſe laws were no longer applicable; and as France found itſelf divided into a number of petty lordſhips, which acknowledged rather a feudal than a political dependence, it was very difficult for only one law to be authoriſed. Accordingly the Salic, Burgundian, and Viſigoth laws were extremely neglected at the end of the ſecond race, and at the beginning of the third they were ſcarcely ever mentioned.

The Salic law, or that of the Salian Franks, differed in ſeveral reſpects from that of the Ripuarian Franks, and other barbarous nations. The Salic law did not allow of the cuſtom of negative proofs; that is, if a perſon brought a demand or charge againſt another, he was obliged by the Salic law to prove it, and it was not ſufficient for the accuſed to deny it; and this is agreeable to the laws of almoſt all the nations in the univerſe. In one caſe, however, this kind of proof was allowed; but even then they were not admitted alone, and without the concurrence of poſitive proofs. The plaintiff cauſed witneſſes to be heard, in order to ground his action; the defendant alſo produced witneſſes on his ſide; and the judge was to come at the truth by comparing theſe teſtimonies. The Salic law did not admit of the trial by combat; though it had been received by the laws of the Ripuarians, and of almoſt all the barbarous nations. The Salic law allowed of the ordeal or trial by boiling water, and as it was exceſſively cruel, the law found an expedient to ſoften its rigour; for it permitted the perſon, who had been ſummoned to this trial, to ranſom his hand, with the conſent of the adverſe party. The decline and diſuſe of the Salic and Roman laws were partly, if not principally, owing to their not admitting judicial combats. That particular paſſage of the Salic law, which is commonly diſtinguiſhed by the terms “the Salic law,” has not any particular regard to the crown of France: it only imports, in the general, that with regard to Salic land no part of the inheritance ſhall fall to any female, but the whole to the male ſex. “De terra Salica nulla portio hæreditatis mulieri veniat; ſed ad virilem ſexum tota terræ hæreditas perveniat.” So that it is a popular error to ſuppoſe, that the Salic law was eſtabliſhed purely on account of the ſucceſſion of the crown; ſince it extends to private perſons as much as thoſe of the royal family.

Part of it ſeems to have been borrowed by our Henry I. in compiling his laws, cap. 89. “Qui hoc fecerit, ſecundum legem Salicam moriatur.”

By Salic lands, or inheritances, were anciently denoted all lands, by whatever tenure held, whether noble or baſe, from the ſucceſſion to which women were excluded by the Salic law; for they were by it admitted to inherit nothing but moveables and purchaſes, whenever there were any males. Indeed, M. Fenelon obſerves, that there were originally Salic lands, diſtinguiſhed from all others, and deſtined for the military people of the nation; and to theſe, it is ſuppoſed, the law was originally intended to be confined.

In order to underſtand the nature of theſe Salic lands nothing more is neceſſary, ſays Monteſquieu, than to inveſtigate the uſages and cuſtoms with reſpect to lands amongſt the Franks before they came out of Germany.

Mr. Echard, he ſays, has very plainly proved that the word Salic is derived from *Sala*, which ſignifies a houſe; and that therefore the Salic land was the land of the houſe. Monteſquieu goes farther, and examines what was the houſe, and what the land belonging to the houſe, among the Germans.

“They dwell not in towns,” ſays Tacitus, “nor can they bear to have their houſes joined to thoſe of others; every one leaves a ſpace or ſmall piece of ground about his houſe, which is incloſed and ſhut up.” Tacitus is very exact in this account; for many laws of the Barbarian codes have different decrees againſt thoſe who threw down this incloſure, as well as againſt thoſe who broke into the houſe.

We learn from Tacitus and Cæſar, that the lands cultivated by the Germans were given them only for the ſpace of a year; after which they again became public. They had no other patrimony but the houſe and a piece of land, within the incloſure that ſurrounded it. It was this particular patrimony which belonged to the males. And indeed how could it belong to the daughters? they were to paſs into another houſe.

The Salic land was then within that incloſure which belonged to a German houſe; this was the only property they had. The Franks after their conqueſts acquired new poſſeſſions, and continued to call them Salic lands.

When the Franks lived in Germany, their wealth conſiſted of ſlaves, flocks, horſes, arms, &c.; the houſe, and the ſmall portion of land adjoining to it, were naturally given to the male children who were to dwell there. But afterwards, when the Franks had by conqueſt acquired large diviſions of land, they thought it hard that the daughters and their children ſhould be incapable of enjoying any part of them. They introduced a cuſtom of permitting the father to recall his daughter, and her children. They ſilenced the law; and it appears that theſe recalls were frequent, ſince they were entered in the formularies.

The Salic law had not in view a preference of one ſex to the other, much leſs had it a regard to the perpetuity of a family, a name, or the ſucceſſion of land. Theſe things did not enter into the heads of the Germans; it was purely a law of economy, which gave the houſe, and the land dependent on the houſe, to the males who ſhould dwell in it, and to whom it conſequently was of moſt ſervice.

We need here only tranſcribe the title of the Allodial lands of the Salic law, that famous text of which ſo many have ſpoken, and which ſo few have read.

“1. If a man dies without iſſue, his father or mother ſhall ſucceed him. 2. If he has neither father nor mother, his brother or ſiſter ſhall ſucceed him. 3. If he has neither brother nor ſiſter, the ſiſter of his mother ſhall ſucceed him. 4. If his mother has no ſiſter, the ſiſter of his father ſhall ſucceed him. 5. If his father has no ſiſter, the neareſt relation by the male ſhall ſucceed. 6. Not any part of the Salic land ſhall paſs to the females; but it ſhall belong to the males, that is, the male children ſhall ſucceed their father.”

It is plain that the firſt five articles relate to the inheritance of a man who dies without iſſue; and the ſixth to the ſucceſſion of him who has children.

When a man dies without children, the law ordains that neither of the two ſexes ſhall have the preference to the other, except in certain caſes. In the two firſt degrees of ſucceſſion, the advantages of the males and females were the ſame; in the third and fourth, the females had the preference, and the males in the fifth.

The Salic law enjoins, that after the father’s ſiſter, the ſucceſſion ſhould be held by the neareſt male relation; but if this relation was beyond the fifth degree, he ſhould not inherit. Thus a woman of the ſixth degree, might inherit to the prejudice of a male of the ſixth: and this may be ſeen in the law of the Ripuarian Franks, (a faithful interpretation of the Salic law,) under the title of *Allodial lands*, where it follows ſtep by ſtep the Salic law on the ſame ſubject.

If the father left iſſue, the Salic law would have the daughters excluded from the inheritance of the Salic land, and that it ſhould belong to the male children.

It would be eaſy, ſays Monteſquieu, to prove that the Salic law did not abſolutely exclude the daughters from the poſſeſſion of the Salic land, but only in the caſe where they were excluded by their brothers. This appears from the Salic law itſelf; which, after having ſaid that the women ſhall poſſeſs none of the Salic land, but only the males, interprets and reſtrains itſelf, by adding, “that is, the ſon ſhall ſucceed to the inheritance of the father.”

Monteſquieu maintains, in oppoſition to ſeveral writers on this ſubject, that the Salic lands were not fiefs. Fiefs at firſt were not hereditary: if the Salic lands had been fiefs, how could Marculfus treat that cuſtom as impious which excluded the women from inheriting, when the males themſelves did not ſucceed to fiefs. The charters which have been cited to prove that the Salic lands were fiefs, only prove that they were freeholds. Fiefs were not eſtabliſhed till after the conqueſt, and the Salic cuſtoms ſubſiſted long before the Franks left Germany. It was not the Salic law which, by ſetting bounds to the ſucceſſion of women, formed the eſtabliſhment of fiefs; but it was the eſtabliſhment of fiefs that ſet limits to the ſucceſſion of women, and to the regulations of the Salic law.

After what has been ſaid, one would not imagine that the perpetual ſucceſſion of the males to the crown of France ſhould have taken its riſe from the Salic law. And yet this is a point indubitably certain. Monteſquieu proves it from the ſeveral codes of the barbarous nations. The Salic law and the law of the Burgundians refuſed the daughters the right of ſucceeding to the land in conjunction with their brothers; neither did they ſucceed to the crown. The law of the Viſigoths, on the contrary, permitted the daughters to inherit the land with the brothers; and the women were capable of inheriting the crown. Amongſt theſe people the regulation of the civil law had an effect on the political.

This was not the only caſe in which the political law of the Franks gave way to the civil. By the Salic law all the brothers ſucceeded equally to the land, and this was alſo decreed by a law of the Burgundians. Thus in the kingdom of the Franks, and in that of the Burgundians, all the brothers ſucceeded to the crown; if we except a few murders and uſurpations which took place amongſt the Burgundians. Spirit of Laws, vols. i. and ii.

M. Eccard, a Hanoverian, is ſaid to have recovered an ancient MS. of this famous law, containing a third part of it, much more ample than any yet diſcovered, with a very curious chronology of the ſame law, hitherto unknown.

SALICA, in *Ancient Geography*, a town of Hiſpania, in the country of the Oretani.

SALICARIA, in *Botany*, ſo called by Tournefort, from *ſalix*, a willow, becauſe the moſt common ſpecies grows in willow-beds, or oſier-holts, and ſometimes bears the name of Willow-herb. See LYTHRUM.

SALICARIA, in *Ornithology*. See MOTACILLA *Salicaria*.

SALICARIÆ, in *Botany*, a natural order of plants, the 91ſt in Juſſieu's ſyſtem, the 9th of his 14th claſs, ſee FICOIDEÆ. The name of this order alludes to *Lythrum Salicaria*, one of the beſt known of the plants it contains, and the characters given by Juſſieu are as follows.

Calyx tubular, or pitcher-ſhaped. *Petals* definite, inſerted into the top of the calyx, alternately with its ſegments; ſometimes wanting. *Stamens* definite (indefinite in *Lagerſtroemia* and *Munchauſia*), either the ſame number with the petals, or twice as many, inſerted into the middle of the calyx; anthers ſmall. *Germen* ſimple, ſuperior; ſtyle one; ſtigma often capitate. *Capſule* encompaſſed with the calyx, of one or many cells, with numerous ſeeds, inſerted into a central receptacle. *Corculum* deſtitute of albumen. *Stem* ſhrubby or herbaceous. *Leaves* oppoſite or alternate. *Flowers* axillary or terminal.

Section 1. *Flowers polypetalous.*

This conſiſts of *Lagerſtroemia; Munchauſia*, juſtly ſuſpected to be its congener; *Pemphis* of Forſter, reduced by the younger Linnæus to *Lythrum; Ginoria* of Jacquin and Linnæus; *Griſlea; Lawſonia; Crenea* of Aublet and Schreber; *Lythrum;* with *Aciſanthera*, *Parſonſia*, and *Cuphea* of Browne, the former referred by Linnæus to *Rhexia*, the two latter to *Lythrum*.

Section 2. *Flowers often apetalous.*

Iſnardia; Ammannia; Glaux; and *Peplis*.

The order in queſtion differs in ſeveral reſpects from ſome that agree with it in the inſertion of its ſtamens and petals; as from Juſſieu's *Onagræ*, and *Myrti*, in having a ſuperior germen. Some of the *Melaſtomæ* come nearer to it in this reſpect; but have a different and peculiar ſtructure of anthers. Juſſieu doubts whether the genera conſtituting his ſecond ſection might not be removed to the PORTULACEÆ; ſee that article.

SALICASTRUM, a name by which Pliny, and ſome other botanical authors, have called the *ſolanum lignoſum*, the woody nightſhade, or bitter ſweet. Ger. Emac. Ind. 2.

SALICE, in *Geography*, a town of Naples, in the province of Otranto; 4 miles S.S.W. of Aleſſano.

SALICHA, in the *Materia Medica*, a name given by ſome of the old writers to cinnamon. Avicenna and Serapion uſe it for the bark we call *caſſia lignea*, and the Greeks *hylocaſia*, when ſtripped clean from the wood.

SALICINEA, a name uſed by Geſner, and ſome other authors, for the *nardus celtica*, or Celtic ſpikenard.

SALICO, or SALUCO, in *Geography*, a town of Africa, and capital of a country N. of the Gambia. N. lat. 11° 22′. E. long. 8° 20′.

SALICORNIA, in *Botany*, is generally ſuppoſed to be ſo called from *ſal*, ſalt, and *cornu*, a horn, in alluſion to the horn-like ſhape of the branches, and the ſalt flavour of the whole plant. De Theis however ſays, that the name *Salicot*, or *Salicor*, by which this herb is known in Languedoc, was latinized by Tournefort, as above. The ſame author, nevertheleſs, acknowledges that theſe names originate in *ſal*, and allude to the alkaline ſalt or ſoda obtained from the *Salicornia*.—Linn. Gen. 5. Schreb. 8. Willd. Sp. Pl. v. 1. 23. Vahl. Enum. v. 1. 9. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 2. Ait. Hort. Kew. v. 1. 12. Purſh 2. Brown Prodr. Nov. Holl. v. 1. 410. Juſſ. 86. Tournef. t. 485. Lamarck Illuſtr. t. 4.—Claſs and order, *Monandria Monogynia*. Nat. Ord. *Holeraceæ*, Linn. *Atriplices*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, tumid, entire, permanent. *Cor.* none. *Stam.* Filament one, ſometimes two, ſimple, longer than the calyx; anther oblong, erect, of two roundiſh lobes. *Piſt.* Germen ovate-oblong, ſuperior; ſtyle ſolitary, ſimple, very ſhort; ſtigma with three or more notches. *Peric.* none, except the ſwelling calyx. *Seed* ſolitary.

Obſ. Linnæus remarks, that he once ſaw a ſolitary ſtamen, in the annual ſpecies cultivated; but that other perſons had ſubſequently noticed two. The hiſtory of the ſeveral ſpecies, which differ in the number of their ſtamens, will account for this apparent contradiction.

Eſſ. Ch. Calyx ſwelling, undivided. Petals none. Stamens one or two. Seed ſolitary, encloſed in the calyx.

1. S. *herbacea*. Common Jointed Glaſſwort, or Annual Samphire. Linn. Sp. Pl. 5. Willd. n. 1. Fl. Brit. n. 1, α. Ait. n. 1. Purſh n. 1. Fl. Dan. t. 303. (S. annua; Baſt. Opuſc. v. 2. 105. t. 10. Engl. Bot. t. 415. S. ſive Kali geniculatum; Ger. Em. 535.)—Stem herbaceous, erect; interſtices obconical; joints compreſſed, emarginate. Spikes tapering. Stamen ſolitary.—Common on the ſea ſhores of Europe, in places overflowed by the tide, eſpecially on a muddy ſoil, flowering in Auguſt. It is alſo common all along the coaſt of North America, according to Mr. Purſh, at the ſame ſeaſon. The *root* is ſmall, fibrous, annual. *Stem* erect, now and then curved and inclining at

the bottom, divided above into copious, oppoſite, ſometimes compound, nearly cylindrical, jointed branches, rather tapering towards each end, of a light bright green, quite ſmooth, very ſucculent, and full of a ſalt, bitteriſh, and mawkiſh juice; each joint is much longer than broad, except in the flowering part, ſlightly ſwelling upwards, compreſſed and emarginate on each ſide, at the top. There are no *leaves*. *Spikes* ſolitary at the end of each branch, of which indeed they are a continuation with ſhortened joints, the uppermoſt of which diminiſh gradually. *Flowers* ſmall, about three, ſeſſile and crowded, on each ſide of the baſe of every joint. *Stamen* always ſolitary, with an incumbent yellow *anther*. *Stigma* in three acute ſegments. *Seed* ovate, imbedded in the pulpy calyx. This herb makes a very good pickle, if properly ſeaſoned with ſpices, having little flavour of its own; in which reſpect it differs widely from the true Samphire, or Sampire, *Crithmum maritimum*, found on Dover cliffs, and immortalized by Shakſpeare.

2. S. *procumbens*. Procumbent Jointed Glaſſwort. Engl. Bot. t. 2475. (S. herbacea; Ehrh. Beitr. faſc. 7. 178. Purſh n. 1. β?)—Stem herbaceous, procumbent; interſtices obconical; branches ſimple. Spikes tapering. Stamens two.—Very common in ſimilar ſituations with the preceding, flowering in Auguſt. *Root* annual. *Stem* procumbent, a ſpan long, with ſeveral primary diviſions at the lower part only. *Branches* uſually, if not always, ſimple. Joints of the *ſtem* notched; the interſtices ſwelling upward, compreſſed, or rather quadrangular. *Spikes* tapering, acute. *Stamens* always two to each flower. *Stigma* with many notches. The determination of this diandrous ſpecies accounts for the contradictory accounts of botaniſts; ſome of whom aſſert *S. herbacea*, or *annua* as it is often called, to have but one *ſtamen*, whilſt others as poſitively declare they have found two. We believe the plants ſo circumſtanced to be perfectly diſtinct ſpecies, differing moreover in the growth of their *ſtems*, though even Linnæus undoubtedly confounded them, as his herbarium ſhews.—Whether the *S. herbacea* γ or δ of Fl. Brit. be varieties of this, we have no means of aſcertaining, but muſt refer them to the conſideration of ſome Dorſetſhire botaniſt. Still leſs can we ſay any thing about var. ε of the ſame work, except that it ſeems more likely to belong to the following.

3. S. *radicans*. Creeping Jointed Glaſſwort. Fl. Brit. t. 1691. (S. herbacea β; Fl. Brit. 2. S. erecta, foliis brevibus, cupreſſiformis; Dill. in Raii Syn. 137. Woody Jointed Glaſſwort; Petiv. Herb. Brit. t. 9. f. 4?)—Stem woody; procumbent and taking root at the baſe; joints compreſſed, notched; interſtices nearly cylindrical. Spikes oblong. Stigma deeply three-cleft. Stamens two.—Found on the muddy ſea-coaſt of Norfolk, Suſſex, Dorſetſhire, and other parts of England, flowering in September. This ſpecies appears to be perennial, having a ſhrubby and creeping *ſtem*, which throws up many upright compound *branches*, reſembling the individual plants of *S. herbacea*, and therefore often confounded therewith; but their interſtices are more ſlender and cylindrical; the *ſpikes* not ſo uniform in thickneſs throughout. *Stamens* two. *Stigma* deeply ſeparated into three, occaſionally only two, long narrow ſegments.

4. S. *perennans*. Spreading Perennial Jointed Glaſſwort. Willd. n. 1. Vahl. n. 3. ("S. herbacea β; Pallas It. v. 1. append. n. 89. t. D. f. 1.")—"Stem herbaceous, ſpreading; joints compreſſed, cloven. Spikes axillary, ternate, ſtalked. Scales acute. Root perennial."—Gathered by Pallas, in partly dried marſhes in Siberia. *Willdenow*. Whether this be referrible to any of the foregoing, we have no means of determining, for want of ſpecimens, and an exact deſcription of the *flowers*; but it ſeems diſtinct.

5. S. *fruticoſa*. Shrubby Jointed Glaſſwort. Linn. Sp. Pl. 5. Willd. n. 3. Fl. Brit. n. 2. Engl. Bot. t. 2467. Ait. n. 12. (Kali; Camer. Epit. 246. K. geniculatum perenne fruticoſius procumbens; Raii Syn. 136.)—Stem woody, aſcending; joints and interſtices cylindrical. Spikes nearly ſeſſile, cylindrical, obtuſe. Stigma cloven.—Native of the ſea-coaſt, in the more temperate parts of Europe. Sir Hans Sloane found it in the iſle of Shepey, and Dillenius in the iſle of Grain, in the Thames. Mr. Yalden obſerved it on the ſea-ſhore, all the way from Weymouth turnpike to Rhodipole, but no botaniſt, for many years paſt, has been equally ſucceſsful there, ſo that in order to procure a figure of this ſpecies for Engliſh botany, recourſe was neceſſarily had to one of Mr. Yalden's original ſpecimens, now, with all Mr. Lightfoot's herbarium, in the hands of the Queen. Theſe ſpecimens have been moſt carefully compared with that in the Linnæan collection. The ſhrubby *ſtem*, repeatedly branched; the cylindrical ſlender interſtices of the joints; and the ſmall, ſhort, denſe *ſpikes*, all ſeem to eſtabliſh this as a ſpecies, eſpecially as the *ſtigma* has only two, and thoſe very ſhort, diviſions. The laſt character ſurely keeps it diſtinct from *S. radicans*, n. 3. however liable the other particulars might be to variation. Whether a ſucceſſion of mild winters might occaſion ſuch an alteration in the habit of the *radicans*, we ſhould ſcarcely diſpute, were there no difference in the *ſtigma*.

Willdenow, under *S. fruticoſa*, tranſcribes a remark from Linnæus which contraſts this plant with *herbacea*, though he himſelf has inſerted an intermediate ſpecies, to which, for want of a neceſſary correction in the wording of the paſſage, it actually refers, and might cauſe great perplexity to an implicit reader.

6. S. *ſtrobilacea*. Catkin Jointed Glaſſwort. Pallas It. v. 1. 481. n. 91. t. B. Willd. n. 4. Gærtn. t. 127. (S. arboreſcens, ſine geniculis; Buxb. Cent. 1. 6. t. 10. f. 2.)—Stem proſtrate, ſhrubby; joints abrupt. Spikes oppoſite, cylindrical, ſhort, obtuſe.—Native of the ſalt cliffs about the Caſpian ſea. The *ſtem* is branched, with cylindrical joints, ſcarcely dilated ſufficiently to be notched. *Spikes* very numerous all along the upper part of the branches, moſtly oppoſite and equal, from half an inch to an inch long, formed of very ſhort and crowded joints, with (as far as we can judge by the dried ſpecimen) three *flowers* on each ſide of every joint, and two *ſtamens* to each flower.

7. S. *virginica*. Virginian Jointed Glaſſwort. Linn. Sp. Pl. ed. 1. 4. Willd. n. 5. Purſh n. 2. (S. caulium ramorumque articulis apice bicornibus; Gronov. Virg. ed. 1. 129.)—Stem herbaceous, erect. Joints compreſſed at the top, emarginate, with two points.—Frequent on the coaſt of Virginia and Carolina, flowering in July and Auguſt. *Root* annual. Smaller than *S. herbacea*, n. 1, and of a more ſlender habit. Mr. Purſh thinks it ſcarcely diſtinct from that ſpecies. We have merely ſeen this plant in the Gronovian herbarium at ſir J. Banks's, when we were enabled to determine one point at leaſt, that Linnæus, having originally deſcribed the Virginian plant in the firſt edition of *Species Plantarum*, and confounded therewith a German variety (as Willdenow judges it) of the *herbacea*, fell into another error on receiving Browne's herbarium from Dr. Solander. He there found a Jamaica ſpecimen, which is defined and deſcribed in his *Syſt. Veg.* as *virginica*, with mention of a ſpecies from Virginia, lately examined by him in a living ſtate, whoſe "*calyx* was an ovate erect ſcale, hollow like a ſpoon; the *ſtamens* certainly two; the *piſtil* ſuperior." What this laſt might be we know not. We ſhall now deſcribe the Jamaica ſpecimen.

8. S. *polyſtachya*. Many-ſpiked Jointed Glaſſwort.—(S. vir-

(S. virginica ; Linn. Syſt. Veg. ed. 13. 51. S. n. 1 ; Browne Jam. 112.)—Stem herbaceous, erect ; branches ſimple ; joints with a dilated, abrupt, double-pointed, ſpreading border. Spikes terminal, ſolitary, very long, tapering, with numerous, ſhort, bordered joints. Stamen ſolitary.—Obſerved by Browne very abundantly in Jamaica, in low ſalt-marſhes near the ſea. *Root* ſmall, annual. *Stem* from eight to eleven inches high ; naked below ; buſhy above, with many oppoſite ſhort ſimple *branches*, whoſe interſtices are ſhort and cylindrical, each crowned with a remarkably dilated border at the joint. Every *branch* ends in a ſimple *ſpike*, five or ſix times its own length, and much thicker, tapering at each end, compoſed of innumerable joints, ſcarcely ſo long as broad, three-flowered at each ſide, as in *herbacea* and its allies, and bordered at the upper edge. Browne ſays there is "but one *ſtamen* to each *ſtyle*."

9. S. *arabica*. Arabian Jointed Glaſſwort. Linn. Sp. Pl. 5. Suppl. 81. Willd. n. 6. Ait. n. 3. "Pall. It. v. 1. append. n. 92. t. D. f. 3." (S. arboreſcens geniculata ; Buxb. Cent. 1. 6. t. 10. f. 1 ? Kali geniculatum alterum, vel minus ; Moriſ. ſect. 5. t. 33. f. 7.)—Stem ſhrubby ; joints cloven, gibbous at each ſide, ſomewhat leafy. Spikes ovate.—Native of Arabia and Siberia. A ſhrubby buſhy ſpecies, repeatedly branched ; the interſtices of the *branches* not much longer than broad, turbinate, thick, and fleſhy, each cloven ſo deeply at the ſummit as to reſemble a pair of oppoſite ſheathing leaves. *Spikes* terminal, ovate, ſhort, and thick. The figure in Buxbaum appears to us better than that of Moriſon. *S. perfoliata*, Forſk. Egypt-Arab. 3, but not his t. 1, is ſuppoſed to be this plant.

10. S. *foliata*. Leafy Jointed Glaſſwort. Linn. Suppl. 81. Willd. n. 7. "Pall. It. v. 1. append. n. 93 t. F." —Leaves linear, alternate, decurrent, and partly embracing the ſtem.—Native of Siberia. *Stem* woody, leafy, with long, round, alternate branches. This ſpecies, unlike almoſt every other, has real elongated *leaves*, whoſe decurrent baſes only are incorporated with the branch, forming as it were an imperfect or half joint. Yet they have ſo much the air of a *Salſola*, that nothing leſs than the authority of profeſſor Pallas could perſuade us that the plant belongs to *Salicornia*. The *ſpikes* are ſhort, ovate, and alternate.

11. S. *amplexicaulis*. Heart-leaved Jointed Glaſſwort. Vahl. Symb. faſc. 2. 1. Willd. n. 8.—"Leaves heart-ſhaped, claſping the ſtem."—Native of the ſhores of a lake near Bardo in Tunis. *Stem* decumbent, ſhrubby at the baſe, four or five inches long, much branched ; the branches axillary, alternate, widely ſpreading, an inch and a half long, two always near together. *Leaves* ſmall, alternate, bluntiſh, convex beneath, flattiſh above ; imbricated on the younger branches. *Vahl.* This having, as it ſeems, real *leaves*, perhaps confirms the genus of the laſt.

12. S. *caſpica*. Tamariſk Jointed Glaſſwort. Linn. Sp. Pl. 5. Willd. n. 9. Vahl. n. 8. "Pall. It. v. 1. append. n. 90. t. D. f. 2." (S. arboreſcens, tamariſci facie ; Buxb. Cent. 1. 7. t. 11. f. 1.)—Stem ſhrubby ; branches thread-ſhaped ; with crowded, dilated, bordered joints. Spikes ovate.—Gathered by Buxbaum in muddy places about the Caſpian ſea, as well as in Media. The genuine ſpecimens of this ſpecies have numerous, crowded, ſlender, ſimple *branches*, compoſed of very ſhort fleſhy interſtices, between very broadly bordered joints. *Spikes* terminal and lateral, oppoſite, ſtalked, ovate, obtuſe. In one of the Linnæan Siberian ſpecimens the *flowers* are further advanced, the *ſpikes* more elongated, and the joints of the *branches* diſtant, with more ſlender and leſs ſucculent interſtices. The appearance of this ſpecimen is ſo different from the original and moſt authentic one, that, though named by Linnæus, we feel ſome doubt as to its identity. Neither can we be certain as to the *S. caſpica* of the learned Marſchall von Bieberſtein, deſcribed in Sims and Konig's Annals of Botany, v. 2. 400, particularly reſpecting Buxbaum's ſynonym ; nor can we from dried ſpecimens judge of the fructification, ſo carefully deſcribed in the place juſt quoted. Is it poſſible that *ſtrobilacea*, n. 6, could be the plant there deſcribed ?

13. S. *cruciata*. Croſſed Jointed Glaſſwort. Forſk. Ægypt-Arab. 2. Ic. t. 1. (perfoliata). Vahl. n. 6.—Stem ſhrubby ; lower joints of the branches nearly globular ; upper cylindrical, horizontal, croſſing each other.—Found by Forſkall on the ſouth ſide of the ſalt-pits at Alexandria. The Arabs call it *Sabta*. The *ſtem* is procumbent, round. *Branches* crowded, erect, moſtly undivided, about a finger's length, tapering at each end, their lower joints barren, tuberculated with a ſix-fold row of ſcales ; the more numerous upper ones much larger, horizontally prominent at each ſide, furniſhed with many ſucculent ſcales, from which the *flowers* proceed. *Stamen* one. *Stigma* deeply cloven.

14. S. *glauca*. Glaucous Jointed Glaſſwort. Deliſle Pl. Ægypt. MSS. (S. virginica ; Forſk. Ægypt-Arab. 2. *Chræſi* of the Arabs.)—Stem ſhrubby ; interſtices cylindrical. Spikes cylindrical, of numerous cup-ſhaped, dilated, ſlightly cloven, imbricated, many-flowered joints, broader than long. —Communicated by Dr. Deliſle from Egypt. A large ſpecies, whoſe *ſtem* ſeems to be procumbent, throwing up many *branches*, a foot high, compoſed chiefly of numerous, oppoſite, or aggregate, erect *ſpikes*, two inches or more in length, and formed of imbricated cup-like joints ; each of which bears at its upper part three *flowers* on each ſide, hardly projecting beyond the margin. Forſkall ſays the plant is of a greeniſh-blue, covered with a fine powder, which being wiped off, the ſurface becomes bright green.

A ſpecimen from the abbé Pourret, gathered at Narbonne, and ſent for *S. fruticoſa* of Linnæus, comes nearer the preſent ſpecies than any other, and indeed ſeems the ſame of a rather more humble form of growth.

15. S. *indica*. Indian Jointed Glaſſwort. Vahl. n. 2. Willd. Nov. Act. Natur. Scrut. Berol. v. 2. 111. t. 4. f. 2. Brown n. 1.—Stem ſhrubby, diffuſe, with numerous aſcending branches ; interſtices club-ſhaped, compreſſed, abrupt. Spikes cylindrical, with very ſhort, cloſely imbricated, many-flowered joints. Stamens two.—Gathered by the Rev. Dr. Rottler abundantly in the extenſive plains on the ſea-coaſt of Tranquebar ; and by Mr. Brown on all parts of the ſhores of New Holland that he viſited. This is a large and very ſucculent ſpecies, light and ſpongy when dry, whoſe thick woody *ſtem* throws up many principal *branches* about a foot long, compoſed of numerous, ſhort, oppoſite, ſimple ones, each terminating in a ſolitary, thick, cylindrical *ſpike*, an inch and a half long, formed of numerous, cloſe, very ſhort and abrupt, ſlightly cloven and pointed, *joints*. Each *joint*, according to Mr. Brown, bears from five to ſeven diandrous flowers.

16. S. *Arbuſcula*. Little Buſhy Jointed Glaſſwort. Brown n. 2.—"Stem ſhrubby, erect ; interſtices oblong, ſomewhat club-ſhaped, emarginate. Flowers ternate. Stamen one."—Gathered by Mr. Brown in Van Diemen's iſland, as well as on the neighbouring ſouth coaſt of New Holland. This requires to be contraſted with ſome of the above-deſcribed ſhrubby ſpecies, but we have not materials for the purpoſe.

17. S. *ambigua*. Doubtful Jointed Glaſſwort. Michaux Boreali-Amer. v. 1. 2. Purſh n. 3.—"Stem ſhrubby,
aſcending,

aſcending, irregularly branched, ſpreading."—In ſedgy ſalt meadows, from New Jerſey to Carolina, flowering in July and Auguſt. Either biennial or perennial, pale green. It reſembles *S. fruticoſa* very much, and is taller than either of the other American ſpecies, n. 1. and 7. *Purſh.* Michaux deſcribes it as ſpreading in a looſe and irregular manner.

Some other ſpecies probably remain to be accurately determined, in various parts of the world; of which we have hitherto but mutilated ſpecimens, or imperfect accounts.

SALICOTTA, in *Geography*, a town of Hindooſtan, in Myſore; 9 miles E. of Chinna Balabaran.

SALIENS PUNCTUM. See PUNCTUM.

SALIENT, SALIANT, or *Sailant*, in *Heraldry*, is applied to a lion, or other beaſt, when its fore-legs are raiſed in a leaping poſture.

A lion ſalient is that which is erected bend-ways; ſtanding ſo that his right fore-foot is in the dexter chief point, and his hinder left-foot in the ſiniſter baſe point of the eſcutcheon; by which it is diſtinguiſhed from rampant.

SALIERI, ANTONIO, in *Biography*, an Italian compoſer, born at Venice, maeſtro di cappella to the emperor. He had been a ſcholar of Peſcetti, and afterwards of Gaſman. Many of Salieri's productions had very conſiderable ſucceſs the latter end of the laſt century. He has ſet operas in Italian, German, and French; but has chiefly diſtinguiſhed himſelf at Vienna, where he compoſed for five or ſix different theatres. In 1784, he ſet "Les Danaïdes," a ſerious opera, for the Academie Royale de Muſique at Paris, which had great applauſe, even in competition with the operas of Gluck, Piccini, and Sacchini. Since that period he has produced, for the ſame theatre, "Les Horaces," and "Tarare." This laſt has had a very uncommon ſucceſs.

SALIES, in *Geography*, a town of France, in the department of the Lower Pyrenées, and chief place of a canton, in the diſtrict of Orthès; 8 miles W. of Orthès. The place contains 6419, and the canton 14,679 inhabitants, on a territory of 160 kiliometres, in 14 communes.

SALIGNAC, a town of France, in the department of the Dordogne, and chief place of a canton, in the diſtrict of Sarlat. The place contains 1184, and the canton 7555 inhabitants, on a territory of 210 kiliometres, in 11 communes.

SALII, in *Antiquity*, prieſts of Mars, of whom there were twelve inſtituted by Numa, for preſerving the brazen ſhield which was ſaid to have fell down from heaven, in the eighth year of the reign of Numa, for the relief and ſafety of Rome, againſt a raging peſtilence; and alſo thoſe other eleven ſhields made ſo much to reſemble this, that they could not be diſtinguiſhed from one another: they wore painted parti-coloured garments, and high bonnets, with a ſteel cuiraſs on the breaſt.

They had their name Salii from *ſaltare, to dance;* becauſe, after aſſiſting at ſacrifices, they went dancing about the ſtreets with ancilia, or bucklers, in the left hand, and a rod in their right, ſtriking muſically on one another's bucklers with their rods, and ſinging hymns in honour of the gods. Their great feaſt was kept in the month of March, when they carried their ſacred charge about the city. They alſo carried about the ancilia whenever a juſt war had been proclaimed by order of the ſenate againſt any ſtate or people, ſuppoſing that by this means they ſecured the patronage and ſuccour of Mars. There were two companies or colleges of the Salii; the ancient eſtabliſhed by Numa, called *Palatina;* the latter by Tullus Hoſtilius, called *Collini* and *Agonales.* Though Servius tells us there were two kinds inſtituted by Numa, the *Collini* and *Quirinales;* and two others by Tullus, the *Pavorii* and *Palorii.*

In ſinging, they uſed a peculiar ancient ſong, called *Saliare Carmen;* and after the ceremony they were entertained with a feaſt; whence *Saliares Epulæ,* and *Saliares Dapes,* paſſed into a proverb for good eating.

Their chief, called *præſul,* and *magiſter Saliorum,* was one of their number. It was he that led the band, and began the dance; the reſt imitating all his ſteps and motions. The whole company was called *Collegium Saliorum.*

Sext. Pompeius makes mention of *Salian maids, virgines Saliares,* hired for the purpoſe, and joined with the Salii, wearing a kind of military garb, called *paludamentum,* with high round bonnets like the Salii, and like them performing ſacrifice with the pontifices in the palaces of kings.

SALIM, in *Geography*, a river of Ruſſia, which runs into the Oby, 60 miles W. of Surgut.—Alſo, a town of Perſia, in the province of Kerman; 140 miles E.N.E. of Sirgian.

SALIMBENI, VENTURA, in *Biography*, was born at Sienna in 1557, and was inſtructed in the art of painting by his father Archangelo Salimbeni, a painter of conſiderable note in that city. He afterwards travelled through various parts of Italy to cultivate and improve his talents, by the ſtudy which the works of other and greater maſters afforded him; and particularly attached himſelf to the Lombard ſchool. At Rome he applied his time to the ſtudy of the antique, and perfected himſelf in deſign to a conſiderable degree of excellence.

He had a ready invention, with much elegance and taſte, but lacked expreſſion. His colouring is agreeable and harmonious, and he had conſiderable ſkill in the management of the chiaro-ſcuro. The principal teſtimonies of his art are preſerved at Rome, Florence, Genoa, and his native city of Sienna; and his ſmaller works are not uncommon in this country. At Wilton is one of much value, repreſenting the deſcent of the Holy Ghoſt. This maſter is generally known in Italy under the name of Bevilagna; the cardinal Bonifacio Bevilagna, who was his patron, having given it to him. He died in 1613, aged 56.

SALIMBENI, FELICE, an opera ſinger, born at Milan in 1712, who flouriſhed from 1730 to 1750, and obtained the higheſt reputation and favour, from his perſonal figure, and pathetic manner of ſinging. He was the contemporary and friend of Monticelli. In 1737 he was in the ſervice of the emperor Charles VI. at Vienna; and in that of the king of Pruſſia in 1742. In 1750 he went to Dreſden, and died in 1751. He was not ſo good an actor as Monticelli; but his voice and expreſſion in ſinging, and the beauty of his perſon, procured him conſtant ſucceſs and admiration.

SALIMPOUR, in *Geography*, a town of Hindooſtan, in Bahar; 20 miles S. of Bettyar.

SALINA, a village at the S.E. end of Onondago lake, in New York, in the county of Onondago. On lands reſerved here by the ſtates are ſalt-ſprings, whoſe waters cover ſeveral acres of ground; and the water is ſaid to be ten times ſalter than that of the ſea. The ſalt is obtained by boiling the water till the freſh particles are evaporated: the country to a great diſtance around is ſupplied with ſalt from this ſpring.

SALINA *della Marſa*, ſalt-ſprings in the iſland of Sicily, near the town of Marſa. When this ſalt-pit is dried up in ſummer, a great quantity of ſalt remains, and is ſhovelled by labourers into heaps. For every aſs-load the lord of the manor receives a Sicilian carlin, about one penny, and for a mule-load twice as much. When this pit yields but little ſalt, the ſtewards cauſe it to be ploughed up as ſoon as dry, and then it yields as much ſalt as before.

SALINÆ, CASTELLANÆ, in *Ancient Geography*, a town of Gallia Narbonenſis, N.E. of Antea; placed by Ptolemy in the

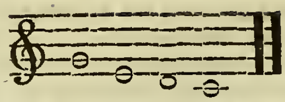
Maritime Alps, and deriving its name from its ſalt-fountains. —Alſo, a place of Italy, in that part of Magna Grecia called Apulia.—Alſo, a place of Italy, on the ſea-coaſt, in Picenum. —Alſo, a place of Gaul, attributed by Ptolemy to the Suetri, ſuppoſed by M. d'Anville to be the preſent Saillans, in the northern part of the dioceſe of Frejus.

SALINÆ. See SALT and SALT-*Marſhes*. See alſo SALINE.

SALINAS, FRANCIS, in *Biography*, a native of Burgos, in Spain, was blind from his infancy, having, as he ſays, ſucked in that calamity with the infected milk of his nurſe. His parents, ſoon perceiving that the ſtudy of muſic might be purſued by him in ſpite of this misfortune, had him taught very early to ſing and play upon the organ. It was by mere accident that he acquired any knowledge in the learned languages; for while he was a boy, a young woman, celebrated for her knowledge in the Latin tongue, and who was going to take the veil, having a great deſire to learn to play on the organ, came to his father's houſe, and, in return for the leſſons which ſhe received from Salinas in muſic, taught him Latin. After this, he was ſo eager to purſue the ſtudy of literature, that he prevailed on his parents to ſend him to Salamanca, where, during ſome years, he applied himſelf cloſely to the ſtudy of the Greek language, philoſophy, and the arts in general. Dr. Smith, who ſeems never to have ſeen Salinas's treatiſe on muſic, though he quotes it, ſays, that "*after his return* into Spain, he applied himſelf to the Latin and Greek languages, and cauſed all the ancient muſicians to be read to him, &c." (Harmonics, p. 50. 1ſt edit.) It is not, perhaps, of much conſequence, whether Salinas ſtudied the learned languages in youth or age; but inaccurate aſſertions on one ſubject throw doubts upon others. Salinas, unable to ſupport himſelf longer in that univerſity, was introduced in the king's palace to Peter Sarmentus, archbiſhop of Compoſtella, who received and treated him very kindly, and who being ſoon after created a cardinal, carried Salinas with him to Rome. Here he had not only an opportunity of converſing with the learned, but of conſulting ancient manuſcripts, particularly thoſe on muſic, in the Greek language, which have been ſince collected and publiſhed by Meibomius and Dr. Wallis. (Antiq. Muſ. Auct. ſeptem, Amſt. 1562. Claud. Ptol. Harm. et Man. Bryennii, Lond. 1699.) In theſe ſtudies he ſpent thirty years; when the death of his patrons, cardinal Carpenſis, cardinal Burgos, and the viceroy of Naples, by whom, he ſays, (in Præf.) he was more beloved than enriched, determined him to return to Spain, and paſs the remainder of his days in humble obſcurity: but, on his arrival at Salamanca, he was appointed public profeſſor of muſic, and read lectures in that univerſity both on the theory and practice of the art. However, by his long ſtudy of Boethius, as well as the ancient Greek theoriſts, his doctrines ſeem to have been chiefly ſpeculative, and confined to calculations of ratios, diviſions of the monochord, ſyſtems of temperament, and the muſical pedantry of the times, without beſtowing a thought upon harmony, modulation, or even melody; except ſuch as the eccleſiaſtical modes and ſpecies of octave ſupplied.

However, the treatiſe upon muſic written by Salinas is not only ſcarce, but, on many accounts, valuable; as it is written with clearneſs by a practical muſician, who ſatisfactorily explains ſeveral parts of ancient muſic, which, though of little uſe to the modern, will at leaſt gratify the curious; and though he treats of ſects and ſubtilties, concerning which the preſent ſtudents, either in the theory or practice of the art, are not much intereſted; yet as the curioſity of ſome enquirers is boundleſs, and as the doctrines now exploded or contemned are here collected into a point, thoſe who fancy they can be amuſed or inſtructed by the peruſal of ſuch diſcuſſions, will think themſelves in poſſeſſion of a great literary treaſure, when they are ſo fortunate as to find this work, which has for title, "Franciſci Salinæ Burgenſis, abbatis Sancti Pancratii de Rocca Scalegna in regno Neapolitano, et in academia Salmanticenſi Muſicæ profeſſoris, de Muſica libri ſeptem, in quibus ejus doctrinæ veritas tam quæ ad Harmoniam, quàm quæ ad Rhythmum pertinet, juxta ſenſus ac rationis indicium oſtenditur, et demonſtratur. Salamanticæ, 1577." The firſt book, containing twenty-eight chapters, is merely ſpeculative, treating of nothing but the different methods of calculating the ratios of ſound; and of arithmetical, geometrical, and harmonical proportion. Second, definitions of ſound, intervals, concords perfect and imperfect, and diſcords; greater and leſs tone and ſemitone, the dieſis, apotome, limma, and comma; twenty-nine chapters: in one of which he takes up the gauntlet in defence of the 4th being a concord, which practical muſicians had then but lately began to rank among diſcords. Salinas ſays, that he had with pleaſure often heard it uſed in the Greek church at Naples; and that the prince of all contrapuntiſts, Joſquin des Pres, in the beginning of the verſe *reſurrexit*, of two parts only, in his maſs *ſur l'Homme Armé*, in the 6th tone, has uſed it naked and unaccompanied by any other interval, which he would not have done, if he had regarded it as a diſcord. Third, treats of the three genera, diatonic, chromatic, and enharmonic, ſuch as were uſed by the ancients; for the moderns have no chromatic ſtrictly ancient, nor enharmonic of any kind. Dr. Pepuſch has aſſerted, in his letter to M. de Moivre, that Salinas had diſcovered the true *enharmonic* genus of the ancients. How much it is to be lamented that neither Salinas nor Dr. Pepuſch has obliged the longing world with enharmonic compoſitions in counterpoint, to confirm their converts in the faith, and not only renovate, but extend the uſe of this long loſt genus! As it is, the diſcovery of Salinas, and poſitive aſſertion of Dr. Pepuſch, remain, to vulgar ears, as uſeleſs, and as much matters of faith, as the muſic of the ſpheres. Salinas ſays nothing of the major or minor modes or keys in preſent uſe, which are more the buſineſs of a modern muſician than the chromatic or enharmonic of the ancient Greeks and Romans. It is in this book that the author has incurred the diſpleaſure of the abbé Rouſſier, by treating of the different methods of correcting falſe conſonances and intervals by *temperament.* (Eſſai ſur la Muſique, tom. iii. p. 366.) Temperament was probably not a thing of choice with Zarlino or Salinas; but an expedient to obviate the greater imperfections which would accrue to harmony by partial perfection (all that can be attained), on fixed inſtruments. Fourth, chiefly treats of the different ſpecies of diapaſon or octave; of the hexachords, ſaid to have been invented by Guido, and of their correſpondence and connection with the tetrachords of the Greeks. Of the ancient modes or tones of Ariſtoxenus and Ptolemy, of the doctrines of Pythagoras, Ariſtoxenus, and Boethius; all which he freely cenſures. The participation or equal diviſion of ſemitones by Ariſtoxenus, defended. The doctrines of Didymus, Ptolemy, Bryennius; and of the more modern theoriſts, Faber, Franchinus, Glareanus, Fogliano, and Zarlino; thirty-three chapters: in the laſt of which there is an encomium upon Zarlino, and an epitome of his writings.

The fifth, ſixth, and ſeventh books chiefly concern rhythm, and the feet of ancient Greek and Roman verſes; theſe he has expreſſed in muſical notes; and though he uſes only two kinds, the ſemibreve and minim, for the long and ſhort ſyllables, the variety of meaſure ariſing from this mixture is wonderful!

Theſe four ſounds only  affording thirty-four different mutations of meaſure, in the arrangement of long and ſhort notes and ſyllables. Salinas ſeems of opinion, that the ancients had no muſic ſtrictly inſtrumental; but that all melody was originally derived from the different order of ſyllables in verſification, and had been firſt ſet to words, before it was played by inſtruments; and this was the opinion of the late Rouſſeau. (Dict. Muſ. art. *Muſique*. Edit. 8vo. p. 309.) Even for the movement and meaſures of dance tunes, ſuch as the pavan and paſſamezzo, he finds correſponding Latin and Spaniſh verſes; and the moſt curious parts of theſe laſt chapters to us are the little fragments of old Spaniſh melody, which belong to his ſpecimens of verſification. Some of them are very graceful and pleaſing, particularly thoſe in triple time, which reſemble the Neapolitan meaſures more than any other in preſent uſe. The reader may conſult Dr. Burney's "General Hiſtory of Muſic," vol. iii. pp. 294, 295, for characteriſtic fragments of ſeveral kinds of Latin and Spaniſh metre, in notation.

Salinas is ſaid to have been an admirable performer on the organ; an inſtrument which ſeems peculiarly happy in its conſtruction for the diſplay of great muſical talents, after the privation of ſight: for not only Salinas, but Franceſco Cieco, the firſt great organiſt upon record; Pothoff, the late excellent organiſt at Amſterdam; and our own Stanley, who delighted the lovers of that inſtrument more than fifty years, ſeem, with reſpect to their performance, rather to have gained than loſt by this calamity. Milton, we are told, could amuſe *himſelf*, and Handel, we know, had the power of delighting *others*, upon this inſtrumnent, after total blindneſs, though it came on late in life.

Salinas died in 1590, at 77 years of age.

Salinas, in *Geography*, a town of Spain, in the province of Guipuſcoa, on the borders of Alava, near mount St. Adrian; owing its name to the ſalt-ſprings, and diſtant 16 miles N.E. from Vittoria.

Salinas *Bay*, a bay on the coaſt of Peru, 60 miles N. of Callao. S. lat. 11° 12′.—Alſo, a large bay of the Pacific ocean, on the coaſt of Coſta Rica. N. lat. 10°. W. long. 85° 36′.—Alſo, a bay on the coaſt of Braſil, S.E. of cape Cors. Veſſels reſort hither for ſalt. North-eaſt of the entrance into the harbour are Salinas ſhoals, or Baxos de Salina. S. lat. 5°. W. long. 36°.

Salinas, *Cape*, a cape on the coaſt of Terra Firma, oppoſite to the N.W. point of the iſland of Trinidad, which forms the paſſage called the gulf of Paria, 3 leagues S. or S. by W. from cape Tres Puntas.

Salinas *Gulf*, lies on the W. coaſt of Mexico, N.W. of the iſland of Cano, which is in N. lat. 8° 40′.

Salinas *Point*, a point on the S. coaſt of the iſland of St. Domingo, having to the N.N.W. the famous bay of Ocoa, which is 18 leagues W.S.W. of the city of St. Domingo.

SALINCÆ, in *Ancient Geography*, a people of Africa, in Mauritania Tingitana. Ptolemy.

SALINE, in *Geography*, a hamlet in Louiſiana, ſituated on the W. bank of the river Miſſiſippi, at the mouth of a creek, 2 miles below St. Genevieve. The Illinois country is wholly ſupplied with ſalt from the ſpring at this place; 9 miles S.W. from Kaſkaſkias.

Saline *Creek*, a river of America, which runs into the Ohio, N. lat. 37° 23′. W. long. 88° 37′.

Saline, a name given to a preparation of ſea-ſalt, procured from the froth of the ſea, hardened by the ſun in hot countries. It is called by ſome authors *pilatro de Levante*, and is uſed in glaſs-making; and in the making the fine purple colour from cochineal, by boiling it in a ſmall quantity, with the bran and fœnugreek, of which the magiſtery is made for that purpoſe.

Saline is alſo the name given by authors to ſprings of ſalt-water, called by us *ſalt-wells*, *ſalt-ſprings*, and *brine-pits*. Moſt parts of the world are found to have theſe; but thoſe of Franche Compté, in France, ſeem to be the moſt remarkable. The ſprings are ſituated in deep caves, and thoſe in the greater work are about four hundred feet in length and fifty in breadth; into this work they deſcend by a ſtone ſtaircaſe of forty ſteps, and thence by a wooden one of twenty: at the bottom of theſe ſtairs is a cave with an arched roof. The firſt cave, or vault, is forty feet long, and thirty-two feet and a half broad, and in it are ſix ſprings of ſalt-water, and two ſprings of freſh-water; all which iſſue out of the ſame rock, in the ſpace of fourteen feet in length. From this cave they go into others, which are ſupported in the middle, each by a row of thick pillars, from which are carried double rows of arches. They then paſs through two gates into a ſpacious vault, thirty-five feet high, and ſupported, nigh the entrance, by four ſtrong pillars, placed in form of a ſquare. In the middle ſpace, between theſe pillars, is a baſon of a very conſiderable ſize, into which the ſalt-water from ſeveral ſprings is collected; and in the ſame vault, beyond theſe pillars, are four others placed in a row, ſupporting different arches, of ſixty feet in length and forty-eight in breadth; beyond which there is an irregular ſpace ſixty-three feet long, in which are ſix or ſeven ſprings of ſalt-water, and ten or twelve of freſh. The ſalt-waters of theſe ſprings, and of the ſix ſprings before-mentioned, are kept ſeparate from the freſh-water, and are all conveyed through gutters to the baſon before-mentioned. From this baſon they are drawn out by a wheel and buckets into four large ſtone baſons or reſervoirs, one of which holds 15,000 hogſheads, and the other three together 25,000 hogſheads. From theſe reſervoirs they are to be drawn off, as occaſion requires, into ſmall ciſterns placed near the boiling-houſes; and the waters contained in the ſeveral baſons, as they are drawn from ſprings, at different times, and are of different ſtrength, are mixed together before the boiling, in ſuch proportion that each pound of the water yields three ounces of ſalt.

The water of the freſh ſprings is alſo collected in the caves into a freſh-water baſon prepared to receive it, and raiſed by means of a crane to the level of a little brook, through which it runs away by a ſubterranean conduit. Brownrig of Salt, p. 94.

Saline *Principle*, a term uſed by ſome chemical writers to expreſs a conſtituent part of ſeveral mixt bodies, on which their exiſtence in that form depends; and which, though always exiſtent in them, and always ſeparable by art, is yet not perceivable in many of them in the complex. See Salt.

The ſaline principle of vitriol is of the number of thoſe made by ſome neceſſary principle of the exiſtence of that body, and by others ſuppoſed not to exiſt at all, otherwiſe than in the general form of that compound ſalt. But the exiſtence of it, in a ſeparate ſtate, is proved by this experiment: take four or five gallons of the ſtrong vitriolate water at the water-works, as it runs from the beds of pyrites to the great ciſtern; this is to be choſen, becauſe having yet undergone no operation but that of the air and water, it muſt needs be in the moſt ſimple and natural ſtate; diſtil from this about two-thirds of the inſipid water, let the glaſſes cool, and the water will then let fall a vitriol of a pale green colour, together with a large quantity of ochre or yellow earth. Evaporate away a third part of the remaining liquor, and more vitriol ſtill will be produced, of a paler colour than the former, and ſome yellow earth will alſo be thrown down, though leſs in quantity than before. After this has been repeated five times, inſtead of vitriol, a yellow ſalt will be obtained; and after that, on more evaporations, a white ſalt will be every time obtained, which will be extremely different from vitriol both in colour and taſte, being fiery and pungent, and partaking ſcarcely at all of that acrid and nauſeous aſtringent taſte, which is ſo peculiar to vitriol. It is unctuous, like ſalt of tartar, and cleanſing like ſoap, rendering the hands waſhed with it ſoft and ſupple; whereas the common vitriol makes them very harſh and rough; finally, this laſt ſalt diſſolved in water appears fatty and mucilaginous.

From five pounds and a half of the laſt lixivium four pounds of this ſalt will be obtained, and half a pound of the liquamen will never congeal. It is remarkable, that this ſaline matter is the moſt ſoluble of all the ſorts, as the greateſt quantity of it may be kept fluid in the ſmalleſt quantity of water we know of in any experiment of this nature.

The liquamen remains thin, and is of an acrid and fiery taſte, ſcarcely ſupportable on the tongue. See Liquamen *Pyriticum*.

The white ſalt, which is called the ſaline principle of vitriol, being put into a retort, and diſtilled in a ſand furnace, the far greater part of it comes over in form of a highly acid ſpirit, eſpecially that coming laſt in ſmall drops. This liquor being rectified in a tall glaſs body, a volatile ſulphureous liquor ariſes immediately on the application of the heat. The ſmell of this is ſo ſubtile and penetrating, that it is almoſt inſupportable, and yet it is clear as water, and inſipid to the taſte. This may be preſerved in its full perfection many years, only by keeping it cloſe ſtopped, not letting fall any ſediment. The remaining liquor is the common acid liquor of vitriol, and by diſtillation may be ſeparated into ſpirit of vitriol, and that heavy and corroſive liquor, commonly called oil of vitriol.

In alum, vitriol, and mineral ſulphur, the ſaline principle, which in each of them is by far the chief part, both in quantity and energy, has much the ſame nature and properties. In the laſt indeed it is clogged with ſulphur; for the true nature of common ſulphur is, that it is a vitriolic ſalt, the very ſame with that of common vitriol; and the ſulphureous parts, which give it that form and exiſtence which we expreſs by the word ſulphur, are leſs copious than could be imagined, compared with the ſaline, which are genuine vitriol, differing in nothing from the common vitriol, but that it contains a ſmaller admixture of terreſtrial and metalline parts. Phil. Tranſ. N° 123.

Saline *Earths*. The chemiſts under this, as a general head, reckon all thoſe ſaline and earthy ſubſtances, which are calcined or burn in the fire; as all the kinds of lime, pot-aſhes, ſoot, and the like; theſe being ſo many mixtures of ſalt and earth; and all ſalts appearing to them, indeed, on a rigorous examination, to be only earths of different natures, which, when reduced to a certain degree of ſubtilty or fineneſs of parts, ſo as permanently to diſſolve in water, are then emphatically denominated ſalts. Shaw's Lectures, p. 67.

Saline *Julep*. See Julep.

Saline *Mixture*. See Mixture.

Saline *Manure*, in *Agriculture*, that ſort which is conſtituted of any kind of material which is of the ſalt deſcription, or which contains it in any pretty large quantity or proportion; as the refuſe or waſte of different ſalt or ſoap manufactories, the ſubſtances of the former kind which are left in the curing of different ſorts of fiſh, alkaline combinations, various denominations of ſea-weeds, ſoot, and many other matters of the ſame nature. See Salt, *as manure*.

In ſome ſituations and conditions of land, the uſe of this ſort of manure is ſaid to be pretty general and beneficial; while in others it is ſcarcely at all attended to, and ſuppoſed to be not only inefficacious, but ſometimes injurious. It is conceived by ſir Humphrey Davy, that much of the diſcordance of the evidence, which relates to the efficacy of ſaline ſubſtances as manures, depends upon the circumſtance of their having been uſed in different proportions, and, in general, in quantities much too large. It is thought that the different ſorts of aſhes, which conſiſt of the vegetable alkali united to carbonic acid, and which, as it is found in moſt plants, is not difficult to ſuppoſe may conſtitute an eſſential part of their organs, may be uſeful in this way. The general tendency of the alkalies, it is remarked, is to give ſolubility to vegetable matters; and in this manner they may render carbonaceous and other ſubſtances capable of being taken up by the tubes, in the radical fibres of plants. Farther, that as vegetable alkali has likewiſe a ſtrong attraction for water, it may, even in ſmall quantities, tend to ſupply a due degree of moiſture to the ſoil, or to other manures; though this proceſs, in conſequence of the ſmall quantities employed, or which exiſt in the ſoil or land, can only be of a ſecondary nature.

To the mineral alkali, which is found in the aſhes of ſome other plants, and which is contained in ſome other ſubſtances in large proportions, the ſame reaſoning, it is alſo ſuppoſed, will apply, when it is in its pure ſtate, as to the nature of its operation in this intention.

The trials of others would, however, ſeem to make againſt the utility and power of any ſort of ſaline manure, when applied to land. In order, therefore, to throw more light upon this difficult and involved ſubject, and afford a more full explanation of it, the above writer, in the months of May and June in 1807, made a variety of experiments on the effects of different ſaline ſubſtances on barley and on graſs growing in the ſame garden, the ſoil of which was a light ſand; in one hundred parts of which there were contained ſixty of ſiliceous ſand, and twenty-four parts of finely divided matter, which conſiſted of ſeven parts of carbonate of lime, twelve parts of alumina and ſilica, and leſs than one part of ſaline matter, chiefly common ſalt, with a trace of gypſum and ſulphate of magneſia; the ſixteen parts which remained conſiſted of vegetable matter. The ſolutions, or diſſolved parts of the ſaline ſubſtances, which were had recourſe to, were made uſe of twice in the courſe of the week, in the quantity of two ounces at a time, on ſpots of graſs and corn, ſufficiently remote from each other to guard againſt and prevent any interference of reſults. The particular ſubſtances tried in theſe caſes are ſtated to have been ſupercarbonate, ſulphate, acetate, nitrate, and muriate of potaſſa; ſulphate of ſoda, ſulphate, nitrate, muriate, and carbonate of ammonia. See theſe heads.

It was found that, in all caſes, when the quantity of the ſaline matter equalled one-thirtieth part of the weight of the water, the effects were injurious; but the leaſt ſo, in the inſtances of the carbonate, ſulphate, and muriate of ammonia. When the quantities or proportions of the ſaline materials were one-three-hundredth part of the ſolution, the effects, it is ſaid, were different. The plants which were watered with the ſolutions of the ſulphates, are ſtated to have grown exactly in the ſame manner as ſimilar plants watered with rain-water. Thoſe that were acted on by the ſolutions of nitrate, acetate, and ſuper-carbonate of potaſſa, as well as the muriate of ammonia, are ſaid to have grown rather better. But that thoſe which were managed with the ſolution of the carbonate of ammonia, grew the moſt luxuriantly of all. This laſt reſult is, it is conceived, what might have been expected, as carbonate of ammonia conſiſts of carbon, hydrogen, azote, and oxygen. However, another reſult took place, which the writer had not anticipated: the plants which were watered with a ſolution of nitrate of ammonia did not grow better than thoſe which were watered with rain-water. It is noticed, however, that the ſolution made uſe of reddened litmus paper, and that probably the free acid exerted a prejudicial effect, and interfered with the reſult.

At Roehampton, too, in the year 1808, he found the growth of wheat aſſiſted in a field by a very weak ſolution of the acetate of ammonia.

The efficacy of ſoot and ſoapers' waſte, as manures, has alſo been commonly thought to depend, in ſome meaſure, upon the ſaline matters which they may contain. In the former, this, it is ſuggeſted, may be partially owing to the ammoniacal ſalts it contains; and it is noticed that the liquor, afforded by the diſtillation of coal, contains carbonate and acetate of ammonia, which is likewiſe ſaid to be a very good manure. In the latter article, the quantity of different ſaline matters, which it contains, is ſtated to be very minute indeed; and that in the beſt of it there is hardly a trace of alkali.

Sir John Sinclair, in his "Inquiry into the Nature and Cauſes of the Blight, the Ruſt, and the Mildew in Wheat," ſuggeſts that ſaline manure may have a tendency to prevent its being injured by theſe means. He appears to have been accidentally led to the particular conſideration of this ſort of manure, in conſequence of hearing that in a field of about ſixteen acres, of light dry turnip land, in Berwickſhire, the expoſition and elevation of which were every where nearly equal, about five acres that were manured with ſea-ware retained a much healthier colour than the reſt of the field, and that the produce was eſtimated to be about one-third better, the quantity of the produce and the quality of the grain being both conſidered, though the other parts of the ſame field had been partly manured with lime and partly with dung. It was found, on more inquiry, that lands lying on the ſea-coaſts of the northern parts of England, and the ſouthern parts of Scotland, were either wholly hindered from being affected with the mildew, or prevented from receiving any material injury from it. The ſame opinion alſo prevails on the ſhores of Eſſex. This, however, was found not to be the caſe in the lands on the coaſts of Suſſex, which is aſcribed to over-dunging, that has the ſame effect in other ſituations. If the ſea-air be of uſe in this way, it is ſuggeſted as moſt probably ariſing from the diſpoſition of the ſaline particles with which it is loaden on the earth, in ſuch neighbourhoods, for a great length of time. On this account, the graſs on the ſea-coaſts is conſtantly, it is ſaid, finer than that in the interior of the country, and its wholeſomeneſs as food for all domeſtic animals well known.

It is conceived that the ſaline ſubſtance denominated common ſalt, may be beneficial in this intention, in a moderate proportion, by its antiſeptic quality, or that of preventing the corruption of the plants, as well as by its highly ſtimulant properties. It is likewiſe ſuppoſed that it may be uſeful in ſome other ways: and that other ſaline manures may have the ſame tendency, by contributing to ſtrengthen the plants; as the weaker they are, the more liable they are to be affected with the diſeaſe.

The ſuppoſition of the utility of ſaline manures in this way, it is ſtated, has ſince been rendered ſtill more ſtrong by the trials of Mr. H. Sickler in Cornwall, who, in going over his land, in preparing it for turnips, employed 24 buſhels, of 84 lbs. each, to the acre of the ſame county, of the refuſe ſaline material uſed in curing pilchards in that diſtrict, which probably contains a little oil. Wheat is ſtated to have followed; and that he never had a ruſty ſtraw, when the land was ſo managed. One field of ſix acres, which was not worn out ſo much as the others, he put into peaſe, followed by wheat: the crop ruſted ſo badly, that he had not five buſhels on the acre, and the ſample was a very bad one. Next turnips on the wheat, a rich ſtubble, with the uſual quantity of the above ſort of ſaline material, ſucceeded by wheat, a very heavy crop; no appearance of ruſt. This field, in his courſe of crops, has ſince been three times in wheat, without the leaſt appearance of ruſt; nor has he found a ruſty ſtraw in any of the fields ſalted in the above manner for turnips; whilſt on other lands in the ſame vicinity, which were not ſalted, ſome have appeared. It never, however, occurred to him that this ſaline matter prevented the ruſt, till he was put in mind of it; but now it ſtrikes him very forcibly, he ſays, that it prevents its appearance. This is the whole of what he knows on the ſubject at preſent; but further new trials for a wheat crop are promiſed.

It is noticed that the refuſe ſalt of the pilchard fiſhery is completely free from duty; and that the quantity uſed on the common or ſtatute acre, in the above experiments, was 31½ buſhels, of 56 lbs. weight, or 1764 lbs. See Salt, *as manure*.

It is ſuggeſted that the beſt mode of applying this ſort of ſaline ſubſtance, in this intention, would require many experiments to fully decide it. But it may be ſown in a moderate quantity at the ſame time with the ſeed of the crop, and its effects aſcertained on every other ridge. It may alſo be uſed on fallows in ſtrong lands, as has been the caſe already in ſome diſtricts, as Cheſhire, as well as in the manner that has been ſtated above for turnips. The efficacy of other ſaline manures, as thoſe of ſea-ware and ſea-mud, &c. ſhould be carefully determined; as in the former there muſt be much ſaline matter, as is evident from the kelp it affords; and the latter would ſeem to contain many ſaline particles. It ſhould ſtill further be aſcertained, it is ſaid, whether mildew was ever known on ſalt-marſhes, and whether coal and other aſhes have the power of preventing it; as Darwin has adviſed the uſe of ſuch dry ſubſtances as a remedy againſt it, on the ſuppoſition of its being occaſioned by damp. See Sea-*Ware* and Sea-*Mud*.

The ſaline ſubſtance called ſoot has long been thought uſeful in this intention, by being ſown either with the corn, or directly after it; but the fact is ſuppoſed far from being well aſcertained; though it, as well as the refuſe of it taken from different manufactories, are known to be beneficial in various ways, and for different uſes and purpoſes. Beſides, in a depot of it, which was kept perfectly diſtinct from other ſorts of manure, there did not ſeem to be any fungi making their appearance, as conſtantly takes place in other caſes. See Soot.

In ſhort, it is concluded, that "if it could be aſcertained that ſalt and ſaline manures, in general, were an effectual preventive againſt the mildew, it would certainly be one of the moſt important diſcoveries hitherto made in agriculture." And that if the point were once fully eſtabliſhed, it is probable that a much ſmaller quantity than 25 or 30 buſhels to the acre would be found ſufficient; and alſo that the duty would be remitted on the ſalt, in order to promote ſo important an object as the ſafety of our crops, and the ſecurity of our ſubſiſtence. The expence of the ſalt would be no obſtacle, as the price of rock-ſalt at the pits, at this time, is only 3½*d.* the buſhel of 65 lbs., and that of white ſalt only 6*d.* at the town of Liverpool.

This intereſting ſubject, however, ſtands in need of further inveſtigation, and the more full proof of additional facts and experiments.

The author of the work entitled "The Elements of Agricultural Chemiſtry," thinks it unneceſſary to diſcuſs, to any greater extent than what has already been noticed, the effects of ſaline ſubſtances on vegetation; as, except the ammoniacal compounds, or thoſe containing nitric, acetic, and carbonic acid, none of them can afford, by their decompoſition, any of the common principles of vegetation, as carbon, hydrogen, and oxygen. And the alkaline ſulphates and the earthy muriates are ſaid to be ſo ſeldom found in plants, or are found in ſuch minute quantities or proportions, that it can never be an object to apply them to the ſoil in the way of manure. As the earthy and alkaline ſubſtances of plants ſeem never to be formed in vegetation, ſo there is every reaſon likewiſe to believe, it is ſaid, that they are never decompoſed; for after being abſorbed, they are found in their aſhes. Their metallic baſes cannot exiſt in contact with aqueous fluids; and thoſe baſes, like other metals, have hitherto not been reſolved, by the proceſſes of art, into any other forms of matter: they have the power of readily combining with other elementary matters, but remain undeſtructible, and can be traced, unreduced in quantity, through their diverſified ſtates of combination. See VEGETATION.

SALINES, in *Geography*, a ſea-port town of the iſland of Cyprus, on the ſouth coaſt, near Larnica, and once a very flouriſhing place. The decaying fortreſs, with a ſmall garriſon, ſerves only to ſalute the ſhips of foreign powers that come to water on the coaſts. Near the citadel is a large incloſure, like a religious edifice with many cells, where ſtrangers are received and accommodated at a ſmall expence. Here is alſo a bazar, or market, where proviſions, cloth, ſtuffs, and other neceſſaries, are ſold. This market is the moſt frequented in the iſland. All the veſſels of the Syrian coaſt come hither to procure proviſions, which are exceedingly cheap. The ſhops alſo afford all kinds of European merchandize. Next the bazar is the cuſtom-houſe, which is under the management of an aga, or Turkiſh lord.

SALINES, a bay on the ſouth-eaſt of the iſland of Martinico.

SALINI, one of the Lipari iſlands, anciently known under the appellation of Didyme or Jemella. It is fertile in wine and fruits; 8 miles E.N.E. of Palermo. N. lat. 38° 40′. E. long. 15° 5′.

SALINS, a town of France, and ſeat of a tribunal, in the department of the Jura, and chief place of a canton, in the diſtrict of Poligny. The place contains 8125, and the canton 13,548 inhabitants, on a territory of 150 kiliometres, in 27 communes. In its vicinity are alabaſter, black marble, quarries of jaſper, and ſalt-ſprings. N. lat. 46° 17′. E. long. 5° 53′.

SALINUM, in *Ancient Geography*, a town of Lower Pannonia. Ptolemy.

SALIORE, in *Geography*, a town of Hindooſtan; 15 miles N. of Calicut.

SALIR *de Mato*, a town of Portugal, in Eſtremadura; 12 miles E.N.E. of Peniche.

SALIS, a town of Ruſſia, in the government of Riga; 25 miles N.W. of Volmar.

SALISBURIA, in *Botany*, received that name from the writer of the preſent article, in a paper read before the Linnæan Society, December 6, 1796, "in honour of Richard Anthony Saliſbury, eſq. F. R. S. and F. L. S., of whoſe acuteneſs and indefatigable zeal in the ſervice of botany, no teſtimony is neceſſary in this ſociety, nor in any place which his writings have reached." We need ſcarcely obſerve that the original barbarous name of this plant, GINKGO, ſee that article, is not admiſſible in ſcientific nomenclature; and was merely tolerated for a time, by Linnæus, till he had materials by which to define the genus.—Sm. Tr. of Linn. Soc. v. 3. 330. Willd. Sp. Pl. v. 4. 472. Ait. Hort. Kew. v. 5. 304.—Claſs and order, *Monoecia Polyandria*. Nat. Ord. *Coniferæ*, Linn. Juſſ.

Gen. Ch. Male, *Cal.* a naked, thread-ſhaped catkin, deciduous. Perianth none. *Cor.* none. *Stam.* Filaments ſcarcely any; anthers ſeveral, incumbent, rather diſtant, triangular, each of two oblong divaricated lobes, connected at the top only, and burſting longitudinally.

Female ſolitary, on the ſame tree, *Cal.* Perianth inferior, in four equal ſegments, permanent. *Cor.* none? *Piſt.* Germen ſuperior, roundiſh; ſtyle . . . ſtigma . . . . *Peric.* Drupa globoſe, with a firm adheſive pulp. *Seed.* Nut ſolitary, elliptic-oblong, obtuſely triangular, thin, but hard, of one cell, with a ſolitary oval kernel; whoſe brown outer ſkin adheres to the ſhell, the inner to the kernel itſelf. Albumen greeniſh-white, the ſhape of the ſeed, of an almond-like ſubſtance. Corculum yellow, ſtraight, inſerted into the baſe of the albumen, of two cotyledons.

Eſſ. Ch. Male, Catkin naked. Calyx and corolla wanting. Anthers incumbent, their cells connected at the ſummit only.

Female, Calyx four-cleft. Drupa ſuperior, with a triangular nut.

1. S. *adiantifolia*. Sm. as above. Willd. n. 1. Ait. n. 1. (Ginkgo biloba; Linn. Mant. 313. G. biloba foliis adianti; Thunb. Jap. 358. G. vel Gín an, vulgò Itsjò, arbor nucifera, folio adiantino? Kæmpf. Am. Exot. 811. t. 813.)—Native of Japan; ſaid to have been firſt cultivated, in England, by Mr. James Gordon, in 1754. It proves a hardy deciduous tree in our climate. The male flowers only have been obſerved, on an individual trained againſt a wall, at Kew, for ſeveral ſucceſſive ſprings. They were firſt noticed there in May 1795. With the help of Kæmpfer's book, and ſome nuts ſent from China to the late Mr. Ellis, now in our hands, the above characters were made out. It is to be hoped the female flowers may one day or other appear, and the fruit be ripened in England. Kæmpfer deſcribes the tree as larger than a walnut-tree, with a lofty ſtraight *ſtem*, and a grey bark, full of fiſſures when old. *Wood* light and ſoft, with a ſoft fungous pith. *Leaves* on the ſhoots of the preſent year only, of an elegant fern-like aſpect, alternate, ſtalked, wedge-ſhaped, abrupt, cloven, jagged and notched at the extremity, ſmooth, ſhining, pliant, of a fine green, with numerous, minute, parallel ribs; their margin ſomewhat thickened. *Footſtalks* twice or thrice as long as the leaves, linear, channelled, woolly on the upper ſide about half way up, eſpecially at the baſe, where they are ſlightly dilated. *Male catkins* ſmall, yellowiſh, ſeſſile, from the ſame bud as the leaves. *Drupas* ſtalked, axillary, ſolitary, nearly globoſe, yellowiſh, with a very auſtere white pulp, inſeparable from the *nut*, except by maceration or putrefaction. *Nut* white, larger than that of the *Piſtacia*, its kernel flavoured like an almond, with ſome degree of auſterity. Theſe *nuts* are reputed to be uſeful in

promoting digeſtion, and curing flatulence. Kæmpfer ſays they are never omitted in the entertainments of the Japaneſe, and that they enter into the compoſition of the ſeveral diſhes, after being freed by culinary arts from their auſterity. Thunberg relates that even the fleſhy part of the fruit, freed from its ſkin, is eaten in Japan, though inſipid or bitteriſh; but if ſlightly roaſted, ſkin and all, it is not unpalatable.

SALISBURY, in *Geography*, a city in the hundred of Underditch, and county of Wilts, England, is ſituated near the river Avon, at the diſtance of 83 miles W.S.W. from London. It is divided, with reſpect to juriſdiction, and alſo by an incloſure wall, into two diſtinct portions, the city, properly ſo called, and the liberty of the Cloſe; the latter of which comprehends the cathedral, and buildings attached to it, and is ſubject excluſively to the authority of the biſhop, and the dean and canons. The city is governed by a mayor and corporation, and compriſes three pariſhes, *viz.* St. Edmund's, St. Martin's, and St. Thomas's, which, united with the liberty of the Cloſe, contain, according to the parliamentary returns of 1811, 1575 houſes, and 8243 inhabitants.

Saliſbury is one of the few cities or towns of ancient times, whoſe origin is preciſely defined by authentic records. Indeed, we queſtion if there is another city in Europe, the early hiſtory of which is ſo free from doubt and uncertainty. The nucleus, from whoſe attraction it ſprung into exiſtence, was its cathedral, which was founded in 1220, in conſequence of a bull from pope Honorius to biſhop Richard Poore, authorizing him to remove the ſeat of his dioceſe from Old Sarum, where the former cathedral church ſtood. The reaſons aſſigned for this change were the lofty, expoſed, and inconvenient poſition of the ancient city, and the circumſtance of its being a fortified poſt, garriſoned by military tenants, who not only frequently inſulted the clergy in the exerciſe of their worſhip, but levied upon them contributions and exactions. The ſame cauſes had previouſly operated to induce many of the citizens to build in the valley; ſo that no ſooner was the new cathedral begun, than the anxiety to free themſelves from the tyrannic controul of the ſoldiery occaſioned a rapid and general removal. To this diſpoſition, as might be ſuppoſed, the biſhop gave all the facility and encouragement in his power. He obtained from king Henry III. a charter conſtituting the new eſtabliſhment a free city, and conferring upon the inhabitants the ſame privileges and immunities which the ancient city of Wincheſter enjoyed. This deed bears date at Weſtminſter, the 30th of January, in the 11th year of that monarch's reign; and among other rights therein granted to the biſhop, it empowers him to ſurround the city and cloſe with ditches, and to alter and repair the roads and bridges leading to it; as alſo to levy tallage, as often as the reigning monarch ſhould tallage his dominions. Theſe reſpective privileges were confirmed by king Edward I. in the 13th year of his reign; but in the thirty-third year of the ſame king a violent diſpute aroſe between the biſhop and the citizens, relative to the payment of ſome aid demanded by the former. Both parties appealed to the king in council, who, after a full hearing, decided againſt the citizens, whereupon they delivered up their charters, and thus degraded Saliſbury from the rank of a city. After the lapſe of a year, however, the inhabitants, perceiving that ruin and diſperſion would reſult from longer oppoſition, ſolicited the biſhop to come to an agreement with them, which he accordingly did, and afterwards joined them in ſoliciting the reſtoration of their ancient charters, and the re-eſtabliſhment of their priſtine rights. This requeſt the king was prevailed upon to grant; and an amicable adjuſtment of all differences conſequently took place. It was not, however, of very long duration, for in the reign of Richard II., when the doctrines of Wickliffe began to be propagated in England, the biſhop, having in vain applied to the mayor and commonalty to ſuppreſs ſome meetings of the Lollards, inſtituted an action againſt them, in which it was decided that they ſhould aid the biſhop's officers in the execution of the epiſcopal decrees. From this period open hoſtility between the citizens and the eccleſiaſtical community ceaſed; but as their reſpective rights were ſtill undefined, James I. granted to the inhabitants a new charter, confirming all their former privileges, and regulating the duties and powers of the cathedral officers. This charter was renewed by queen Anne, with ſome additional clauſes relative to the election and province of the deputy recorder; and under this the city is now governed. The corporation conſiſts of fifty-ſix members, *viz.* a mayor, recorder, and his deputy, twenty-four aldermen, and thirty aſſiſtants. The mayor is elected annually from among the aldermen or aſſiſtants, and is ſworn into office by the biſhop in his court; or in his abſence, by the recorder in council. The other officers of the corporation are a chamberlain, town-clerk, three ſerjeants at mace, two beadles, four conſtables, and thirteen ſub-conſtables. There is beſides an honorary officer eſtabliſhed by cuſtom, called the high ſteward, who is always a nobleman or gentleman of property and influence in the county. The preſent high ſteward is the earl of Pembroke, who has a ſplendid ſeat at Wilton, about three miles weſtward from the city. The recorderſhip is alſo a dignified office, and is now held by the earl of Radnor.

Saliſbury was firſt repreſented in parliament in the twenty-third year of the reign of Edward I., when it was ſummoned to ſend two burgeſſes to aſſiſt in the national councils, and has done ſo regularly ever ſince. The members are elected by the corporation, one from among the citizens, and the other through the influence of the Bouverie family. The mayor makes the returns under the great ſeal of the city. The chief manufactures of Saliſbury are cutlery goods, flannels, and fancy woollens. Markets are held here twice a-week, on Tueſdays and Saturdays, for various articles of merchandize and all ſorts of proviſions; and there are fairs on the Tueſday after the 6th of January, Tueſday after the 25th of March, Whitmonday, ſecond Tueſday in September, ſecond Tueſday after 10th of October, and Tueſday before Chriſtmas day. Leland informs us that in his time the market of Saliſbury was "well ſerved of fleſch, but far better of fiſch, for a great (part) of the principal fiſch that is taken from Tamar to Hampton reſortith to this toun." This ſtatement appears ſingular, conſidering the inland poſition of Saliſbury; but as it is corroborated in ſeveral old writings, there is no reaſon to doubt its truth.

The ground upon which the city of Saliſbury ſtands, from its ſituation in a broad vale, near the junction of three rivers, poſſeſſes many advantages for the ſcite of a populous town. The ſoil is a fine black mould, lying on a ſubſtratum of gravel, which forms a dry and firm foundation for buildings; while the numerous artificial ſtreams that flow through almoſt every ſtreet are at once highly beneficial to health and cleanlineſs, and are calculated to facilitate many proceſſes of manufacturing induſtry. Theſe ſtreams are ſupplied by means of ſluices on the river Avon; and as the principal ſtreets lie at right angles, they not unfrequently flow acroſs each other. From this peculiarity of being watered by ſo many rivulets, Saliſbury moſt probably poſſeſſes more bridges than any city in Europe, not even Venice excepted. The whole conſiſts of two marked and diſcriminating features, called the cloſe and the city. The firſt, which is appropriated to, and occupied by, the cathedral, the biſhop's palace, the deanery, prebendal houſes, and ſome handſome private dwellings, holden chiefly under the biſhop and chapter, compriſes an area of about half a mile ſquare ; while the connected part of the city extends above three-quarters of a mile from north to ſouth, and, including the ſtreet of Fiſherton, nearly as much from eaſt to weſt. This portion has five principal ſtreets running in the former direction, and the ſame number in the latter, all at right angles with each other ; ſo that the ſpaces between them are nearly regular and uniform. Each ſpace conſtitutes a ſquare, and is occupied by a ſeries of houſes, abutting on the ſtreets, the middle area being appropriated to gardens, yards, &c. By this arrangement, there are ſcarcely any alleys or narrow lanes, which, in large towns and cities, are commonly the receptacles of filth, and conſequently pernicious to health. Moſt of the houſes are conſtructed of brick ; but there are a few alſo built of timber, which are in general very irregular, both as to ſize and ſhape. The public buildings may be divided into claſſes, as they are reſpectively ſituated in the cloſe and in the city. Thoſe within the cloſe are the cathedral, the biſhop's palace, and the college of matrons.

Hiſtory and Deſcription of the Cathedral.—The cathedral, as already ſtated, was begun to be built by biſhop Richard Poore, under the authority of pope Honorius, and with the conſent of king Henry III., who was invited, together with all the chief nobility and eccleſiaſtics of the kingdom, to attend the ceremony of its foundation. A great number of dignified perſons, and a vaſt concourſe of the inferior orders of ſociety, were preſent at the ſolemn ſpectacle, which took place on the 28th of April, in the year 1220. William de Wanda, who was precentor of Saliſbury cathedral at the time of its tranſlation, and afterwards dean, has left a manuſcript account of the early events relating to this church, from which the following particulars are derived. The ceremony began by the performance of divine ſervice, after which the biſhop and the other clergy of the church walked in proceſſion to the ſcite of the intended new ſtructure, where a ſermon was addreſſed to the people, exhorting them to contribute towards its erection. Then the firſt ſtone was laid by the biſhop for pope Honorius ; the ſecond for the archbiſhop of Canterbury ; and the third for himſelf ; the fourth was laid by William Longſpee, earl of Sarum ; and the fifth by his counteſs Ela, a lady of diſtinguiſhed piety. After her, certain noblemen added each a ſtone, and were followed in the ſame act by the dean and canons, and many others. Several of the abſent nobility alſo, on their return from attending the king in Wales, came to Saliſbury, and laid a ſtone, binding themſelves to advance ſpecific ſums of money annually for ſeven years, upon ſimilar terms to thoſe which the dean and chapter had previouſly agreed to with reſpect to their own advances.

The cathedral having been thus commenced under favourable auſpices, the building of it proceeded with ſuch rapidity, that in leſs than five years a portion of it was ready for the celebration of divine ſervice. Three altars were, in conſequence, conſecrated on the vigil of St. Michael, in the year 1225 ; one to the honour of the Holy Trinity and All-Saints ; a ſecond to St. Peter and the Apoſtles ; and a third to St. Stephen and the reſt of the martyrs. On this occaſion many valuable donations were offered on the altars ; among the reſt a text of the bible, ſet with precious ſtones, and the relics of many ſaints, which appears to have been preſerved here till the period of the reformation, as it is mentioned in the inventory made by the commiſſioners of Henry VIII. In 1226, William Longſpee, earl of Sarum, having died, was buried in the new cathedral, having been the firſt perſon who was ſo honoured : and in the ſame year the bodies and tombs of three biſhops, St. Oſmund, Roger, and Joſceline, were removed hither from the church at Old Sarum. Soon after this event, biſhop Poore was tranſlated, by a papal bull, to the ſee of Durham, when Robert Bingham was elected his ſucceſſor, and was conſecrated at Wilton in 1229. Like the illuſtrious founder, he proſecuted the building of the cathedral with great ardour ; but though he ſat eighteen years, it was far from being finiſhed at the time of his death, which happened in 1246. William of York, who next obtained the prelacy, rendered himſelf extremely unpopular by reviving the vexations of attending the lords' courts. He died in 1256, and was ſucceeded by Egidius, or Giles de Bridport, in whoſe time the great work of the cathedral was brought to a cloſe, as far at leaſt as was at firſt intended, for the ſpire, which was ſubſequently erected, is ſaid to have been an after-thought, and to have formed no part of the original deſign. Biſhop Godwin ſtates that it was dedicated by Boniface, archbiſhop of Canterbury, Sept. 30, 1258, in the preſence of king Henry III. ; but Wanda ſays that the king could not attend, being engaged at Shrewſbury. The coſt of the erection of the whole edifice, as appeared from an account then delivered to the king, was 40,000 marks.

Biſhop Bridport had ſcarcely ſurvived four years after the completion of the cathedral, when he died, and left the vacant ſee to Walter de la Wyle, who founded the college of St. Edmund's in this city. He deceaſed Jan. 3d, 1270, and was ſucceeded by Robert de Wikhampton, the dean, whoſe election was violently oppoſed by archbiſhop Kilwardy ; but he was neverthleſs finally compelled to conſecrate him in 1274. This prelate died in 1284, when Walter Scammel was choſen biſhop, but did not enjoy his dignity above two years. His ſucceſſor was Henry de Braundſton, who lived only a few months after his election. He was ſucceeded by Laurence de Hawkburn, who likewiſe died before he was confirmed, his nomination having been diſputed by William de la Corner, his ſucceſſor. This prelate was conſecrated May 14th, 1289, and dying in 1291, had for his ſucceſſor Nicholas Longſpee, ſon of William Longſpee, earl of Sarum, and his counteſs Ela. Previous to his elevation to the ſee, he held the office of treaſurer of the cathedral ; and having been far advanced in life, he ſat only ſix years, during which period nothing remarkable occurred. He died in 1297, when Simon de Gandavo, or Gaunt, was conſecrated biſhop, and enjoyed the prelacy till his death, in 1315. This biſhop empowered the mayor and citizens of Saliſbury to fortify the city with a wall and ditch. His ſucceſſor was Roger de Mortival, dean of Lincoln and chancellor of Oxford, who died in 1329, and was ſucceeded by Robert Wyvil, whom Walſingham characteriſes as one of the moſt deformed, ugly, and illiterate men of his age. He inſtituted, in 1355, a ſuit againſt William de Montecute, earl of Sarum, claiming the caſtle of Old Sarum as the inheritance of the biſhops of Saliſbury, in right of biſhop Roger, from whom he alleged it had been unjuſtly wreſted by king Stephen. So difficult of determination did this point appear, that the judges left it to be decided by ſingle combat ; but the king interpoſed his authority, and the matter was compromiſed by the ſurrender of the caſtle for the ſum of 2500 marks. Wyvil alſo recovered for his church Beerewood and Sherborne caſtles, the latter of which had been conſtructed by biſhop Roger, and had ſhared the fate of the fortreſs of Old

Sarum. This prelate died in 1375, when Ralph Erghum was conſecrated biſhop, by the nomination of the pope, in oppoſition to John de Wormenſhall, who had been elected by the canons, and had received the approbation of the king. He ſat twelve years, after which he was tranſlated to the ſee of Bath and Wells, by a papal bull. On his removal, John Waltham, or Waltan, maſter of the rolls, and keeper of the privy ſeal to king Richard II. ſucceeded, and continued in the enjoyment of all his dignities till his death, in 1395. Richard Metford was the next prelate of his ſee, having been tranſlated hither from Chicheſter in the ſame year. He died in 1407, when Nicholas Bubwith obtained the ſee, but was ſoon afterwards removed to the biſhopric of Bath and Wells, and inveſted with the dignity of treaſurer of England. Upon this event Robert Hallam was advanced to the vacant prelacy ; but in leſs than two years afterwards he was nominated to the dignity of a cardinal, and deputed to aſſiſt at the council of Piſa, convened in 1413. He was likewiſe preſent at the council of Conſtance in 1417, and died in the month of September in that year. His ſucceſſor in the ſee of Saliſbury was John Chandler, the dean, who preſided ten years, and was followed by Robert Neville, founder of the monaſtery of Sunning, in Berkſhire. He was removed to the ſee of Durham in 1427, and William Aiſcough, or Hacliff, ſucceeded to the biſhopric of Saliſbury. This prelate fell a victim to the barbarity of his own tenants, who, taking part in Jack Cade's rebellion, ſtoned him to death, and pillaged his palace at Eddington, on the 29th of June, 1450. Richard Beauchamp next obtained the ſee, having been tranſlated hither from that of Hereford, by a papal bull. Godwin affirms, that this biſhop was the firſt chancellor of the Garter; but Dr. Milner, in his "Hiſtory of Wincheſter," with more probability, claims that honour for William de Eddington, one of the biſhops of that dioceſe. Beauchamp built a chapel on the ſouth ſide of the Lady chapel in Saliſbury cathedral. His death happened in 1481, when Lionel Woodville ſucceeded, but ſcarcely ſurvived his elevation four years. He was ſon to Richard Woodville, earl Rivers, and brother to Elizabeth, conſort of Edward IV. On his death, in 1484, Thomas Langton, biſhop of St. David's, was tranſlated to Saliſbury, and preſided nine years, and at length was removed to the biſhopric of Wincheſter. His ſucceſſor was John Blythe, who received conſecration in 1493, and was appointed chancellor of Oxford the year following. He died in 1499, leaving the vacant ſee to Henry Deane, biſhop of Bangor, who, about a year afterwards, was nominated lord chancellor of England, and archbiſhop of Canterbury. Theſe preferments were beſtowed upon him by king Henry VII., whoſe intereſt he had materially promoted in his capacity of chancellor of Ireland, by cruſhing the rebellion of Perkin Warbeck. He departed this life in 1502, when Edmund Audley was preferred to the ſee of Sarum. This prelate founded and built an elegant chapel, or chantry, in his cathedral, and erected a ſtone pulpit in the church of St. Mary, in Saliſbury. His death happened in 1524, and made way for cardinal Laurence Campeggio, the pope's legate in England, whither he had been diſpatched from Rome to induce king Henry VIII. to join the confederation of Chriſtian princes againſt the Turks. He afterwards was again ſent to this country to ſit as judge with cardinal Wolſey, on the queſtion of the king's divorce from Catharine of Arragon ; which proved the occaſion of his being deprived of his ſee of Saliſbury by the king, who conferred it on Nicholas Shaxton, in 1535. The latter, however, did not long enjoy it, having been ejected for nonconformity in 1539, when John Salcot, or Capon, was tranſlated to this biſhopric from Bangor, and held it till his death in 1557. His ſucceſſor was John Peto, who was appointed by pope Paul IV., in oppoſition to cardinal Pole, the favourite of queen Mary. Her majeſty, irritated at this meaſure, not only refuſed Peto poſſeſſion of his biſhopric, but baniſhed him from her dominions, and he died in exile. John Jewel next obtained this prelacy. He was a man of great talents and erudition, and ſtrenuouſly advocated the cauſe of Proteſtantiſm, in the tenets of which he had been educated. He terminated his mortal exiſtence at Monkton-Farley, in Wiltſhire, on the 22d of September 1571, and gave place to Edmund Gueſt, or Gheaſt, who preſided ſeven years, and was a great benefactor to the cathedral library. His death occurred in 1578, and, in the ſame year, John Piers was tranſlated hither from Rocheſter. He held this ſee ten years, and was then preferred to the archbiſhopric of York in 1589, from which time the prelacy remained vacant for three years, when John Caldwell obtained it. This prelate is remarkable for having been the firſt married biſhop of Sarum. He ſat five years, and was ſucceeded, after a lapſe of two years, by Henry Cotton, who died in 1615, and made way for Richard Abbot, a celebrated lecturer in ſupport of the royal authority, in oppoſition to Bellarmine and Suarez. This biſhop died in 1617, and had for his ſucceſſor Martin Fotherby, D.D., who being far advanced in age, ſcarcely held the ſee a complete year, before his death. A ſimilar fate happened to his ſucceſſor Robert Tounſon, who was ſucceeded by John Davenant, his brother-in-law, a prelate of great abilities, and an adept in controverſial argumentation. He died in 1641, when Brian Duppa, tutor to prince Charles, was elevated to the ſee. After the death of king Charles I. he reſided privately at Richmond, till the reſtoration, an event which again put him in poſſeſſion of his biſhopric ; but he died in leſs than two years afterwards. His ſucceſſor was Henry Henchman, a ſtrenuous ſupporter of the Stuart cauſe, who preſided three years, and was then advanced to the ſee of London. During his prelacy, conſiderable alterations were made in the form and decorations of the choir. John Earle next held this biſhopric, a man highly extolled by his contemporaries for his learning and wit. He was author of "Microcoſmography, or a Piece of the World diſplayed," which has lately been republiſhed, with notes and an appendix, by Philip Bliſs, fellow of St. John's college, Oxford. Earle died at Oxford in 1665, and was ſucceeded by Edward Hyde, a native of Saliſbury, who ſcarcely ſurvived two years. The next biſhop was the celebrated Seth Ward, by whom the cathedral and biſhop's palace were materially repaired, and through whoſe influence the chancellorſhip of the Garter was made hereditary in the biſhops of Saliſbury. In his time, the ſpire of the cathedral was ſtruck by lightning, and apprehenſions being entertained of its ſtability, on account of its remarkable declenſion from the perpendicular, ſir Chriſtopher Wren was engaged by the biſhop to ſurvey the whole ſtructure, and draw up a report on the ſtate of its architecture. This prelate further founded the college of matrons, ſituated in the Cloſe, and likewiſe engaged in a warm controverſy with dean Pierce reſpecting the right of beſtowing prebends. His death occurred in 1689, when Gilbert Burnet, equally celebrated for his political conduct and his hiſtorical writings, obtained the vacant ſee, and held it till 1715. The ſucceeding biſhop was William Talbot, whoſe death, in 1730, made room for Richard Willis, then biſhop of Glouceſter. The latter died in 1734, and in the ſame year the far-famed Benjamin Hoadley, biſhop of Bangor, one of the moſt diſtinguiſhed polemical writers of his own, or perhaps any other age, was conſecrated biſhop of Saliſbury. The Bangorian controverſy is familiar to every eccleſiaſtical reader. He preſided at Saliſbury twelve years before his removal to Wincheſter, at which time Thomas Sherlock was inſtalled in his place, and likewiſe attracted notice by his controverſial writings. His ſucceſſors were John Gilbert, afterwards archbiſhop of York; John Thomas, who was tranſlated to Wincheſter; Robert Drummond, who was promoted to York; a ſecond John Thomas, who died here in 1766; John Hume, who deceaſed in 1782; and the Hon. Shute Barrington, now biſhop of Durham, during whoſe prelacy extenſive improvements were executed in the internal arrangement and ornaments of the cathedral, and alſo in the biſhop's palace and gardens. On his removal, John Douglas, D.D., the able detector of Lauder's forgeries againſt Milton, was nominated to the biſhopric, which he held till 1805, when he died, and was ſucceeded by the preſent biſhop, John Fiſher, D.D. and F.S.A., preceptor to the princeſs Charlotte of Wales.

The cathedral of Saliſbury is admitted by all, who are capable of appreciating architectural merit, to be one of the moſt intereſting eccleſiaſtical edifices in Europe, combining the qualities of ſimplicity and harmony of deſign, with beauty of proportion and chaſteneſs of decoration. In its parts, it diſplays the utmoſt lightneſs and elegance, and, as a whole, is grand and impreſſive, without being gloomy. Though ſlight variations of ſtyle are perceptible in ſome of its members, particularly in the weſt front, tower and ſpire, theſe neverthleſs harmonize ſo well with the general character of the building, that even were record wanting to authenticate the fact, the intelligent artiſt would immediately recognize it as the work of one period, and the reſult of a determinate and ſettled plan. The church conſiſts of a nave, with two lateral aiſles; a bold and lofty porch, projecting on the north ſide, near the weſt end; a large tranſept, with an eaſtern aiſle; a choir, with lateral aiſles, and a ſecond, or ſmall tranſept, with an aiſle; a chapel at the eaſt end, with an intermediate veſtibule or double aiſle terminating the choir; and a lofty tower and ſpire, which riſe from the interſection of the great tranſept. To the ſouth of the church are appended the cloiſter, chapter-houſe, conſiſtory court, and veſtry. Such are the chief portions, or features, of this edifice, but it will be proper to deſcribe ſome parts more particularly. The weſt front is ſeparated into five compartments, longitudinally, and ſeveral irregular parts horizontally. Four large buttreſſes, ornamented with niches, ſtatues, &c. project from the elevation. In the central compartment, at the bottom, between two of the buttreſſes, is a portico, conſiſting of three arches, one of which faces the chief entrance, and communicates with the nave of the church; over this is a ſeries of arcades with acute canopies, and above them a large window, formed by a lofty pointed arch in the centre, and a ſmaller one on each ſide. The upper diviſion, or pediment, diſplays two windows, with two lights in each, alſo three circular windows or pannels. To the right and left of the centre portico, is another ſimilar one, but ſmaller, and over each are five different compartments of windows, blank arches, &c. Both angles of this front are ſupported by ſquare turrets, having their exteriors covered with columns, canopies, tracery, and pedeſtals; and their interiors occupied by ſtaircaſes, ſurmounted by a central ſpire, and four corner pinnacles. Each tranſept is divided, in elevation, into four compartments, with acute pediments in the centre, and pinnacles at the angles. A ſeries of double windows are continued all round the aiſles, while the upper diviſion or portion over the roof of the aiſles is lighted by a continued ſeries of windows, of three openings to each. The tower above the roof of the church conſiſts of two diviſions, variouſly decorated with pilaſters, canopies, &c. and crowned with four octangular crocketted pinnacles from the centre, between which riſes the ſpire, whoſe ſummit is 404 feet above the level of the ground. The ſtyle of architecture, in this member of the church, is more elaborate than in moſt of its other parts, and hence it is generally thought to have been executed at a ſomewhat later period. That a ſtructure ſo lofty, and ſo light and tapering in its conſtruction, as this ſpire, ſhould have ſwerved 22⅜ inches from the perpendicular, in the courſe of five centuries, is not ſurpriſing; but when the narrowneſs of its baſe is conſidered, it ſeems aſtoniſhing that it has ſtood for ſo many ages. The fact of its having done ſo, is a concluſive proof of the talents of the architect, and the ſkill of the maſon, as well as of the excellence of the materials which compoſe it. To raiſe ſuch a maſs of ſtone, was at once an arduous and dangerous experiment, and demanded the higheſt application of ſcience in its deſign, and the greateſt energy and courage in its execution.

The cloiſters and chapter-houſe, as before noticed, are ſituated on the ſouth ſide of the church. The former are covered with a lofty vaulted ceiling, and are ſeparated from the ſquare area in the centre by a ſeries of unglazed windows. On the eaſtern ſide a veſtibule forms a communication with the chapter-houſe, which is a lofty, light, and elegant piece of architecture, of an octagonal form, and ſupported in the centre by a ſmall cluſtered column. A ſtone ſeat ſurrounds the interior; and at the eaſt end, facing the entrance, is a ſecond ſeat, raiſed above the former. A ſeries of arcades, with columns and arches, extend round the lower part, between the ſeat and the ſills of the windows. Over theſe arches are ſeveral ſpecimens of ancient ſculpture, in bold baſſo and alto relievo, repreſenting various incidents mentioned in the ſacred writings. The interior of the church alſo contains many ſubjects entitled to notice and deſcription. At its weſtern extremity is a lofty window, filled with ſtained glaſs, the work of William Egginton, who executed it at the expence of William Benſon Earle, eſq. Two windows at the eaſt end of the church are likewiſe filled with ſtained glaſs, one from a deſign by ſir Joſhua Reynolds, and the other from a picture by Mortimer. The former repreſents the Reſurrection, and the latter a group of figures raiſing the brazen ſerpent. The ſtalls, biſhop's throne, organ-ſcreen and organ, are all of modern date, and all betray marks of their origin. Parts of the organ-ſcreen are, however, extremely beautiful, as are alſo two other ſcreens, which have been placed under the north and ſouth arches of the tower, in order to ſtrengthen and ſupport them. The monuments are too numerous to admit of ſeparate deſcription. We ſhall only therefore mention the names of the principal perſons to whom they belong, or who are known to have been buried here. The biſhops who have monuments are, Herman, Joſceline, Poore, Roger, Walter-de-la-Wyle, Oſmund, Hyde, Thomas, Hume, Davenant, Capon, Ward, York, Audley, Bingham, Wyckampton, Roger de Mortival, Wyvil, Gheaſt, Jewel, and Mitford; but ſeveral others of them were undoubtedly interred in the church. The other diſtinguiſhed characters whoſe aſhes repoſe here, are Thomas, baron Wyndham, of Finglaſs in Ireland; William Longſpee, earl of Sarum; Robert, lord Hungerford; one of the lords Stourton; lord Cheney; ſir Walter Hungerford; lord chief juſtice Hyde; ſir Thomas Gorges, of Longford caſtle; Edward, earl of Hertford; John, duke of Somerſet; Elizabeth, ducheſs of Somerſet; James Touchet, lord Audley; James Harris, eſq. author of Hermes; Henry, earl of Pembroke, and numerous members of the ſame illuſtrious family. Here is beſides a monument of a choral biſhop. It conſiſts of a ſlab of ſtone, ſupporting the effigy of a boy habited in epiſcopal robes, with a mitre on his head and a croſier in his hand. At his feet is a figure of a dragon, with his head reflext to his tail. This monument, having been concealed by ſeats, lay undiſcovered, as was ſuppoſed, for ſeveral centuries, and when brought to light, in 1680, excited much ſpeculation relative to its actual intention. The firſt perſon who gave a ſatisfactory ſolution of the difficulty was the Rev. John Gregory, chaplain to biſhop Duppa. This gentleman, after much laborious reſearch into the ancient archives of the church, diſcovered a remarkable cuſtom, practiſed in early times, of electing annually, from among the children of the choir, a choriſter biſhop, whoſe authority laſted from the day of St. Nicholas to Innocents' day at night. This boy-biſhop not only bore the name and held all the ſtate, but likewiſe exerciſed ſome of the moſt important functions of the epiſcopal office; and in the event of his death during his prelacy, was buried with all the honour and pomp becoming his high ſtation.

The different members belonging to the cathedral are a biſhop, a dean, a chancellor, three archdeacons, a ſubdean, a ſubchanter, forty-five prebendaries, four vicars and petty canons, ſix ſinging men, eight choriſters, and an organiſt, beſides ſextons, vergers, and other inferior officers. The dean, together with ſix reſidentiary canons, who are choſen from among the dignitaries and prebendaries, conſtitute the chapter, and have the ſuperintendance and management of all affairs connected with the church. In ancient times the biſhops of Saliſbury held the dignity of precentors to the archbiſhop of Canterbury; and ſince the reign of Charles II. they have been hereditary chancellors of the Garter. The dioceſe over which they preſide contains the whole of Wiltſhire, with the exception of two pariſhes, Kingſwood and Whiteſbury; and all Berkſhire, except the pariſh of Chilton, and the chapelry of Little Faringdon, in Langford pariſh, comprehending in all 544 pariſhes, of which 109 are impropriations. The archdeaconries are thoſe of Saliſbury, Wiltſhire, and Berkſhire; the firſt compriſing the deaneries of Saliſbury, Ameſbury, Chalk, Wilton, Wyly, and Pottern; the ſecond, with the rectory of Minety, thoſe of Avebury, Cricklade, Malmeſbury, and Marlborough; and the third thoſe of Abingdon, Newbury, Reading, and Wallingford, with the annexed rectory of North Moreton. See Hiſtory and Antiquities of the Cathedral Church of Saliſbury, illuſtrated with engravings, by J. Britton, F.S.A. 4to. 1815. Hiſtorical Account of the Epiſcopal See of Saliſbury, by William Dodſworth, 4to. 1815.

The *Biſhop's Palace*, which ſtands at a ſhort diſtance from the ſouth-eaſt corner of the cathedral, is a large, irregular ſtructure, evidently the work of different and diſtant periods. Indeed we believe ſcarcely a biſhop has poſſeſſed the ſee for any length of time, who has not made alterations in, and enlargements to, this building. The late biſhop Barrington added ſome parts to it, and alſo effected conſiderable improvements in the garden. The preſent noble dignitary has paid particular attention to the latter; and under his lordſhip's taſteful direction much improvement as to pictureſque effect is likely to be produced. In the palace are ſeveral portraits of biſhops, the oldeſt of which is that of biſhop Duppa, and the lateſt that of the preſent prelate.

The *College of Matrons*, ſituated near the entrance into the Cloſe from the High-ſtreet, was erected by biſhop Ward, who ſettled upon it an endowment yielding 200*l. per annum*, but that ſum has ſince been greatly increaſed by the riſe in the value of property, and alſo by various additional benefactions. This college is appropriated for the reception of ten widows of clergymen of the eſtabliſhed church, who have each an allowance of money, and is under the patronage of the biſhop, dean, and chapter, who elect alternately in the event of a vacancy.

Public Buildings in the City.—Among the principal are the new council-houſe, the pariſh churches, the infirmary, and the county gaol. The new council-houſe ſtands at the ſouth-eaſt corner of the market-place, on the ſcite of an older building appropriated to the ſame purpoſes, which was deſtroyed by fire in 1780. It was erected between the years 1788 and 1795, under the authority of an act of parliament, and at the ſole expence of the earl of Radnor, to whoſe munificence and public ſpirit Saliſbury is indebted for ſeveral other valuable improvements. This ſtructure is of brick, but the angles of each front are ornamented with ruſtic work in ſtone. The principal front faces the north, where the aſcent to the door is by a ſemicircular flight of ſteps, beneath a receſſed portico, ſupported by four Doric columns, with an inſcribed entablature above, in commemoration of the founder and donor. All the apartments are on one floor, and conſiſt of a council room, two court rooms, a grand jury room, rooms for the different officers of the corporation, a waiting room, and a veſtibule. The courts of law occupy the left, and the council the right wing.

The pariſh churches are three in number, St. Martin's, St. Thomas's, and St. Edmund's. St. Martin's church ſtands upon an eminence at the eaſt end of the city, and is ſaid by Leland to have been erected in place of a more ancient edifice, which was ſituated at Harnham; but the author of the "Antiquitates Sariſburienſes" contends, that the church of St. Martin has always ſtood on the ſame ſcite. The preſent building conſiſts of a nave, two aiſles, and a chancel, with a tower at the weſt end, and contains a few monuments, but none of them are of any note. The church of St. Thomas, ſituated near the centre of the city, is ſaid to have been erected by biſhop Bingham about the year 1240, and to have been dedicated by him to Thomas à Becket, in honour of the martyrdom of that bold and zealous advocate for eccleſiaſtical ſupremacy. This ſtatement, however, we preſume muſt allude to ſome building anterior to the preſent, as its ſtyle beſpeaks it to be of much later date than the early part of the thirteenth century. It is a large ſtructure, conſiſting of a ſpacious nave, with two ſide aiſles, three chancels, a veſtry room, and a tower at its ſouth-weſtern angle. In this church the mayor and other officers of the corporation have pews appropriated to them. Here are ſeveral large and curious monuments in honour of the Eyre family; alſo a plain altar-tomb, without either date or inſcription, but which is attributed to the duke of Buckingham, who was beheaded by king Richard III. in this city. The laſt-mentioned church, St. Edmund's, ſtanding at the northern extremity of the city, was formerly collegiate, and was founded by Walter de la Wyle, biſhop of Saliſbury in the year 1268; but the preſent building is of much later erection, as appears from the ſtyle of its architecture. One of the windows was formerly filled with ſtained glaſs, repreſenting a ſeries of ſcripture ſtories. This was deſtroyed by Henry Sherfield, eſq. recorder of the city, for which act he was ſummoned by the biſhop before the ſtar-chamber, in 1632, and adjudged to pay a fine of 500*l.* The principal monuments in this church commemorate the anceſtors and family connections of Penruddock Wyndham, eſq. a gentleman who has evinced a great predilection for topographical and antiquarian ſtudies, and who has a large manſion adjoining the church.

The *Infirmary* ſtands near Fiſherton bridge, and is a large brick building, more remarkable for commodious internal arrangement than for external elegance of appearance. This eſtabliſhment was indebted for its origin to the benevolence of lord Feverſham, who bequeathed the ſum of 500*l.* to the firſt charity of the kind which ſhould be eſtabliſhed within the county of Wilts. It is ſupported by benefactions, ſubſcriptions, legacies, and other charitable donations, the amount of which, from the commencement of the charity in 1766 to the year 1803, is ſtated in the report then made at 44,608*l.* 4*s.* 11¼*d.*

The *County Gaol* ſtands near the Infirmary, and like it, is deſtitute of architectural intereſt. The ſame remark is equally applicable to the aſſembly and concert rooms, the theatre, and the grammar-ſchool. The laſt, however, is a very flouriſhing eſtabliſhment of royal foundation, and can boaſt of many names among its pupils, who have been highly diſtinguiſhed as political and literary characters. One of theſe was the celebrated Mr. Addiſon, who was a native of this county. The other charity ſchools here are Godolphin's ſchool, endowed for the maintenance and education of eight orphan young ladies; and the Biſhop's ſchool, in which twenty boys and girls are cloathed and educated. There is alſo a Sunday ſchool in each pariſh; and the city abounds with private ſeminaries of great reſpectability.

Monaſtic Inſtitutions, Hoſpitals, &c.—In Catholic times Saliſbury appears to have contained a great variety of religious eſtabliſhments of a monaſtic and collegiate deſcription, though none of them attained any very high degree of diſtinction or opulence, except the college St. Edmund, before mentioned. We ſhall notice the others therefore as briefly as poſſible. Near the ſouth-eaſt entrance into the Cloſe, ſtood a convent of Franciſcan or Grey friars, which William of Worceſter ſtates to have been founded by biſhop Poore, in the year 1227; but in the Collectanea of Leland, its origin is aſcribed to a citizen named Pude, and a hint is given of its removal from ſome former ſituation, probably Old Sarum. In this priory Radulphus Monthermer, earl of Glouceſter, was buried in the year 1325. The Dominican or Black friars had a houſe in Fiſherton, which according to Speed was erected and endowed by king Edward I. and archbiſhop Kilwardy, about the year 1276, but Godwin ſays it was the work of the latter only. Mary, counteſs of Norfolk, inſtituted in this convent a chantry of ſix prieſts, dedicated to our Lady, St. Ann, and All Saints; all veſtiges of which are now effaced. St. Nicholas hoſpital ſtood near Harnham bridge. It was founded by biſhop Richard Poore for a maſter, eight poor women, and four poor men, but ſeems to have been chiefly carried on and endowed by his ſucceſſor, biſhop Bingham. At the time of the diſſolution this hoſpital was among the few which were fortunate enough to eſcape the rapacity and reforming zeal of king Henry VIII.; but queen Elizabeth granted it away to patentees, from whom it was purchaſed by the then earl of Pembroke, who prevailed upon king James to reſtore it. During the commonwealth the whole of its revenues were conveyed by Oliver Cromwell to the corporation of Saliſbury; but part of them was afterwards reſtored, and the eſtabliſhment ſtill continues to maintain a maſter and twelve poor perſons, ſix women, and as many men. Near this hoſpital ſtand the ruins of the college of Vaux, or Vaulx, which owed its origin to biſhop Egidius, in the year 1260, for the reception of ſtudents; but its proſperity was of very ſhort duration, and at the reformation it had ſunk into a ſort of appendage to the hoſpital of St. Nicholas, both being, as at preſent, under one warden, who ſtill enjoys the accommodation and revenues annexed to the wardenſhip of the ancient college. In Caſtle-ſtreet may be ſtill ſeen the remains of an hoſpital dedicated to St. John; and mention is made in the Magna Britannia, and by Speed and Dugdale, of an hoſpital in honour of St. Michael, and a college dedicated to St. Edith; but their exiſtence is queſtioned, upon good grounds, by biſhop Tanner. The other hoſpitals in Saliſbury are, Trinity hoſpital, which maintains twelve poor perſons; Bricket's hoſpital, for ſix poor widows; Eyre's hoſpital, for the accommodation of ſix men and their wives; Bleckydon's hoſpital, for ſix poor women; Taylor's hoſpital, for ſix men; and Froud's hoſpital, which receives ſix men, and as many women. Beſides theſe charities, there are in this city various alms-houſes, erected and endowed for the uſe of the poor. In Culver-ſtreet are ſix tenements, ſaid to be the gift of biſhop Poore; in St. Ann's-ſtreet three houſes, the legacy of Mr. Sutton; in Bedmin-ſtreet twenty houſes, a donation by Mrs. Marks; and in Caſtle-ſtreet fifteen tenements, given by William Huſſey, eſq. when one of the city repreſentatives.

The *Bridges*, the only public objects which remain to be noticed, are Fiſherton bridge, Crane bridge, and Harnham bridge. The two firſt are ſtone ſtructures, of ſix arches each, and ſerve to connect the city with the ſuburb of Fiſherton. Harnham bridge, on the other hand, unites Saliſbury with the ſuburb of Eaſt Harnham, which ſome writers aſſert to have been a conſiderable village before the foundation of the new city. This bridge is of ancient erection, conſiſting of ten arches, and is commonly aſcribed to biſhop Bingham. It is divided into two parts by a ſmall iſlet, where formerly ſtood a chapel, in which three chaplains were appointed to ſay maſs, and to receive the contributions of paſſengers towards defraying the expence of repairs.

Hiſtorical Events.—Having thus furniſhed an account and deſcription of Saliſbury in its municipal and eccleſiaſtical character, we ſhall now briefly notice thoſe events that have occurred here, which properly belong to general hiſtory. A parliament, or national council, was ſummoned to meet in this city by king Edward I. to conſult on the meaſures beſt calculated to recover the Engliſh dominions in Gaſcoigne, which had been ſeized by Philip of France. In that aſſembly the lay nobles only were preſent, the clergy being then ſuſpended from the exerciſe of their civil privileges, for having refuſed ſome previous aid demanded by the king, who had beſides confiſcated their eſtates, hoping thereby to intimidate the lay barons. In this hope, however, he was diſappointed. His demands at Saliſbury were oppoſed with firmneſs; and when the king threatened puniſhment, nearly forty of them threw off their allegiance, and marched out of the city at the head of their armed followers. A ſecond parliament was held here in 1328, to enquire into the ſtate of the kingdom, then groaning under the odious tyranny of queen Iſabel and earl Mortimer. That nobleman, aware of the intention of the earl of Lancaſter to move his impeachment, procured an order under the great ſeal, that none of the nobles ſhould appear armed in the aſſembly. This ſtep occaſioned moſt of the lay barons to abſent themſelves, fearing ſome evil deſign, and in this they were not miſtaken; for ſcarcely had thoſe who met, chiefly clergy, began their deliberations, when Mortimer broke in upon them with an armed force, and threatened them with death, if they preſumed to paſs a ſingle reſolution contrary to his pleaſure. This violent conduct afterwards formed one of the articles of impeachment againſt him, when he was brought to trial by command of the king in 1330. The next event of hiſtorical importance which occurred here, was the execution of

Henry Stafford, duke of Buckingham, by whoſe influence and exertions Richard III. was advanced to the throne, though he ſubſequently thought proper to raiſe the ſtandard of rebellion againſt his maſter. In the 17th century, when civil war deſolated the kingdom, Saliſbury was frequently laid under contribution by both parties; but no event of particular import happened in this city till towards the cloſe of Cromwell's government. At the time, however, of the premeditated revolt in 1655, it is remarkable as having been the only place in England which became the ſcene of active operations in favour of the houſe of Stuart. Penruddock, Grove, Jones, and ſeveral other gentlemen of Wiltſhire, marched into the city with a ſquadron of 200 horſe, and ſeizing the ſheriff and judges, then preſent at the aſſizes, proclaimed Charles II. king. Clarendon affirms, that if this troop had been ſupported by a ſimultaneous movement of their aſſociates in other parts of England, the reſtoration of that monarch would moſt likely have been effected by force of arms, and not, as afterwards happened, by the deciſion of parliament and the influence of general Monk.

Eminent Natives.—Saliſbury has given birth to many perſons of diſtinction, among whom are the following; Walter Winterburn, cardinal of St. Sabin; William Horman, author of ſeveral works in proſe and verſe; John Thornborough, biſhop of Worceſter; George Coryat, a Latin poet, and a topographer; Michael Maſchiart, an able civilian and poet; ſir Toby Mathews, a celebrated Jeſuit and politician; Dr. Thomas Bennet, a diſtinguiſhed divine and writer; Thomas Chubb, and John Eedes, alſo noted controverſialiſts; John Greenhill, an eminent portrait painter; Richard Hayter, a theological author; William and Henry Lawes, both famous muſicians and compoſers; Dr. Harris, an eminent hiſtorian and biographer; James Harris, the renowned author of Hermes, and of other philoſophical and philological works; John Tobin, author of the Curfew and the Honey Moon; and the late John Feltham, author of a Tour through the Iſle of Man, and ſeveral other volumes.

In the vicinity of Saliſbury are many objects worthy of detailed deſcription, but our limits reſtrain us from more than a curſory mention of them. About two miles ſouth-eaſt from the city is Clarendon park, anciently a royal foreſt, and the ſcite of a palace, commonly called king John's palace, from a tradition that it was erected by that monarch. It is certain, however, that a royal reſidence exiſted here before his time, as Henry II. is mentioned by the old writers as having frequently held his court at Clarendon. In 1164 that monarch convened a great council here, in which thoſe laws limiting the eccleſiaſtical authority were paſſed, which are ſtill called "The Conſtitutions of Clarendon." Richard I. occaſionally viſited this retreat during the ſhort period of his reign which was ſpent in England. His brother and ſucceſſor, king John, is ſaid to have been much attached to this place, and it is not unlikely that the conſiderable additions he made to the palace, gave riſe to the tradition of his having been its founder. But it was in the reign of Henry III. that Clarendon attained the zenith of its glory. Its buildings were much enlarged and improved by that prince, who beſides held his court oftener, and with greater ſplendour here, than any of his predeceſſors. Edward II. ſummoned a parliament to meet here in 1317; but the diſſention which then prevailed between the king and his barons prevented its aſſembling. During this prince's reign Clarendon was diſafforeſted; at leaſt it was then firſt denominated the *park* of Clarendon. In 1357, when the plague raged in London, and in many of the principal towns in England, Edward III. and his two royal priſoners, the kings of France and Scotland, paſſed the ſummer months at this palace. From that period no mention is made of Clarendon till the reign of Edward VI., when the whole domain was granted to William Herbert, earl of Pembroke, for his own and his ſon's life. While the latter held it, we are informed by Nichols in his "Progreſſes of Queen Elizabeth," that her majeſty was entertained at the Lodge, and enjoyed the pleaſure of hunting in the park. After this event, another chaſm occurs in the hiſtory of this place; but in 1665 we find it mentioned as granted to George Monk, duke of Albemarle, by king Charles II. At that time the ſuperficial contents of the whole park or domain were eſtimated at 4300 acres. Monk bequeathed it to his couſin Granville, earl of Bath, from whoſe heirs it was purchaſed by Benjamin Bathurſt, eſq. anceſtor to the preſent proprietor, Frederick Hervey Bathurſt, eſq. whoſe ſeat, called Clarendon Lodge, ſtands about a mile from the palace. This once magnificent edifice, now completely in ruins, occupied an eminence overlooking a narrow vale on its north-weſtern ſide; and ſeems, from the extent of its preſent remains, to have covered a large ſpace of ground. One lofty wall, which appears to have been the end wall of ſome large room, is the only part of the ſtructure ſtanding, but numerous foundations of other walls may yet be traced. The whole is ſurrounded by a large foſſe and vallum, which incloſes between ſixty and ſeventy acres.

Chlorus's camp, or Figbury-Ring, is ſituated to the north of Clarendon park, on a hill near the Roman road from Old Sarum to Wincheſter. This intrenchment is circular in its form, and is environed by a double ditch and rampart. The principal entrance opens towards the eaſt, and is defended by two ſmall outworks. The country ſituated to the north and north-eaſt of this encampment is interſected in various directions by banks and ditches, ſome of which ſeem to form incloſures, while others run out in irregular lines, without any apparent connection with each other. Several groups of barrows are ſeen near theſe ditches, and at one point are ſome appearances indicating the ſcite of a Britiſh village.

Ivy church, ſituated on the ſouth-eaſt ſide of Clarendon, was formerly the ſcite of a priory dedicated to the Bleſſed Virgin. This houſe was founded and endowed by king Henry II. for four canons, and ſubſequently roſe to opulence and diſtinction by the munificence of his ſucceſſors. The monks here were the ſpiritual attendants at the royal chapel in Clarendon palace. Ivy church now forms part of the manor of Alderbury, or Oldbury, the property of lord Radnor. Eaſtward from it ſtands the village of Farley, the birth-place of the celebrated ſir Stephen Fox, anceſtor to the preſent earl of Ilcheſter and lord Holland.

Longford caſtle, the ſeat and property of the earl of Radnor, is ſituated about three miles to the ſouth-eaſt of Saliſbury, on the banks of the river Avon, which flows through the park in a clear, rapid, and broad ſtream. The houſe was erected in 1591, by ſir Thomas Gorges and his lady, on the ſcite of a more ancient manſion, ſaid to have been built by Walter Walerm, lord of Longford, in the reign of Richard I. It is a triangular ſtructure, in imitation of the noted Catholic monogram of the Trinity, with a court in the centre, and a round tower at each angle. The external walls are compoſed of ſtone and flint; and the principal front was formerly adorned with a great profuſion of architectural ornaments, all in ſtone; ſuch as columns, pilaſters, ſculptured friezes, baluſtrades, caryatides, &c. This curious building was formerly ſurrounded by a deep moat, and from the views of it, drawn by Thacker, the grounds appear to have been bedecked with fiſh-ponds, parterres, clipt hedges, and terraces. All theſe, however, have long been ſwept away, and the caſtle itſelf is deſtined to be demoliſhed, and a much larger edifice raiſed in its ſtead. This manſion contains a very extenſive and valuable collection of pictures, many of them by the firſt maſters. Here is alſo a ſteel chair, remarkable for the great labour and ingenuity diſplayed in its execution. It was made by Thomas Rukers, at the city of Augſburg, in the year 1575, and conſiſts of more than 130 compartments, occupied by groups of figures, repreſenting a ſeries of events in the annals of the Roman empire, from the landing of Æneas in Italy to the reign of Rodolphus II.

For an account of Old Sarum and Wilton Houſe, ſee *Old* Sarum and Wilton.

Antiquitates Sariſburienſes, or the Antiquities of Old and New Sarum, &c. 8vo. 1777. This was written by the Rev. Edward Ledwich. The Hiſtory and Antiquities of the Cathedral Church of Saliſbury, &c. 8vo. 1723. A Deſcription of that admirable Structure the Cathedral Church of Saliſbury, &c. 4to. 1787. Beauties of England and Wales, vol. xv. Wiltſhire, 8vo. 1814. The Hiſtory and Antiquities of the Cathedral Church of Saliſbury, illuſtrated with engraved Plans, Sections, and Details; 4to. 1815, by John Britton, F.S.A.

Saliſbury, a fertile diſtrict of North Carolina, which comprehends the counties of Rockingham, Guilford, Montgomery, Stokes, Surry, Iredell, Rowan, Cabarras, and Mecklenburg; bounded N. by Virginia, and S. by South Carolina. Iron ore is found here, which ſupplies the works that have been eſtabliſhed for the manufacture of this metal; tobacco is alſo cultivated, and is of good quality, and many of the planters are wealthy.—Alſo, the capital of the above diſtrict, which is a poſt-town, ſituated in Rowan county, on the N.W. ſide of Cane creek, about five miles from its junction with Yadkin river; containing a court-houſe, gaol, and about 70 houſes. It is ſituated in a fine country, 120 miles W. of Fayetteville. In its neighbourhood is a ſubterraneous well, which has been lately diſcovered, and is reckoned a great natural curioſity. N. lat. 35° 47′. W. long. 80° 17′.—Alſo, a townſhip of Eſſex county, Maſſachuſetts, divided into two pariſhes. The moſt flouriſhing part of the town is a point of land formed by the junction of Merrimack and Powow rivers; 4 miles N. of Newbury port, and 46 N.E. of Boſton. It was incorporated in 1640, and contains 2047 inhabitants.—Alſo, a poſt-town of Vermont, on Otter creek, in Addiſon county. It contains 709 inhabitants.—Alſo, a conſiderable agricultural townſhip in Hillſborough county, New Hampſhire; ſituated on the W. ſide of Merrimack river, at the mouth of Blackwater river, and oppoſite to Canterbury; ten or twelve miles N. of Concord. It was incorporated in 1768, and contains 1913 inhabitants.—Alſo, a poſt-town in the northweſternmoſt townſhip of Connecticut and Litchfield county. Here are ſeveral forges, iron-works, and a paper-mill. It contains 2321 inhabitants.—Alſo, a town of Delaware, in Newcaſtle county, on the N. ſide of Duck creek, on the S. line of the county; 12 miles N.W. of Dover.—Alſo, two townſhips in Pennſylvania, one in Lancaſter county, containing 1841, and the other in Northampton county, containing 933 inhabitants.—Alſo, a poſt-town of Maryland, in Somerſet county, between the two principal branches of Wicomico river. It contains about 45 houſes, and an epiſcopal church, and carries on a conſiderable leather trade; a port of entry, 163 miles S. by W. of Philadelphia.—Alſo, a ſmall poſt-town of Virginia; 26 miles from Alexandria.—Alſo, an iſland at the W. end of Hudſon's ſtrait, E. of Nottingham iſland. N. lat. 63° 35′. W. long. 76° 27′.

Saliſbury *Point*, forms the N. ſide of the mouth of Merrimack river, or Newbury harbour, in the Maſſachuſetts. N. lat. 42° 49′. W. long. 70° 54′.

Saliſbury *Sound*, a bay on the W. coaſt of America. N. lat. 57° 30′. W. long. 136°.

SALISERAI, a town of Grand Bucharia, the ancient reſidence of the khans of Zagatai; 60 miles E.S.E. of Termed.

SALISSO, in *Ancient Geography*, a place of Gaul, marked in the Itinerary of Antonine in Germania prima, on the route from Treves to Straſburg; ſuppoſed by D'Anville to be Sultzobach.

SALISUOLO, in *Geography*, a town of Italy, in the Treviſan; 7 miles N.E. of Trevigio.

SALIVA, in *Phyſiology*, the fluid ſecreted by the ſalivary glands, and poured by their ducts into the mouth, for the purpoſe of moiſtening the food while it undergoes maſtication. In common language it is conſidered as ſynonimous with *ſpittle;* which is a compound fluid, conſiſting of the limpid water ſecreted by the ſalivary glands, and mucus, which is furniſhed by a different claſs of glands. See Deglutition, in which article the chemical compoſition of this fluid is conſidered.

The fermentative power aſcribed to the ſaliva by Boerhaave and Hoffman, has been ſufficiently aſcertained by the later experiments of ſir John Pringle and Dr. Macbride. The former, in the Appendix to his Obſervations on the Diſeaſes of the Army, has given the reſult of ſeveral experiments made to aſcertain the effects of the ſaliva in digeſtion.

By adding a ſmall portion of it to ſome raw beef, he remarked that this mixture putrefied ſlower than another which had no ſaliva in it; from whence he infers its antiſeptic nature.

Another experiment made to aſcertain the fermentative power of ſaliva was this: he took two drachms of freſh meat, the ſame quantity of bread, and to theſe added as much ſaliva as he ſuppoſed neceſſary to digeſtion. This mixture being beat in a mortar, was put into a cloſe phial, and ſet in the furnace, where it remained about two days, with ſcarcely any viſible fermentation; but on the third day this action became manifeſt. The bread and fleſh were then found riſen in the water, a ſediment forming, and bubbles of air continually mounting. In ſhort, the fermentation was complete, being diſtinguiſhed by a vinous ſmell, as in ordinary working liquors. The action continued about twice as long as when no ſaliva was uſed; it was likewiſe much more moderate, and generated air with little tumult. When the fermentation entirely ceaſed, the mixture had a pure acid taſte; and, what was equally remarkable, had no putrid ſmell during the whole proceſs.

From theſe experiments the doctor concludes, that if the ſaliva is well prepared, is in a ſufficient quantity, and well mixed with the aliment, it is qualified for reſiſting putrefaction, preventing immoderate fermentation, flatulence, and acidity in the primæ viæ. But if the ſaliva is deficient, unſound, or not well mixed with what is ſwallowed, the aliment will firſt putrefy, then grow acid, and in that action ferment ſtrongly, and generate much air in the ſtomach and bowels.

Accordingly, in ſurfeits, or upon ſwallowing without due maſtication; when meats are eat tough and fat, or with farinaceous ſubſtances unfermented; or, when by any accident the ſaliva is vitiated, too ſcanty, or not intimately mixed with the food, the fermentation becomes tumultuous, the ſtomach ſwells with air; and this extraordinary commotion being attended with an unuſual heat, brings on that uneaſineſs called the heart-burn, and occaſions that exceſſive ſourneſs of the ſtomach, by which the teeth are not only ſet on edge, but the throat excoriated. This laſt, however, only happens when the ſtomach is relaxed, or any wiſe diſabled from conveying the whole aliment into the inteſtines; for what is left having time to undergo a complete fermentation, is thereby changed into a harſh ſort of vinegar.

Since one great uſe of ſaliva is to moderate fermentation, it is probable, that ſuch ſubſtances as reſemble it moſt in this quality, will prove the beſt ſtomachics, whenever that humour fails. Of this claſs are acids, wine, ſpirits, and bitters; but as all theſe retard as well as moderate fermentation, they may be frequently leſs proper than ſome of the antiſcorbutics, as horſe-radiſh, muſtard, and garden ſcurvy-graſs, which, at the ſame time that they moderate, retard fermentation but little. As to aromatics, however aſſiſting they may be in digeſtion by their heat and ſtimulus, they promiſe leſs of a carminative quality than either the bitters or antiſcorbutics; inaſmuch as they are more diſpoſed to increaſe than to moderate fermentation, and conſequently to produce air inſtead of ſuppreſſing it.

Dr. Macbride, in his Experimental Eſſays, eſſay firſt and ſecond, gives an account of ſeveral experiments in which fermentation was produced in different alimentary mixtures, by the addition of ſaliva, which diſcovered no ſigns of fermentation without it. See Digestion.

M. Gaſtaldy, in a theſis on the ſaliva, obſerves, that it takes its name from the ſalt it contains; which ſalt he will have to be partly a volatile acid, and partly alkalious. He adds, that it contains ſome oleaginous parts, and a little earth. By being compounded of ſo many different kinds of parts, it becomes a diſſolvent proper for all the different kinds of food on which we live. Its natural and laudable ſtate is, to be a little more viſcid than common water, and much leſs ſo than milk; and it is preſerved in this ſtate by the application of the ſpirits, and of the particles of air which inſinuate into it.

According to all appearance, the ſaliva is derived from the blood of the arteries; part of the arterial blood, brought to the ſalival glands, ſerves to feed them; another part is returned into the veins, and continues the circulation; and a third part, which is the ſerum, receiving a ſub-acid quality from them, is there converted into ſaliva. Some authors have imagined that the nervous juice contributed to the compoſition of the ſaliva; and the rather, becauſe larger and more numerous twigs of nerves are communicated to theſe glands than to moſt other parts, which yet have a more exquiſite feeling than theſe; but Dr. Nuck has refuted this opinion, by ſeveral experiments.

Too great an excretion of ſaliva, Boerhaave obſerves, diſorders the firſt digeſtion; and hence cauſes thirſt, dryneſs, a black bile, and, finally, conſumption, and atrophy. On the contrary, if no ſaliva be diſcharged into the mouth, or if only leſs than ordinary, it ſpoils both the manducation of the food, and its taſte, ſwallowing, and digeſtion; and, withal, occaſions thirſt.

SALIVARIS, in *Botany*, a name given by ſome authors to the pellitory of Spain, or pyrethrum of the ſhops, from its quality of draining a large quantity of the ſaliva into the mouth by its great heat and acrimony.

SALIVARY *Ducts* and *Glands*, in *Anatomy*. The latter are the glandular bodies which ſecrete the ſaliva, and the former the tubes by which this ſecretion is conveyed into the mouths. See Deglutition.

Salivary *Fiſtula*, in *Surgery*, implies an opening, or ſmall ulcer, on the ſide of the face, diſcharging the ſaliva almoſt continually; but in larger quantity when the patient is maſticating, or converſing; and it is the conſequence of wounds, ulceration, or ſloughing, extending to the parotid gland, or its excretory duct.

The difficulty of healing ſalivary fiſtulæ of the parotid duct, ought to make us very circumſpect in the performance of operations on the cheeks. Richerand once cut out of a gentleman's cheek an atheromatous tumour, the baſe of which was adherent to this duct, and had he not uſed the precaution of drawing the ſwelling outward with a hook after the requiſite diviſion of the ſkin, he might have wounded the duct, and occaſioned a ſalivary fiſtula. Noſographie Chirurgicale, tom. iii. p. 278. edit. 2.

A ſalivary fiſtula is not merely a great deformity, it is an annoying, and even a ſerious complaint. During a meal the ſaliva will flow out ſo abundantly, that the patient can hardly keep his clothes dry; and it is ſaid that, in the ſhort ſpace of a quarter of an hour, two ounces of this fluid have been diſcharged. What is worſe, the daily loſs of a ſecretion, ſo highly uſeful in the function of digeſtion, may induce a train of extremely unpleaſant ſymptoms, loſs of appetite, indigeſtion, weakneſs, and emaciation.

A ſalivary fiſtula, like every other one, depending upon a breach of continuity in an excretory tube, is not likely to heal while the ſecretion is allowed to continue to paſs through the external opening. Preventing this circumſtance for a certain time, is the leading principle on which moſt of the common plans of treatment are founded.

When a wound of the parotid duct is recent, the moſt judicious practice is to endeavour to unite the wound by the firſt intention, in the hope that one part of the tube may coaleſce with the other, or rather in the expectation of accurately uniting the more external part of the wound, while the inſide of the cut may remain free for the paſſage of the ſaliva into the mouth. There can be little doubt that in the generality of caſes the cure is effected on the latter principle, the anterior portion of the duct becoming obliterated. The twiſted ſuture is the moſt likely means of accompliſhing an exact and prompt union of the ſkin.

The application of cauſtic to the fiſtula has been ſometimes tried with ſucceſs. The eſchar, being more or leſs thick, ſtops the farther eſcape of the ſaliva. Deſiccating cauſtics, ſuch as the argenti nitras, ought to be preferred, becauſe the eſchar produced by them is more dry and ſolid, and is longer in becoming detached. But, it muſt be owned that, in adopting this plan, there is ſome riſk of ſeeing the fiſtula recur after the ſeparation of the ſlough. The loſs of ſubſtance then renders the cure more difficult, and ſhould this deſirable event be fulfilled, a large disfiguring ſcar will continue on the middle of the cheek. Cauſtics, indeed, are not likely to anſwer in theſe caſes, unleſs the outward aperture be very ſmall, and the ſaliva have ſome other fiſtulous channel, by which it can get into the mouth.

Compreſſion is another common practice for the cure of ſalivary fiſtulæ; but it is employed in various ways, and on different principles. Some practitioners are advocates for applying a graduated compreſs to a part of the parotid duct betwixt the fiſtula and the gland; others are in favour of making the compreſſion act only upon the gland itſelf.

With regard to the firſt of theſe methods, the evident principle of cure in it is to prevent the ſaliva, for a certain time, from paſſing out of the fiſtula, in which circumſtance the opening will be likely to heal. The method ſeems particularly rational, and we have no doubt that, with a little care and ſkill, it would frequently be ſucceſsful. The inconvenience of the practice is, that it is apt to give riſe to a painful œdematous enlargement of the parotid gland, in conſequence of the temporary retention of the ſaliva in it;

but it ſhould be remembered that ſuch ſwelling is always diſperſed after the fiſtula is healed, and the compreſſion removed. Whatever may be the objections to preſſure for the cure of fiſtulæ of the parotid duct, none can be urged againſt it in caſes where the fiſtula proceeds from the gland, as in theſe it is allowed to prove completely effectual.

The ſecond mode of employing compreſſion is entirely different from the preceding; it was firſt practiſed by Deſault, and conſiſts in making ſuch preſſure on the parotid gland as to produce an atrophy of it, and a ceſſation of the ſalivary ſecretion on this ſide of the face. Deſault uſed to lay compreſſes over the parotid gland, and bind them on the part with a roller, enjoining the patient to live entirely on liquid food, and avoid talking. The bandage was tightened anew every day. A continuance of this plan a certain time cauſed the gland to waſte away; its function was aboliſhed; no more ſaliva paſſed into the duct, and the fiſtulous opening healed. It might, *à priori*, be ſuppoſed that this method would be apt to induce diſorder in the digeſtive organs, by leſſening the quantity of ſaliva ſecreted; but, if we can credit Bichat, there is no cauſe for ſuch apprehenſion, as the reſt of the ſalivary glands make up the deficiency of the ſecretion by an increaſe of their own function. Œuvres de Deſault, tom. ii. p. 218—220.

Another method of curing ſalivary fiſtulæ is to introduce a probe, or ſeton, ſo as to render the continuation of the parotid duct pervious again. Some caſes have been cured by eſtabliſhing an internal fiſtula, or a channel for the ſaliva on the inſide of the cheek. Of all the plans, this is the moſt ancient, and it has been conſidered as the beſt by ſeveral diſtinguiſhed ſurgeons, Cheſelden, Monro, B. Bell, Deſault, &c.

The latter ſurgeon practiſed it ſucceſsfully on a woman whoſe parotid duct was ſo cloſed at its termination in the mouth, that the ſmalleſt probe could not be got into it. He perforated the cheek from without inwards, with an hydrocele-trocar, which he directed obliquely downwards and inwards, in order that the artificial channel might imitate, in a certain degree, the natural one, and correſpond with the glandular portion of the duct. A thread was then conveyed into the mouth through the cannula, the ſtilette having been withdrawn; a ſmall ſeton was faſtened to the thread, and pulled back into the new channel; but not ſo far as to intervene betwixt the lips of the external wound, in which Deſault merely left the ſingle thread. This was fixed on the cheek with a bit of ſticking plaſter. The wound was dreſſed with lint, and the ſeton was renewed every day, being enlarged by the addition of a few threads each time. Merely the ſingle thread was apparent externally, lying under the adheſive plaſter, betwixt the lips of the wound. All conſiderable motion of the jaw was forbidden, and the patient was permitted to take only liquid nouriſhment for a long time. On the forty-fourth day the ſeton was ſuppreſſed, and the ſingle thread, which had been left in the part, was taken out on the fiftieth. The ſmall outer opening was then touched with cauſtic, and it ſoon healed. In three months the cure was complete.

The foregoing treatment is deſcribed as being at leaſt as efficacious as compreſſion. It requires, like this other method, that the jaw ſhould be kept almoſt motionleſs. If it be true, that notwithſtanding the continual paſſage of the ſaliva through the artificial opening, the new channel has a tendency to be effaced, yet it muſt be acknowledged that the difficulty of exerciſing an invariable compreſſion on parts ſo moveable as the cheeks, is quite as great an inconvenience to be alleged againſt the excellence of preſſure. Richerand maintains that this obſervation ſtands good, whether the compreſſion be made with a roller and graduated compreſs, or with particular machines, conſtructed with ſprings, and which act by their elaſtic property.

Finally, it is to be noticed that ſalivary fiſtulæ, after reſiſting a long while all the efforts of ſurgery, ſometimes get well of themſelves. Richerand has witneſſed two ſpontaneous cures in young ſcrofulous ſubjects, a conſiderable time after the argenti nitras had been repeatedly applied in vain. It may happen, after a ſalivary fiſtula is apparently cured, that the ſmall ſcar may break out again. The parotid duct ſhould, in this caſe, be examined with a probe; for probably the relapſe is owing to this tube having become contracted. In one caſe of this ſort, profeſſor Dubois introduced a probe at the orifice on the inſide of the cheek, and diſcovered a foreign body near the fiſtula. It was a fiſh-bone, he extracted it, and a cure ſoon followed.

The practice of the ſame ſurgeon furniſhes us with an inſtance of a ſalivary fiſtula, cauſed by ulceration of the ſubmaxillary gland, and cured by perforating the inferior parietes of the mouth. The new paſſage was kept diluted a certain time; the ſaliva took its courſe through it; and the fiſtula healed. Richerand, Noſographie Chir. tom. iii. p. 280—282.

SALIVARY *Glands, Diſeaſed.* See RANULA.

SALIVAS, in *Geography*, a town of South America, in the kingdom of New Granada.

SALIVATION, SALIVATIO, in *Medicine*, a promoting of the flux of ſaliva, by means of medicines; chiefly by mercury.

The chief uſe of ſalivation is in diſeaſes belonging to the glands, and the membrana adipoſa, and principally in the cure of the venereal diſeaſe; though it is ſometimes alſo uſed in epidemic caſes.

The body is prepared for ſalivation by a copious and continued uſe of attenuating, diluting, ſoftening decoctions; as of ſcabious, pellitory, china, ſarſaparilla, ſaſſafras, and ſanders.

Salivation is either *partial* or *univerſal*. By the firſt, only the humours of ſome part of the body are to be diſcharged; as in catarrhs, tooth-ache, &c. By the ſecond, the whole maſs of blood is to be purged.

The firſt is raiſed either by a ſlow continued chewing of ſome tenacious matter, as maſtich, wax, or myrrh; eſpecially if other ſharp things be mixed with them, as pyrethrum, ginger, or pepper; or by drawing in ſharp irritating vapours, as thoſe of tobacco, roſemary, thyme, marjoram, &c.

The latter is effected by the action of ſuch medicines as create ſome ſlight but conſtant nauſea; as ſtibium not quite fixed, nor yet quite emetic; a little common vitriol, &c.; but chiefly by ſuch as diſſolve all the parts of the maſs of blood, turn them into lympha, and thus cauſe a ptyaliſm; ſuch are crude quickſilver, cinnabar, a ſolution of quickſilver in aqua-fortis, white and red precipitate, turbith mineral, ſweet ſublimate of mercury, &c.

SALIVATION, *Mercurial*, has been a very uſual method of cure; eſpecially in the venereal, ſcrofulous, and hypochondriac caſes: in effect, it proves the ſureſt remedy, yet diſcovered, for the Gallic lues; though the diſcovery of it, as that of moſt other remedies, was owing to chance. Jac. Carpi, a phyſician of Bologna, having read in Avicenna, and Meſve, two Arab authors, that mercury, applied externally, was proper for the lepra, and ſome kinds of puſtules, particularly the ſcabies, or itch, had a mind to try it in pocky itch: a ſalivation was, hereupon, unexpectedly raiſed, and the patient was unexpectedly cured, not only of his itch, but of his pox. The ſame method he afterwards uſed for the pox itſelf; and, meeting with great ſucceſs therein, others were induced to follow him; and thus it acquired a very general and diſtinguiſhed reputation. But this method has been of late leſs commonly uſed, becauſe the advantages of mercury have been obtained by uſing it as an alterative, without the trouble and danger which attend this mode of promoting an evacuation by it. However, venereal maladies of long ſtanding, and ſuch as have ariſen to a great height, or have affected the bones, require a full ptyaliſm. In theſe caſes, the diſeaſe has been ſubdued for a time by the alterative method, but afterwards broken out afreſh, and been completely cured by ſalivation; and, on the other hand, ſome cutaneous foulneſſes, after reſiſting ſalivation, have yielded to an alterative courſe.

There are two manners of applying mercury to raiſe a ſalivation; the one external, or in the way of unction, by mixing it up with ſome unguent, and then rubbing it on the joints, &c. This is, in general, beſt done by rubbing a proper quantity of the unguentum cæruleum every night, or every other night, on the thighs. The ſalivation ſhould be raiſed gradually, and ſubſide as ſlowly: the patient ſhould be prepared by a ſpare diet for a few days, by bleeding, and by uſing the warm bath two or three times before the operation; and during the progreſs of it, his ſtrength ſhould be ſupported with plenty of light but nouriſhing diet. A pint of gruel, or a decoction of mallows and liquorice in milk and water, almond emulſion, and barley-water, with gum arabic diſſolved in it, may be repeatedly given every two or three hours; and if he is faint, he may take, occaſionally, a little wine whey, maced ale, or mulled wine. A woman that expects the menſes ſhould defer the operation till they ſettle. The other method is internal, where the mercury is taken at the mouth.

In each caſe, the mercury inſinuates itſelf into the maſs of blood; and mixing with the venereal poiſon, the two bodies, thus locked together, are drawn, with the ſeroſity, into the ſalival glands, where they are ſeparated and diſcharged; as finding the pores of thoſe glands proportioned to their figures, and proper to receive them.

Dr. Quincy will have the internal to be much the ſafer and better method. The mineral globules, he thinks, being intimately combined with ſalts, in the preparations given inwardly, will, by the irritation thereof, be eaſily and fully thrown off by the ſecretory organs, till the blood is quite diſcharged of its load: whereas, in mercurial frictions, it is poſſible ſome of the heavy particles may be left lodged in the interſtices of the fibres, or cells of the bones. Add to this, that, by computing the proportion of mercury in all the doſes neceſſary to promote a ſpitting, internally, and the weight of the ſame mineral uſed when it is done by unction; the quantity uſed in the latter caſe far exceeds that in the former: conſequently, the ill effects apprehended from that dangerous medicine muſt needs be more ſenſible in the one caſe than in the other.

The external application, therefore, is only to be allowed of, where either the caſe requires the violence of ſuch a management; or outward ulcers and tumours require a particular cure by liniments. Thus Quincy.

For the beſt method of adminiſtering mercury, and its uſe, ſee Lues *Venerea*.

But a learned French phyſician, M. Chicoyneau, chancellor of the univerſity of Montpellier, has done ſome diſcredit to the practice of ſalivating in any manner, and that in a little treatiſe; where he endeavours to prove, that the ſalivation itſelf contributes nothing to the cure, but is rather prejudicial to it; that the ſalutary effects of the mercury are independent of any evacuation at all; and that it acts purely as a ſpecific. It is without reaſon, therefore, he urges, that venereal patients are put to the torture of a ſalivation; ſince the full effect of the medicine may be had without carrying matters to that extremity. The ſalivation is only an accident to the cure; which is effectually obtained by a mercurial unguent rubbed on the joints in ſuch quantities, and at ſuch intervals, as not to raiſe any ſalivation. He ſupports the whole by the experience of forty or fifty cures, wrought in one year, by this new method. The ſame method, it ſeems, has been tried alſo in England, and with ſucceſs; as appears from a tranſlation of Chicoyneau's piece, ſince publiſhed, with notes, by an Engliſh phyſician.

It has been obſerved, that ill conſequences have reſulted from the ſudden ſtopping of ſalivations; for the removal of which Dr. Silveſter recommends a renewed ſalivation; either by pills with guaiacum, to be taken morning and evening, with one grain of calomel in each doſe, and to be waſhed down with a draught of warm decoction of the woods, or, in more obſtinate caſes, by rubbing a drachm of the ung. cær. fortius upon the legs and thighs twice a day, for three days, which is ſufficient to produce a gentle ſalivation. See a recital of the caſes to which this method was applied, in London Med. Obſ. and Inq. vol. iii. art. 24.

SALIUNCA, in *Ancient Geography*, a town of Hiſpania, in the interior of the country of the Autrigoni. Ptolemy.

SALIX, in *Botany*, the willow, ſallow and oſier genus, has been ſo called from remote antiquity. Etymologiſts have derived the word from *ſalio*, to ariſe or ſpring up, conceiving it to allude to the quickneſs of growth in theſe plants. Its Greek ſynonym, Ιτεα, acknowledges a parallel derivation, "from ιεναι, *to go*, becauſe it grows faſt." Hence we cannot but prefer ſuch an explanation to that of De Theis, who, though he often looks with great advantage beyond the bounds of the learned languages, proves on the preſent occaſion leſs ſatisfactory, in deducing *Salix* from the Celtic *ſal*, near, and *lis*, water; however applicable ſuch a ſenſe may be to the ordinary ſituation of the willow tribe.—Linn. Gen. 514. Schreb. 674. Willd. Sp. Pl. v. 4. 653. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 5. 352. Sm. Fl. Brit. 1039. Purſh 608. Juſſ. 408. Tourn. t. 364. Lamarck Illuſtr. t. 802. Gærtn. t. 90.—Claſs and order, *Dioecia Diandria*. Nat. Ord. *Amentaceæ*, Linn. Juſſ.

Gen. Ch. Male, *Cal.* Catkin oblong, imbricated on all ſides, compoſed of ſingle-flowered, oblong, flat, bluntiſh, ſpreading ſcales, and accompanied by a few involucral leaves from the bud. *Cor.* Petals none. Nectary a ſmall cylindrical, abrupt, honey-bearing gland, at the inner ſide of the flower, ſometimes double. *Stam.* Filaments two, rarely more, ſtraight, thread-ſhaped, longer than the calyx-ſcales; anthers two-lobed, with four cells.

Female, *Cal.* Catkin and ſcales as in the male. *Cor.* Petals none. Nectary as in the male, but often ſmaller. *Piſt.* Germen ſuperior, often ſtalked, ovate, tapering into a ſtyle various in length, moſtly exceeding the calyx-ſcale; ſtigmas two, notched, erect. *Peric.* Capſule ovate-awl-ſhaped, of one cell and two concave, finally revolute, valves, each crowned with half the ſtyle. *Seeds* numerous, ovate, minute, crowned with ſimple, ſilky, copious hairs.

Obſ. Some ſpecies have three, five, or even more, ſtamens, of unequal length. In a few the few filaments are more or leſs combined, and occaſionally even the anthers are united. Very rarely one or two male flowers have been obſerved in a female catkin; ſee n. 49. *S. hermaphroditica* is the only known ſpecies with united flowers. Linnæus obſerves that the report of individual willows changing their ſex, and being one year male, another female, is a fiction. We believe the organs of impregnation are occaſionally liable to morbid appearances, from inſects or ſome other cauſe, which may have given riſe to ſuch an opinion. If however we are right in our conjectures relating to the firſt ſpecies, ſee below, theſe organs are capable of a ſomewhat ſimilar metamorphoſis.

Eſſ. Ch. Male, Calyx the ſcales of a catkin. Petals none. Nectary a gland, at the baſe of the ſtamens within. Stamens one to five.

Female, Calyx and nectary like the male. Petals none. Stigmas two. Capſule ſuperior, of one cell and two valves. Seeds downy.

The ſpecies of this vaſt, important, and moſt natural genus are all woody, from one inch to fifty feet in height, natives of temperate or very cold climates, and generally of a wet ſoil. Leaves deciduous, ſtalked, ſimple, and undivided, almoſt always alternate. Stipulas in pairs at the baſe of the footſtalks, various according to the age of the tree, or luxuriance of the branch. Catkins from the ſame, or a different, bud, green or yellowiſh. The wood, being of quick growth, is commonly light, ſoft and white, though uſeful for ſeveral purpoſes. The pliant twigs are moſt valuable in an economical point of view; eſpecially of ſuch as, for their length and peculiar tenacity, are termed oſiers, and cultivated for all the different ſorts of baſket-work. The bark of ſeveral ſpecies is aſtringent, and uſeful for tanning, as well as for medical purpoſes. All grow with great facility from cuttings, and it is a common opinion that they rarely propagate themſelves by ſeed; but we have for many years witneſſed the contrary. We can alſo contradict another common opinion, taken up by botaniſts who found a difficulty in diſcriminating the ſpecies, that they frequently generate mule varieties. In a garden where, for 20 years, almoſt every Britiſh Willow, and many foreign ones, have been cultivated together, under our inſpection, and where abundance of ſeedling plants have come up every ſeaſon; though many of theſe have been purpoſely preſerved for examination, no mule plant, nor even any variety, has occurred. The greateſt difference of aſpect indeed, and the ſtrangeſt diverſities of ſhape and ſize, in the foliage and ſtipulas, are ſeen, according to the treatment of each individual, with reſpect to pruning, watering, ſtarving, felling, and allowing young ſhoots to grow from an old root.

In order to become acquainted with the ſpecies of this intricate genus, it is neceſſary to obſerve them continually, but more eſpecially at three different periods; in flower; in early leaf, when their capſules are ripening, and their ſtipulas in perfection; and laſtly, when their leaves have attained their full ſize and conſiſtency.

Linnæus, in his *Flora Lapponica*, was the firſt botaniſt who beſtowed much attention on the various ſpecies of *Salix*. That work is the foundation of our knowledge, more eſpecially of the alpine ones; to which alſo Lightfoot, in his *Flora Scotica*, paid conſiderable regard. But the latter laboured at the ſubject with heſitation and miſtruſt, from an opinion of the ſpecies being confounded by croſs impregnation. This author, and his contemporary Hudſon, have therefore enumerated hardly a fourth part of the native Willows of our iſland. The ſubject was firſt taken up, with vigour and effect, by the late James Crowe, eſq. F.L.S., of Lakenham near Norwich, a moſt excellent Britiſh botaniſt, who, in the courſe of his agricultural purſuits, ſoon diſcovered that thoſe who made uſe of theſe plants for economical purpoſes, were often baffled in their intentions, for want of knowing one from another, and that botaniſts were little leſs in the dark. Profeſſor Hoffmann, of Gottingen, had indeed illuſtrated and delineated ſome in a manner that left hardly any thing to be wiſhed; but his admirable work was extended ſo far only as to ſerve as a model of inquiry, not as a complete inſtructor. Mr. Crowe, therefore, after collecting into his garden, a ſpot moſt favourably ſituated for the purpoſe, every wild as well as cultivated Willow that he could poſſibly obtain, laboured, with the writer of this, for many ſucceſſive years, in ſtudying their appearances and diſcriminative characters. Hence the Britiſh ſpecies have been much more fully explained in the *Flora Britannica* and *Engliſh Botany* than in any preceding work of the kind, either at home or abroad. Some, nevertheleſs, ſtill remain for further inquiry, and the ſubject is at this time purſuing by Mr. George Anderſon, F.L.S., who has added ſeveral new ſpecies to the Britiſh liſt, and has eſpecially improved our knowledge of the American kinds, as may be ſeen in Mr. Purſh's *Flora* of North America. Theſe laſt have remained almoſt entirely undetermined, till ten of them were defined and deſcribed by the Rev. Dr. Muhlenberg, in a paper publiſhed by Willdenow at Berlin, and tranſlated into Engliſh in Sims and Konig's Annals of Botany, v. 2. 62.

The number of ſpecies of *Salix*, in the ſecond edition of the *Sp. Plant.* of Linnæus, amounts to no more than 31, and in the 14th edition of his *Syſt. Veg.* to 33; while in the *Fl. Brit.* 45 are deſcribed, and that number is augmented to 56 in the *Engliſh Botany*. The *Flora* of Purſh contains 37 North American ſpecies, many of which, however, are common to that country and our own. Willdenow in his *Sp. Pl.* has finally reckoned up in all 116 ſpecies of *Salix*, with a hint at the end that many more remain undetermined in the cold parts of the globe. This laſt remark is authorized by ſeveral figures of this genus, in the *Flora Danica* and other works, which, as far as any thing can be judged therefrom, appear not referrible to any known ſpecies.

No very ſatisfactory principle of arrangement of the various ſpecies has, as yet, been ſuggeſted. Linnæus diſtributed them by the leaves being ſmooth or otherwiſe, ſerrated or entire; and this method is followed by Willdenow, as well as in the *Fl. Brit.*; not without a ſuggeſtion in the latter work, that more natural aſſemblages of ſpecies might probably be founded on the germen being ſeſſile or ſtalked, the comparative length of the ſtyle, and the diviſions of the ſtigma. Mr. Anderſon has introduced a new principle, derived from the leaves being either revolute, or folded flat, in the buds; and by this we ſhould gladly have profited, had our information reſpecting the whole genus been ſufficient. This not being the caſe, we muſt ſtill follow the original arrangement; and that we may not perplex, what we cannot at preſent much improve, we ſhall, for the convenience of our readers, take Willdenow as our general guide for the diſtribution of the ſpecies, as well as for the ſubdiviſions of the genus. In a very few inſtances only, it is neceſſary to ſwerve from his order, where, for want of being acquainted with ſome particular ſpecies, he has placed them at too great a diſtance from their natural allies.

Sect. 1. *Adult leaves ſmooth, ſerrated.*

1. S. *hermaphroditica*. United-flowered Willow. Linn. Sp. Pl. 1442. Fl. Lapp. ed. 2. 304. Fl. Suec. ed. 2. 345.—Leaves finely and obtuſely ſerrated, ſmooth. Stamens two, in the ſame flower with the piſtil.—Native of Sweden, in the neighbourhood of Upſal, but very rare. *Linn.* The Linnæan ſpecimen of this ſpecies, which is all we have ever ſeen, bears a great reſemblance to the well-known *pentandra* hereafter deſcribed, but Linnæus ſays the trees are really diſtinct. We perceive a clear difference in the *ſtamens*, which are certainly but two, and always accompanying the *piſtil*. Mention is made in the *Fl. Suec.* that in the year 1754, all the *ſtamens* were abortive, their rudiments being ſeſſile on each ſide of the *nectary*, as if there

had been three glands of that deſcription. The *germen* is lanceolate and ſmooth, nearly ſeſſile. *Stigmas* recurved, in two obtuſe ſegments. In both editions of the *Sp. Plant.* Linnæus remarks that this plant "agrees with *S. pentandra* in having ſmooth *leaves*, with obtuſe glandular ſerratures, convolute, yellowiſh, moſtly ſix from each bud; as well as villous *catkins;* and in being of the ſame ſize and habit. It differs, however, from that in having pale reddiſh, not purpliſh, *branches;* the veins on the upper ſurface of the *leaves* ſunk, not elevated; and prominent glands at the baſe of the *footſtalks*. It flowers earlier, and bears more abundant galls, than *S. triandra*." We do not find the colour of the *branches*, nor the appearance of the *veins*, to be truſted, for Ehrhart's ſpecimens of indubitable *pentandra*, gathered at Upſal, accord preciſely in thoſe reſpects with the *hermaphroditica*. The glands at the baſe of the *footſtalks* are likewiſe evident in both, as well as in our Engliſh ſpecimens of *pentandra*, though leſs univerſal or conſpicuous in the latter, they being, in fact, variable in all. We are therefore much diſpoſed to believe, that this famous *S. hermaphroditica*, which no botaniſt but Linnæus has obſerved, is really a variety of that dioecious Upſal one with five or more *ſtamens*, which Ehrhart has given, in his collections of dried ſpecimens, for *pentandra*, and which, after all, may be the ſame with the Linnæan one, and with our Britiſh tree that bears the ſame name, varying in the colour of its twigs; for on the moſt accurate ſcrutiny, we can find no other difference, though we can trace, in the ſpecimens of Linnæus, circumſtances which led him to indicate the diſtinctions above. The ſubject under conſideration has excited ſo much curioſity among botaniſts, that it is hoped this long diſcuſſion will not be thought ſuperfluous, as it may nearly ſettle the queſtion. See the next ſpecies.

2. S. *Hoppeana*. Androgynous Willow. Willd. n. 2.—"Leaves lanceolate, tapering at each end, ſerrated; glaucous beneath. Catkins accompanying the leaves, triandrous, polygamous. Germens ſtalked, oblong-lanceolate, ſmooth. Stigmas ſeſſile."—Found near Saltſburg in Bavaria, by Mr. Hoppe, who ſent it to Willdenow. *Leaves* dark green above. *Stipulas* half-heart-ſhaped, glaucous beneath, ſerrated at the outer margin. *Catkins* female in their upper part, male below; ſometimes perfectly dioecious. *Scales* oblong, obtuſe, hairy. *Stamens* three, rather longer than the ſcales. *Germen* on a long ſtalk. *Stigmas* two, emarginate, ſpreading. *Willd.* The above account confirms the poſſibility of ſuch a change as we have imagined in the flowers of the firſt ſpecies.

3. S. *triandra*. Long-leaved Triandrous Willow. Linn. Sp. Pl. 1442. Willd. n. 3. Fl. Brit. n. 7. Engl. Bot. t. 1435. Tr. of L. Soc. v. 6. 118. Curt. Lond. faſc. 6. t. 72. Hoffm. Sal. v. 1. 45. t. 9, 10, and 23. f. 2. (S. folio amygdalino utrinque aurito, corticem abjiciens; Raii Syn. 448.)—Leaves linear-oblong, ſerrated, ſmooth; rather unequally ſloping at the baſe. Catkins accompanying the leaves, triandrous. Germen ſtalked, ovate, compreſſed, ſmooth. Stigmas nearly ſeſſile.—Native of moiſt woods and hedges, in various parts of Europe, flowering in April or May, and frequently again in Auguſt. It grows to a large *tree*, the bark ſcaling off annually, like that of a plane-tree; but this is the caſe with ſome others. In general this ſpecies is cultivated as an Oſier, being cut down every year, its tough, pliable, and durable rods being extremely valuable. The baſket-makers diſtinguiſh ſeveral varieties, differing in the darker hue, and ſtraightneſs, of their leaves, as well as in fecundity of growth. Some of them might prove, on cloſe examination, diſtinct ſpecies, perhaps not all natives of Britain, for the cultivators are accuſtomed to import new Oſiers frequently. The *catkins* are cylindrical, with hairy buff-coloured ſcales, and yellow *ſtamens*. *Nectary* very obtuſe. *Leaves* of a fine green, rather glaucous beneath; their length from two to four inches. *Footſtalks* abrupt at the baſe, not decurrent.

4. S. *lanceolata*. Sharp-leaved Triandrous Willow. Engl. Bot. t. 1436.—Leaves lanceolate, tapering toward each end, ſerrated, ſmooth. Footſtalks decurrent. Catkins accompanying the leaves, triandrous. Germen ſtalked, oblong, conſtricted, ſmooth.—Native of Suſſex, and perhaps other parts of England. Mr. Woollgar of Lewes informs us it is cultivated there, and well known by the baſket-makers, who do not eſteem it ſo much as the laſt, the rods when peeled being apt to ſplit in working; but they are very good for brown hampers, crates, &c. When not cut as an Oſier, this ſpecies forms a ſmall *tree*, caſting its bark like *triandra*, and flowering in April or May. The *leaves* are much longer than the foregoing, more pointed and tapering, as well as the *ſtipulas;* but the moſt ſtriking diſtinction is ſeen in the *footſtalks* running down the branch in a point. There are frequently two minute notches, or auricles, at the baſe of each leaf.

5. S. *undulata*. Wavy Triandrous Willow. Willd. n. 4. Ehrh. Beitr. v. 6. 101. Arb. 108.—Leaves lanceolate, pointed, obtuſe at the baſe, ſmooth, wavy, and ſerrated. Footſtalks decurrent. Catkins accompanying the leaves, triandrous. Germen ſtalked, elliptic-oblong. Style elongated.—Found about rivers in Hanover, and other parts of Germany. *Leaves* two or three inches long, differing from the laſt in being rounded at the baſe, and from *triandra* in their decurrent *footſtalks*. The *germen* is ſhorter and more elliptical than in either. Ehrhart, like Willdenow, deſcribes that part as pubeſcent; but we can diſcern no ſuch character in his own ſpecimens, though the *ſcales* are clothed with long hairs. We know nothing of the qualities or uſes of this ſpecies.

6. S. *Villarſiana*. Dauphiny Triandrous Willow. Willd. n. 5. (S. triandra; Villars Dauph. v. 3. 762.)—"Leaves elliptical, roundiſh at the baſe, ſerrated, pointed; glaucous-white beneath. Catkins accompanying the leaves, triandrous. Germen ſtalked, ovate, ſmooth. Stigmas ſeſſile."—Native of the banks of rivers in Dauphiny, flowering in March or April. A *ſhrub*, five or ſix feet high; the bark of its *trunk* greyiſh, that of the *branches* mixed with black; the young ſhoots of a violet-black. *Leaves* an inch or inch and half long, rigid; dark green and ſhining above; ſnow-white beneath; their baſe rounded and equal; the margin ſharply ſerrated. *Stipulas* large, half-heart-ſhaped, obtuſe, toothed. *Catkins* long, yellow. *Villars. Willd.*

7. S. *amygdalina*. Almond-leaved Willow. Linn. Sp. Pl. 1443. Willd. n. 6. Fl. Brit. n. 8. Engl. Bot. t. 1936. Tr. of Linn. Soc. v. 6. 119. (S. folio auriculato ſplendente, flexilis; Raii Syn. 448. Cant. 144.)—Leaves ovate, unequal at the baſe, ſerrated, ſmooth. Catkins accompanying the leaves, triandrous. Germen ſtalked, ovate, compreſſed, ſmooth. Stigmas nearly ſeſſile. Young branches furrowed.—Native of marſhes, and the banks of rivers, in Sweden and various parts of Britain, flowering in April or May. Mr. Curtis confounds this with *triandra*, from which the ſtrongly furrowed *ſhoots*, and the broad rounded baſe of the *leaves*, not to mention the broader *ſtipulas*, which are variable, at once diſtinguiſh it. As an oſier it is more valued in Suſſex, than in Norfolk. When allowed to grow, it forms a ſmall *tree*, caſting its bark, and often producing a ſummer crop of *bloſſoms*. Scales of the *catkins* obovate, hairy.

8. S. *Humboldtiana*. Peruvian Long-leaved Willow. Willd. n. 8.—Leaves linear, pointed, finely ſerrated, ſmooth,

Catkins accompanying the leaves. Stamens about ſix. Germen ſtalked, roundiſh-ovate, ſmooth. Stigmas ſeſſile.—Obſerved by the diſtinguiſhed travellers Humboldt and Bonpland, growing wild in Peru, and cultivated in various parts of South America. Our ſpecimens were gathered by Commerſon at Rio della Plata. The *branches* are round, of a ſhining brown; ſilky when young. *Leaves* three or four inches, or more, in length, two lines in breadth, ſmooth and green on both ſides, except the rib, which in a young ſtate is hairy, like the *footſtalks*. *Stipulas* ſmall or obſolete, roundiſh. The *catkins* appear to come out with the foliage, ſtanding at the ends of the young ſhoots, and are long, cylindrical, their *ſcales* and *common ſtalks* clothed with white woolly hairs. *Stamens* uſually, as far as we can judge, about five or ſix, yellow. Female *catkins* longer than the male, the numerous, ſmooth, almoſt globoſe, *germens* giving them the appearance of long bunches of ſome kind of berries. *Stigmas* ſeſſile, ſhort and thick, notched.

9. S. *tetraſperma*. Four-ſeeded Willow. Roxb. Coromand. v. 1. 66. t. 97. Willd. n. 9. Ait. n. 6.—Leaves elliptic-lanceolate, pointed, finely ſerrated, ſmooth; glaucous beneath. Catkins following the leaves. Stamens about ſix, deflexed. Germen ſtalked, ovate, ſmooth. Style elongated.—Native of the banks of rivulets, and moiſt places, far among the mountains of Hindooſtan, flowering in the cold ſeaſon, according to Dr. Roxburgh, who obſerves that it is the only willow he has found in India. The *trunk* is erect, but ſhort, as thick as a man's body, bearing a very large branching head, with twiggy branches. *Leaves* from two to four inches long, of a broad lanceolate figure, on ſhort ſtalks. *Catkins* from ſhort lateral branches; the males about three inches in length, the females half as long. *Scales* ſpreading. *Stamens* from ſix to eight, deflexed. *Germen* on a very long ſtalk. *Style* nearly as long as the germen. *Stigmas* undivided. *Capſule* ovate, containing but four ſeeds.

10. S. *Ehrhartiana*. Hexandrous German Willow. (S. hexandra; Ehrh. Arb. 140.)—Leaves lanceolate, pointed, finely ſerrated, ſmooth, green on both ſides. Catkins accompanying the leaves. Stamens about ſix, erect.—Native of Hanover. *Ehrhart*. This appears to us a very diſtinct ſpecies, though not taken up by Willdenow. The *footſtalks* are decurrent, or rather ſupported by a projection of the branch, as in *lanceolata*, n. 4; but they are more tapering at the baſe than even in that ſpecies, and their under ſide is green, not at all glaucous. *Footſtalks* glandular at the upper part. *Stipulas* ſcarcely any in our ſpecimen. Male *catkins*, which are all we have ſeen, hardly above an inch long, on downy ſtalks, at the ends of young lateral branches; their common ſtalks alſo downy, but the ovate *ſcales* appear to be ſmooth, except perhaps at the baſe. *Stamens* long, yellow, about ſix; poſſibly more or leſs occaſionally.—The narrow ſhape of the *leaves* abundantly diſtinguiſhes this ſpecies from all other European ones that have more than two or three *ſtamens*, nor does their habit or appearance reſemble the foliage of any other known to us.

11. S. *nigra*. Dark American Willow. Willd. n. 10. Purſh n. 26. Muhlenb. in Sims and Konig's Ann. of Bot. v. 2. 65. t. 5. f. 5. (S. caroliniana; Michaux Boreali-Amer. v. 2. 226.)—Leaves ovato-lanceolate, pointed, ſerrated, green on both ſides, ſmooth, with a downy rib and footſtalk. Catkins accompanying the leaves, villous. Stamens about five, bearded at the baſe. Germen ſtalked, ovato-lanceolate, ſmooth. Stigmas divided, the length of the ſtyle.—On the banks of rivers, from Pennſylvania to Virginia, flowering in May. A *tree*, about twenty feet high, with a blackiſh *bark*. *Branches* pale yellow, ſmooth, very brittle at the baſe; downy when young. *Leaves*, in our ſpecimens from Dr. Muhlenberg, by no means of a narrow lanceolate figure, nor acute at the baſe, but rather ovate in that part; their ſerratures ſmall, blunt and ſhallow. *Footſtalks* of moderate length, thickly clothed, like the midrib of the leaf, on the upper ſide more eſpecially, with white cottony down. *Stipulas* rounded, toothed, ſmooth. *Catkins* various in ſize, on downy ſtalks; their *ſcales* very woolly. *Stamens* from three to ſix, erect, yellow. *Germen* ſlender, quite ſmooth, as well as its ſtalk. *Style* ſhort. *Stigmas* divided, not, as Muhlenberg ſays, the *ſtyle*, either in this or any of his ſpecies; this excellent obſerver having accidentally uſed one term for the other throughout.

12. S. *pentandra*. Sweet, or Bay-leaved, Willow. Linn. Sp. Pl. 1442. Willd. n. 11. Fl. Brit. n. 10. Engl. Bot. t. 1805. Tr. of Linn. Soc. v. 6. 120. Ehrh. Arb. 48. Pl. Off. 309. Dickſ. H. Sicc. faſc. 3. 15. (S. folio laureo, ſeu lato glabro odorato; Raii Syn. 449.)—Leaves elliptic-lanceolate or ovate, pointed, crenate, glandular, ſmooth. Footſtalks glandular at the top. Catkins following the leaves. Stamens five or more, hairy. Germen ovate, ſmooth, nearly ſeſſile.—Native of ſtony banks of rivers, and mountainous bogs, in various parts of Europe; frequent in the north of England and ſouth of Scotland, flowering in June and July, when the leaves are fully formed. It is often cultivated for ornament, being a rather ſmall *tree*, beautiful in its broad ſhining foliage, and grateful for its balſamic ſcent. The yellow male *catkins* alſo are fragrant, and very handſome, with their long tufted yellow *ſtamens*, from five to nine in each flower. *Stipulas* ſmall or none. *Footſtalks* with many glands about their upper part. There is alſo a gland at each notch of the *leaves*, exuding a yellow balſam, which marks the whole outline of each leaf, when placed between papers, and ſmells like the ſweet bay-tree. The ſcales of the *catkins* are hairy, like the *ſtamens*; but the germen is quite ſmooth. *Stigmas* deeply divided, the length of the *ſtyle*. The reader will find remarks relative to Ehrhart's ſynonym, under the firſt ſpecies.

13. S. *tinctoria*. Dyers' Willow. (S. pentandra β; Linn. Fl. Suec. 346; excluſive probably of the reference to Van Royen.)—Leaves elliptic-lanceolate, pointed, crenate, glandular, ſmooth. Footſtalks naked. Catkins following the leaves. Stamens five? Germen ſtalked, ovato-lanceolate, ſmooth.—Native of Sweden. Our learned friend Dr. Adam Afzelius firſt pointed out this to us, as a diſtinct ſpecies from the laſt, though not noticed, even as a variety, except in *Fl. Suec.* We have only ſeen the female plant, in the Linnæan herbarium. The *leaves* are not half the ſize of the foregoing, and much leſs ovate. They are uſed in Scania for dyeing yellow; where alſo the young twigs ſerve to bind thatch. The *footſtalks* have no glands. The long ſtalks of the more ſlender and elongated *germens* alſo afford a clear ſpecific diſtinction. We preſume the number of *ſtamens* to be as Linnæus defined them in the original ſpecies.

14. S. *nigricans*. Dark Broad-leaved Willow. Sm. Tr. of Linn. Soc. v. 6. 120. Fl. Brit. n. 11. Engl. Bot. t. 1213. Willd. n. 12. (S. phylicifolia β; Linn. Sp. Pl. 1442. Fl. Lapp. ed. 2. 291. t. 8. f. *c*.)—Leaves elliptic-lanceolate, acute, crenate, ſmooth; glaucous beneath. Catkins before the leaves. Germen ſtalked, lanceolate, downy.—Native of fens, thickets, and oſier-grounds in England, as well as Lapland, flowering with us in April, before the leaves come out. This is rather a large *ſhrub* than a tree, having many irregular, brittle, dark-coloured *branches*, of no economical uſe; the young ones downy. *Leaves* three inches long and one broad, crenate throughout; dark green and ſmooth above, turning black in drying; veiny, ſometimes

times a little downy when young, at the back. *Stipulas* large, obliquely heart-ſhaped, ſerrated, ſmooth, veiny. *Catkins* hardly above an inch long, thick. *Scales* obovate, narrow, hairy, brown in their upper part. *Stamens* two, ſwelling upwards, with ſmall yellow *anthers*, each of two diſtinct lobes. *Capſules*, ſeen by us on the Linnæan ſpecimen only, lanceolate, brown, downy, each on a ſhort partial ſtalk.

15. S. *phylicifolia*. Tea-leaved Willow. Linn. Sp. Pl. 1442 α. Fl. Lapp. ed. 2. 291. t. 8. f. *d*. Willd. n. 11. Fl. Brit. n. 14. Engl. Bot. t. 1958. Tr. of Linn. Soc. v. 6. 123. (S. radicans; Fl. Brit. n. 20. Willd. n. 43.)—Leaves elliptic-lanceolate, with wavy ſerratures, ſmooth; glaucous beneath. Stipulas ſomewhat lunate, glandular on the inſide. Germen ſtalked, ſilky. Style longer than the ſtigmas.—Native of Lapland, as well as of Scotland. The Rev. Dr. Stuart firſt gathered it in Breadalbane. This is a low trailing *tree*, or rather *buſh*, whoſe long branches take root as they extend on all ſides. The young *twigs* are ſmooth; purpliſh or brown. *Leaves* not much ſpreading, on ſhort *ſtalks*, two or three inches long, ſmooth, harſh, bitter, variouſly crenate or ſerrated, the ſerratures remarkably undulated, and their interſtices reflexed; upper ſide dark and ſhining. *Stipulas* ſmall. *Catkins* appearing with the leaves, but from ſeparate buds, ſtalked, cylindrical, lax. *Scales* linear, ſilky at the back. *Germen* on a longiſh ſtalk, ovato-lanceolate, ſilky. *Style* ſmooth. *Stigmas* ſmall, emarginate. We ſee no reaſon to think the *S. appendiculata* of Villars, cited by Willdenow, belongs to this. Villars indeed refers with doubt to the Linnæan *philicifolia*, but deſcribes his own plant as having grey powdery *branches*, and downy *leaves;* characters quite foreign to the ſpecies under conſideration; except that very ſlight cloſe-preſſed pubeſcence, common to the under ſide of the leaves in almoſt every willow when young, and which proves an obſtacle ſometimes to their clear ſpecific definition.

16. S. *Wulfeniana*. Wulfenian Willow. Willd. n. 14. (S. phylicæfolia; Wulfen in Jacq. Coll. v. 2. 139. Hoſt. Syn. 526; excluding the references to Linnæus.)—Leaves obovate, bluntiſh, ſerrated, ſmooth; glaucous beneath. Catkins denſe, with fringed ſcales. Germen ſtalked, awl-ſhaped, nearly ſmooth. Style longer than the ſtigmas.—Found by Wulfen, in valleys among the mountains of Carinthia, flowering early in May; ſometimes in July. We have been favoured with authentic ſpecimens from profeſſor von Jacquin, jun. which prove very diſtinct from the real *phylicifolia*. The *ſhrub* is at firſt diffuſe, but in time riſes to the height of a man. *Leaves* hardly above an inch long, generally of a broad, roundiſh, and obtuſe form; ſometimes elliptic-oblong, and more acute; their ſerratures ſhallow and blunt. *Footſtalks* of a moderate proportion, ſmooth and naked. *Stipulas* none in an early ſtate, but Wulfen ſays they appear afterwards, of an ovate, acute, or roundiſh ſhape. *Catkins* accompanying the leaves, cylindrical, thick, obtuſe, about an inch long, on ſhort downy ſtalks. *Scales* ſhortiſh, obovate, ſmooth at the back. *Stamens* two, hairy below. *Germen* on a ſhort ſtalk, ſlightly downy in an early ſtate.

17. S. *ſileſiaca*. Sileſian Willow. Willd. n. 15.—“Leaves elliptical, acute at each end, ſmooth, ſerrated, green on both ſides; midrib, footſtalks, as well as young foliage, downy. Catkins before the leaves. Germen ovato-lanceolate, long-ſtalked, ſmooth.”—Native of the hills of Sileſia. *Branches* dark brown. *Leaves* two inches, or more, in length, entire at the baſe; their rib moſt downy beneath; the young ones white at the back. *Stipulas* large, half-heart-ſhaped, ſerrated. Female *catkins* two inches long. *Scales* obtuſe, fringed. *Germen* on a very long, moſtly hairy, ſtalk. *Style* elongated. *Stigmas* divided. *Willdenow*.

18. S. *Pontederana*. Pontederian Willow. Willd. n. 16. (S. Pontederæ; Villars Dauph. v. 3. 766. t. 50. f. 8. Bellardi Append. ad Fl. Pedem. 45. S. pumila alpina nigricans, folio oleagino ſerrato; Ponted. Compend. 148.)—“Leaves elliptical, acute, ſerrated, ſmooth; obtuſe at the baſe; glaucous beneath; midrib, footſtalks, as well as young foliage, hairy. Germen oblong, downy.”—Gathered by Villars, in the moſt elevated woods of the Grande Chartreuſe, as well as in other parts of Dauphiny; by Dr. Bellardi near the lake on mount Cenis; and by Pontedera, if his ſynonym be rightly applied, (of which we feel no very confident aſſurance, Villars being ſeldom happy in that department,) in a moſt romantic part of the north ſide of mount Baldus, on the confines of perpetual ſnow. We have ſeen no ſpecimen. Villars compares the plant to his *daphnoides*, our *cinerea*, far remote from the tribe we are deſcribing. He ſays it is two or three feet high, and reſembles a little laurel. *Leaves* broad, hard and firm, a little downy beneath, not at all viſcid; their teeth rectangular and diſtant. Female *catkins* from one to two inches long. Willdenow, who had a dried ſpecimen, deſcribes the young *leaves* downy and white. *Stipulas* ſmall, lanceolate, ſomewhat ſerrated. *Catkins* coming before the leaves, with lanceolate hairy *ſcales*. *Germen* nearly ſeſſile. *Style* ſhort, divided. *Stigmas* cloven.

19. S. *bicolor*. Shining Dark-green Willow. Ehrh. Arb. 118. Willd. n. 76. Fl. Brit. n. 12. Engl. Bot. t. 1806. (S. laurina; Sm. Tr. of Linn. Soc. v. 6. 122. Willd. n. 17. Ait. n. 10.)—Leaves elliptical, acute, waved, and ſlightly ſerrated, nearly ſmooth; glaucous beneath. Footſtalks dilated at the baſe. Catkins before the leaves. Germen ſtalked, lanceolate, ſilky.—Not unfrequent in woods in Norfolk. Ehrhart gathered his plant in Frieſland. The *ſtems*, when young, are erect, and wandlike, of a dark mahogany colour, ſcarcely downy, of but little pliability or tenacity, each in a few years becoming a ſmall tree. *Leaves* nearly upright, eſpecially on young plants, three or four inches long, ſlightly ſilky beneath when young only; their upper ſurface of a dark ſhining green. *Footſtalks* thick, remarkably broad, or triangular, at the baſe. *Stipulas* ſmall, half-heart-ſhaped, ſerrated. *Catkins* an inch long, the female ones ſoon becoming twice that length. *Scales* obovate, clothed with long white ſilky hairs. *Stamens* yellow. Stalk of the *germen* full half the length of the ſcale. *Style* ſmooth, about equal to the *ſtigmas*, which are notched, but not divided.—The moſt careful compariſon has ſatisfied us of the identity of Ehrhart's plant and our's, notwithſtanding the different opinion of Willdenow, who had not then ſeen the latter; neither had the editors of the *Hort. Kew.* who copy Willdenow, ſeen that of Ehrhart. Poſſibly this ſpecies might be better placed among the Sallow tribe, where Willdenow has introduced it, as *bicolor;* and yet the pubeſcence of its *leaves* is more ſlight than in ſeveral of the preſent ſection.

20. S. *tenuifolia*. Thin-leaved Willow. Sm. in Linn. Fl. Lapp. ed. 2. 292. t. 8. f. *e*. Fl. Brit. n. 18. Engl. Bot. t. 2186. Willd. n. 18.—Leaves elliptical, acute, ſerrated, ſmoothiſh; glaucous beneath. Stipulas ſmall or none. Catkins hairy. Capſules ſeſſile, very ſmooth. Native of Lapland and Scotland; as well as of the rocky banks of the river, above the bridge, at Kirkby Lonſdale, Weſtmoreland, flowering in May and June. *Stem* buſhy, riſing in a garden to a ſmall tree. Young *branches* very ſlightly downy. *Leaves* rather pointed, from one and a half to three

inches long, and one broad, with ſhallow ſerratures; beſprinkled when young with fine cloſe-preſſed hairs; bright green above; glaucous and whitiſh beneath, reticulated with veins; their ſubſtance thin and pliant, at leaſt at the flowering ſeaſon; the rib ſometimes hairy. *Stipulas* ſmall, ſomewhat falcate, ſerrated, ſmooth; often wanting; largeſt in the cultivated plant. Male *catkins* yellowiſh, about an inch long, with very hairy, elliptic-oblong ſcales. *Stamens* two, ſmooth. Female *catkins* finally one and a half inch long. *Capſules* ſeſſile, ovato-lanceolate, ſmooth. *Style* longer than the *ſtigmas*, which are notched, and rather thick. A more downy variety, as we preſume it, is found with the above at Kirkby Lonſdale.

21. S. *Amaniana*. Amanian Willow. Willd. n. 19. (S. myrſinites; Hoffm. Sal. v. 1. 71. t. 17, 18, 19, and 24. f. 2.)—"Leaves oblong-elliptical, acute, ſerrated, ſmooth; glaucous beneath. Footſtalks elongated, downy. Stipulas ovate, toothed, permanent. Catkins before the leaves. Germen lanceolate, ſmooth."—Native of the Saltſburg and Carinthian alps.—A *tree* with brown *branches*, downy when young. *Leaves* an inch, or inch and half, long, dark green and ſhining above; ſmooth and glaucous beneath; the young ones with downy veins. *Catkins* about an inch long, with elliptical, obtuſe, hairy ſcales. *Capſules* ovato-lanceolate, on ſhort ſtalks. *Style* about the length of the notched *ſtigmas*. We have ſeen no ſpecimens, but on the authority of Willdenow, we refer to this ſpecies the *myrſinites* of Hoffmann; though his figures do not in every point anſwer, and we have always thought they repreſented our *prunifolia*.

22. S. *haſtata*. Halberd-leaved Willow. Linn. Sp. Pl. 1443. Fl. Lapp. ed. 2. 293. t. 8. f. 9. Willd. n. 20. Ait. n. 12.—Leaves ovate, acute, ſerrated, undulated, crackling, ſmooth; heart-ſhaped at the baſe; glaucous beneath. Stipulas unequally heart-ſhaped, longer than the broad footſtalks. Catkins very woolly. Germen lanceolate, ſmooth, on a ſhort ſtalk.—Native of the woods and mountains of Lapland. Meſſrs. Lee and Kennedy are ſaid to have firſt brought it into this country, about the year 1780. It flowers in April or May, and riſes to a ſmall, ſpreading, not lofty, *tree*. *Branches* blackiſh, hairy when very young only. *Leaves* three inches long, and about half as wide, of a rigid, harſh, but not coriaceous, texture, greyiſh-green, ſharply ſerrated, wavy, copiouſly veined; on ſhort, thick *ſtalks*, broad at the baſe. *Stipulas* often an inch long, of the texture and hue of the leaves, and equally permanent. *Catkins* thick, their ſcales clothed with very long woolly hairs, which envelope, and partly conceal, the *germen* and *ſtyle*. The latter is twice or thrice the length of the *ſtigmas*, which are obtuſe, ſcarcely notched. We have ſeen no male *flowers*.

23. S. *malifolia*. Apple-leaved Willow. Fl. Brit. n. 19. Engl. Bot. t. 1617. Willd. n. 44.—Leaves elliptic-oblong, toothed, waved, thin and crackling, very ſmooth. Stipulas heart-ſhaped, about the length of the footſtalk. Catkins very woolly. Germen lanceolate, ſmooth, on a ſhort ſtalk.—Native of England. Found by Mr. Crowe in ſome part of Norfolk or Suffolk. It flowers in April, and is nearly akin to the laſt ſpecies, though of ſmaller ſize, being a ſpreading *ſhrub*, but three or four feet high. The *leaves* differ materially from the *haſtata*, in their narrower more oblong form; their toothed, rather than ſerrated, margin; and much ſmaller *ſtipulas*. The foliage, at a ſmall diſtance, would certainly be taken rather for that of an apple-tree, than a willow. The female *catkins*, all we have ſeen, reſemble the laſt in every reſpect, except being ſomewhat ſmaller.—Sometimes the *leaves* vary, on the ſame tree, in being elongated and contracted, inſtead of rounded, at the baſe. The *twigs* are crooked, brittle, of no uſe.

24. S. *ſerrulata*. Serrated Lapland Willow. Willd. n. 21. ("S. haſtata; Fl. Dan. t. 1238.")—"Leaves ovate, acute, ſerrated, ſmooth; glaucous beneath. Footſtalks very ſhort, ſmooth. Stipulas ovate, ſerrated, permanent. Catkins accompanying the leaves. Germen lanceolate, nearly ſeſſile."—Gathered by Mr. Wahlenberg in Lapland.—Willdenow deſcribes this as very much akin to *haſtata*, but the whole habit different, and the *leaves* much ſmaller, hardly an inch long, not roundiſh-ovate, nor at all heart-ſhaped, but ovate, or ovato-lanceolate; bright green above. *Stipulas* twice the length of the very ſhort dilated *footſtalks*. Male *catkins* an inch long, tapering at each end. *Filaments* white. *Anthers* purple. *Scales* roundiſh, brown, hairy at the edge. Female *catkins* two inches in length. *Scales* lanceolate, obtuſe, fringed. *Germen* ſmooth. *Style* ſhort, divided. *Stigmas* cloven. We have a plant from Switzerland, under the name of *S. Arbuſcula*, to which it bears no reſemblance, that accords in moſt reſpects with the above characters; but the *ſtamens* are altogether yellow, and the *ſtyle*, greatly elongated, even thrice the length of the *ſtigmas*.

25. S. *diſcolor*. American Baſket Willow. Muhlenb. in Sims and Konig's Ann. of Bot. v. 2. 62. t. 5. f. 1. Willd. n. 22. Purſh n. 20.—Leaves ovato-lanceolate, ſmooth, bluntly ſerrated; glaucous beneath. Catkins before the leaves. Scales ſhort, rounded, hairy. Germen awl-ſhaped, ſilky, on a ſtalk thrice the length of the ſcale.—In low grounds, and on the banks of rivers, common from New England to Carolina, flowering in April; the moſt common in uſe for baſket-making. *Purſh*. The definition of this author, particularly what regards "the bluntiſh *leaves*, oblong *ſcales*, and nearly ſeſſile *germen*," does not accord either with Dr. Muhlenberg's account, or with ſpecimens ſent by the latter. By theſe therefore we are guided in ſaying the *ſtem* is rather ſhrubby than arboreous, with tough brown twigs, downy when young. *Leaves* acute at each end, rather more than two inches long; entire at the baſe; unequally and often diſtantly, as well as bluntly, ſerrated; dark green above; very glaucous and blueiſh beneath; their midrib reddiſh. *Catkins* downy, about an inch long. *Stamens* two, with red *anthers*, finally yellow. *Style* the length of the *ſtigmas*, which are ſometimes deeply divided. Muhlenberg by miſtake, as in other places, ſays "*ſtylus ſubquadrifidus*."

26. S. *prinoides*. Winter-berry-leaved Willow. Purſh n. 19.—"Leaves oval-oblong, acute, with diſtant wavy ſerratures, ſmooth; glaucous beneath. Stipulas half-heart-ſhaped, deeply toothed. Catkins villous, before the leaves. Germen ſtalked, ovate, pointed, ſilky. Style elongated. Stigmas cloven."—On the banks of rivers, from Pennſylvania to Virginia, flowering in March and April. Middle-ſized. Reſembles *S. diſcolor*. *Purſh*. Poſſibly Dr. Muhlenberg may have confounded this among the ſpecimens above-mentioned, as he appears not to have diſtinguiſhed it from the laſt ſpecies.—Thoſe who can compare the two in their native country, muſt correct our account of the former, if wrong.

27. S. *anguſtata*. Taper-leaved American Willow. Purſh n. 21.—"Leaves lanceolate, acute, very long, gradually tapering at the baſe, finely ſerrated, quite ſmooth; ſcarcely paler beneath. Stipulas half-heart-ſhaped. Catkins before the leaves, erect, ſmoothiſh. Germen ſtalked, ovate, ſmooth. Style divided. Stigmas two-lobed."—In ſhady woods, on the banks of rivers, in New York and Pennſylvania; flowering in March or April. It reſembles *S. prinoides*. *Purſh*.

28. S. *petiolaris*. Dark long-leaved Willow. Sm. Tr. of Linn. Soc. v. 6. 122. Fl. Brit. n. 13. Engl. Bot. t. 1147. Willd. n. 23. Purſh n. 31. Ait. n. 13.—Leaves lanceolate, ſerrated, ſmooth; glaucous beneath; ſomewhat unequal at the baſe. Stipulas lunate, toothed. Catkins lax. Germen ſtalked, ovate, ſilky. Stigmas ſeſſile, divided.—Common in ſwamps, and on the borders of rivers, in North America, flowering in April. *Purſh.* The late Mr. Crowe thought it had been communicated to him by Mr. Dickſon, as a Britiſh ſpecies; hence it found a place in the *Fl. Brit.* and *Engl. Bot.* from whence Mr. Purſh thinks it ought to be excluded. This willow is a ſmall ſpreading *tree*, with ſlender, flexible, ſmooth, purple or dark-brown *branches*. *Leaves* four or five inches long, and when full-grown almoſt an inch broad, ſerrated throughout, on long ſlender *ſtalks*. They turn black in drying, and have a ſtrong ſmell when bruiſed. The very young *leaves* have an elegant ruſty hue, and are often a little hairy underneath. *Stipulas* ſmall. Female *catkins*, the only ones we have ſeen, ſcarcely an inch long, ſtalked. *Scales* ſmall, obtuſe, often notched, black and hairy.

29. S. *myricoides*. Candleberry-myrtle Willow. Muhlenb. in Sims and Kon. Ann. of Bot. v. 2. 63. t. 5. f. 2. Willd. n. 24. Purſh n. 18. Ait. n. 14.—Leaves ovato-lanceolate, bluntly ſerrated, ſmooth, acute; glaucous beneath; glandular at the baſe. Stipulas ovate, with glandular ſerratures. Catkins woolly. Germen lanceolate, ſmooth; its ſtalk longer than the ſcale. Style the length of the divided ſtigmas.—In wet meadows and woods, from New England to Virginia, flowering in April. *Purſh.* A *ſhrub*, from ſix to nine feet high. *Branches* ſmooth, green, purpliſh when young. *Leaves* about four inches long, and one broad. *Footſtalks* much thicker and ſhorter than in the preceding. *Stipulas* rather lunate. *Catkins* about one and a half inch long; their ſtalk remarkably woolly, as well as the ſmall *ſcales*.

30. S. *cordata*. Heart-leaved American Willow. Muhlenb. in Sims and Kon. Ann. of Bot. v. 2. 64. t. 5. f. 3. Willd. n. 25. Purſh n. 29.—Leaves ovato-lanceolate, ſerrated, ſmooth; paler beneath; heart-ſhaped at the baſe. Stipulas rounded, finely toothed. Catkins accompanying the leaves, moſtly triandrous. Scales lanceolate, woolly. Germen ſtalked, lanceolate, ſmooth. Style the length of the divided ſtigmas.—In low and ſwampy grounds, on the banks of rivers, from New York to Virginia, flowering in April or May. A very elegant ſpecies, ſix or eight feet high. *Purſh.* *Branches* green, ſmooth, brittle at the bottom. *Leaves* about three inches long, of a light green, which they retain when dried; furniſhed at the baſe with a, ſometimes deep, notch, where the ſhort *footſtalk* is inſerted. *Stipulas* often longer than the footſtalk. *Catkins* about an inch long.

31. S. *rigida*. Stiff-leaved American Willow. Muhlenb. in Sims and Kon. Ann. of Bot. v. 2. 64. t. 5. f. 4. Willd. n. 26. Purſh n. 28. (S. cordata; Michaux Boreali-Amer. v. 2. 225.) — Leaves elliptic-lanceolate, rigid, ſmooth, ſharply ſerrated; the two loweſt ſerratures elongated. Footſtalks hairy. Stipulas dilated, rounded, with glandular ſerratures. Catkins accompanying the leaves, moſtly triandrous. Scales woolly. Germen lanceolate, ſmooth, on a long ſtalk. Style the length of the divided ſtigmas. In ſwamps and hedges, from New England to Virginia, flowering in April or May. *Branches* green, red towards the end; younger ones pubeſcent. It is very tough, and much uſed by the baſket-makers. *Purſh.*

32. S. *lucida*. Shining American Willow. Muhlenb. in Sims and Kon. Ann. of Bot. v. 2. 66. t. 5. f. 7. Willd. n. 27. Purſh n. 27.—Leaves ovate, taper-pointed, ſmooth, ſhining, with glandular ſerratures, moſt crowded at the baſe. Stipulas toothed. Catkins accompanying the leaves, moſtly triandrous. Scales hairy at the baſe; obtuſe, ſerrated and ſmooth at the end. Germen ſtalked, lanceolate-awlſhaped, ſmooth. Style divided. Stigmas obtuſe. In low grounds, about ſprings, from New York to Virginia, flowering the middle of May. A very ſmooth and handſome ſpecies, with yellowiſh-brown *branches*. Sometimes it grows to a tree, but is more generally a ſhrub. It approaches *S. amygdalina*, n. 7. *Purſh.* *Leaves* on young ſhoots, are as broad as thoſe of *pentandra*, n. 12, with ſingularly long ſlender points, and numerous crowded ſtalked glands at the inſertion of the footſtalks. Before expanſion the *leaves* are covered with coarſe, ſilky, tawny hair. *Catkins* villous, ſhort, ſomewhat ovate, with white obtuſe *ſcales* ſerrated at the end, hairy at the baſe.

33. S. *violacea*. Violet-coloured Willow. Andr. Repoſ. t. 581. (S. acutifolia; Willd. n. 28.)—Leaves linear-lanceolate, acute, ſmooth, with blunt unequal ſerratures; tapering at the baſe; glaucous beneath. Branches covered with a violet deciduous powder. Catkins before the leaves, elliptical, very hairy.—Native of the neighbourhood of the Caſpian ſea. Introduced from Ruſſia, by Mr. John Bell, about the year 1798, but omitted in Hort. Kew. It flowers in April, and is very peculiar and beautiful in its appearance, from the violet twigs, covered with bloom like a plum. Theſe are of quick growth, and ſaid to be valuable for their toughneſs. The *leaves* are four or five inches long, on young ſhoots, with large half-ovate, pointed, ſerrated *ſtipulas*. Male *catkins* ſeſſile, leafleſs, about an inch long; their *ſcales* clothed with long ſilky hairs. *Stamens* two, with yellow *anthers*. Willdenow's name is ſo inexpreſſive, that we could not but prefer one with an appropriate meaning.

34. S. *japonica*. Japan Willow. Thunb. Jap. 24. Willd. n. 29. (Rju, vulgo Aujaki; Kæmpf. Am. Exot. 908.) — "Leaves ſerrated, ſmooth, lanceolate; glaucous beneath; young ones villous. Twigs pendulous."—Native of Japan, about Nagaſaki, and other places, flowering in March. A middle-ſized *tree*. *Branches* round, zigzag, erect, grey, ſmooth, with numerous alternate ſubdiviſions. *Leaves* alternate, ſtalked, pointed, a finger's length, ſpreading; green on the upper ſide. *Footſtalks* a line in length. *Flowers* from the ſame bud with the leaves. *Thunb.* The above definition of the *leaves* is not ſufficient to diſtinguiſh this Willow from 15 or 20 others. We have therefore, in ſo meagre a ſtock of information, gladly borrowed, from Kæmpfer, the character of the pendulous *twigs*.

35. S. *vitellina*. Yellow Willow, or Golden Oſier. Linn. Sp. Pl. 1442. Willd. n. 30. Purſh n. 33. Fl. Brit. n. 16. Engl. Bot. t. 1389. Hoffm. Sal. v. 1. 57. t. 11, 12, and 24. f. 1. Ehrh. Arb. 78.—Leaves lanceolate, acute, with cartilaginous ſerratures; ſmooth above; glaucous and ſomewhat ſilky beneath. Stipulas ſmall and deciduous; ſmooth on their inſide. Germen ſeſſile, ovato-lanceolate, ſmooth. Stigmas nearly ſeſſile, two-lobed.—Native of Germany, Switzerland, France, and England. So generally cultivated with us, for ornament in low ſituations, that one can hardly ſay when it is truly wild; but Mr. Crowe found it undoubtedly ſo, in rough low paſtures, at Ovington, near Watton, Norfolk. Mr. Purſh ſays it is common by road ſides, and about plantations, in North America, though introduced from Europe. This is a handſome *tree*, of a moderate height, flowering in April or May, when the foliage appears. The pendent golden *twigs* readily diſtinguiſh the plant. The *leaves* are narrow, tapering, equally

ſerrated; ſilky when young. *Stipulas* rarely ſeen. *Catkins* yellow, tapering, with wrinkled hairy *ſcales*. *Stamens* two, rarely three. *Nectary* of two or three notched ſcales. Perhaps this ought to be ranged near the *alba*, at the end of the genus, as being doubtleſs akin to that, though not, as Haller thought, the ſame ſpecies. Its leaves however are ſmooth, except, as is the caſe with almoſt all the genus, a portion of ſilky or woolly hairs before they fully expand.

36. S. *ambigua*. Ambiguous Willow. Purſh n. 34.—"Leaves lanceolate, pointed, ſmooth, green on both ſides, with glandular ſerratures. Catkins accompanying the leaves. Nectary double, rather large; its lobes lanceolate, ſmooth, toothed at the ſummit. The terminal flowers triandrous."—In low grounds of New York and New Jerſey, flowering in April. Reſembles the preceding in leaves and habit, and in fructification the following. *Purſh*.

37. S. *decipiens*. White Welſh, or Varniſhed, Willow. Hoffm. Sal. v. 2. 9. t. 31. Fl. Germ. v. 1. 343. Engl. Bot. t. 1937. Purſh n. 35. Winch Bot. Guide v. 1. 90. Ait. n. 4. (S. fragilis; Ehrh. Arb. 88. Pl. Off. 319.)—Leaves lanceolate, pointed, ſerrated, very ſmooth. Footſtalks ſomewhat glandular. Germen tapering, ſtalked. Nectary of the male double. Floral leaves dilated and bluntiſh. Branches ſmooth, highly poliſhed.—Native of Sweden, Germany, and England, flowering in May. Mr. T. F. Forſter obſerved it wild near Tunbridge; Mr. Woolgar in many moiſt hedges round Lewes; and Mr. Winch in Northumberland and Durham. Mr. Purſh noticed it by road ſides, and about plantations, in North America, having been introduced from Europe. Ehrhart and Willdenow, like ſome other botaniſts, confounded this very diſtinct ſpecies with *S. fragilis*; becauſe perhaps of the brittleneſs of its *branches*, at the baſe; eſpecially in ſpring. The *decipiens* is a handſome *tree*, readily known by the very ſmooth, clay-coloured *bark* of its laſt-year's ſhoots, ſhining as if highly varniſhed. Young *twigs* often ſtained beautifully with crimſon. *Leaves* very much like *S. Ruſſelliana*, hereafter deſcribed, but moſtly ſmaller; and thoſe of the ſhort flowering branches differ widely from that ſpecies, being obtuſe, almoſt obovate, all except the upper one recurved. *Catkins* accompanying the leaves, cylindrical; their *ſcales* elliptic-oblong, denſely clothed with ſhort hairs. *Stamens* two, very rarely three. This ſpecies is cultivated in ſeveral oſier-grounds of Norfolk, Cambridgeſhire, and Suſſex, producing good rods for baſket-work, but the plants require to be frequently renewed, old roots, according to Mr. Woolgar's remarks about Lewes, producing but ſhort ſhoots.

38. S. *fragilis*. Crack Willow. Linn. Sp. Pl. 1443. Willd. n. 31. Fl. Brit. n. 17, excluding the reference to Hoffmann. Engl. Bot. t. 1807. (S. folio longo latoque ſplendente, fragilis; Raii Syn. 448.)—Leaves ovato-lanceolate, pointed, ſerrated throughout, very ſmooth. Footſtalks glandular. Germen ovate, nearly ſeſſile. Male flowers with an abortive germen.—Native of Sweden, Germany, and England. With us it is not unfrequent, in low marſhy grounds, about the banks of rivers, flowering in May. This is a large buſhy *tree*, known by the crooked poſition of its *branches*. Theſe when of a year's growth are extremely brittle at their baſe, in the ſpring, ſtarting from the trunk on the ſlighteſt blow, whence the name originated; but the ſame thing is obſervable in *S. decipiens*, and ſeveral ſmooth-leaved ſpecies beſides. *Leaves* four or five inches long, and one and a half broad, of a dark ſhining green, ſomewhat paler beneath, rounded, or ovate, towards the baſe when fully grown; their ſerratures numerous, uniform and regular, a little incurved, glandular, but ſcarcely viſcid. *Stipulas* half-heart-ſhaped, toothed. Male *catkins* yellow, two inches and a half long, with elliptic-oblong *ſcales*, clothed with ſhort hairs. *Stamens* two or three, ſometimes five, ſmooth, with a rounded glandular *nectary*, and the incurved rudiment of a germen. Female *catkins* rather longer, greener, with longer *ſcales*. *Nectary* ſimple. *Germen* ſmooth, ovato-lanceolate. *Style* very ſhort. *Stigmas* cloven to the baſe, narrow. The bark of this ſpecies, as well as of *triandra*, *alba*, and *pentandra*, has been uſed as a cheap ſubſtitute for *Cinchona*, in the treatment of intermittent fevers; ſome ſay with conſiderable ſucceſs. The following is probably better than any of them, and its having been generally confounded with *fragilis*, may perhaps account for a contrariety of reports and opinions reſpecting the latter.

39. S. *Ruſſelliana*. Bedford Willow. Fl. Brit. n. 9. Engl. Bot. t. 1808. Willd. n. 7. Ait. n. 5.—Leaves lanceolate, tapering at each end, ſerrated throughout, very ſmooth. Footſtalks glandular. Germen tapering, ſtalked, longer than the ſcales.—Native of wet meadows, and oſier-holts, throughout the midland and ſouthern counties of England, flowering in April or May. It was firſt made known for its valuable economical properties, by the name of the Leiceſterſhire or Diſhley Willow. The late duke of Bedford brought it much into notice, for its tall handſome rapid growth; and the bark was found by the late Mr. Biggin, an able practical chemiſt, to come next to that of the oak, in tanning qualities. The wood alſo is more uſeful than that of any other willow. When theſe valuable properties were firſt promulgated, and cuttings of the plant diſtributed to all who enquired for them, many perſons ſlighted the information, becauſe they had known the plant previouſly as *fragilis*, though they had never diſcovered its merits. It became therefore neceſſary to aſcertain the differences between the two. The preſent duke of Bedford, who found his diſtinguiſhed brother's diſcoveries, and his own liberality, baffled by the above doubts, was ſolicitous to have them removed. The Rev. Dr. Abbot was one of the firſt botaniſts who ſucceeded in this attempt, and we truſt there can never be any more difficulties on the ſubject. The whole hue of *S. Ruſſelliana* is lighter than that of *fragilis*, eſpecially the *leaves*, which are alſo more firm, narrower, tapering at the baſe; their ſerratures more coarſe and irregular, and the midrib conſiderably ſtouter. The glands on the *footſtalks* ſometimes become leaflets. The *germen* is longer, more tapering, with a longer ſtalk and *ſtyle*. We have not ſeen the male *catkins*. Both ſpecies have ſomething of a glaucous hue on the backs of their *leaves*, but the preſent rather the moſt. Our *S. Ehrhartiana*, n. 10, bears a conſiderable affinity to the ſpecies before us; but its *leaves* are much ſmaller, more elliptic-lanceolate, with finer cloſer ſerratures. The fine downineſs of the ſtalk of its *catkins* is ſimilar, but their *ſcales* are ſhorter and rounder. We ſhould be glad to compare the living plants. Analogy would lead us to ſuppoſe our *Ruſſelliana* has ſcarcely more than two or three *ſtamens*. It muſt be obſerved that this valuable ſpecies may be known, even in winter, from the *fragilis*, by its much more handſome and ſtraight mode of growth; inſtead of the *branches* decuſſating each other, or being ſet on obliquely, in the very unſightly manner of that tree.

40. S. *præcox*. Early Double-budded Willow. Willd. n. 32. (S. bigemmis; Hoffm. Germ. ann. 1791. 343. Roth. Germ. v. 2. 506.)—"Leaves broadly lanceolate, pointed, ſmooth, with glandular ſerratures; glaucous beneath. Footſtalks ſlightly hairy, without glands. Catkins before the leaves. Germen ſeſſile, ovate, ſmooth. Style elongated."—Native of various parts of Germany, Switzerland,

zerland, Italy, and the ſouth of France, about the banks of rivers. *Willdenow.* A *tree,* with brown *branches,* very brittle (we preſume at the baſe) ; ſomewhat hairy when young. *Leaves* an inch and a half or two inches long ; of a ſhining green above ; the young ones whitiſh and downy. *Stipulas* ſmall, lanceolate, ſerrated. *Buds* thick, ſometimes two, as it were, together. *Catkins* reſembling thoſe of *S. caprea ;* the male an inch, the female an inch and a half, in length. *Scales* lanceolate, villous. *Style* thread-ſhaped. *Stigmas* four, thick. *Catkin* when in fruit four inches long, beſet with naked *capſules,* on ſhort ſtalks. *Willd.*

41. S. *longifolia.* Long-leaved Diſtant-toothed Willow. Muhlenb. in Sims and Kon. Ann. of Bot. v. 2. 66. t. 5. f. 6. Willd. n. 33. Purſh n. 22.—Leaves linear, pointed at each end, very diſtantly toothed, ſmooth, green on both ſides. Stipulas lanceolate, toothed. Catkins following the leaves, with rounded ſcales, ſomewhat hairy. Stamens two, bearded at the baſe.—Gathered on the banks of the Suſquehannah, flowering in July, by the Rev. Dr. Muhlenberg, from whom we have ſpecimens. A *ſhrub,* not above two feet high, with brown *branches,* pale when young. The *leaves,* five or ſix inches long, and not half an inch wide, with ſmall ſharp teeth a quarter of an inch, or further, aſunder, clearly mark this ſpecies. The flowering *branches* ſometimes bear broader and ſhorter foliage. We have ſeen but one unexpanded *catkin,* in which the *ſcales* are peculiarly ſhort and rounded, moſt hairy withinſide.

42. S. *babylonica.* Weeping Willow. Linn. Sp. Pl. 1443. Willd. n. 34. Purſh n. 23. Ait. n. 17. (Garb Arabum ; Rauw. It. 183. t. 26, copied in Dalech. append. 30.)—Leaves lanceolate, taper-pointed, ſharply ſerrated, ſmooth ; glaucous beneath. Stipulas half-ovate, taper-pointed, revolute. Catkins naked, accompanying the leaves. Germens ovate, ſeſſile, ſmooth. Branches pendulous.—Native of the Eaſt. Linnæus, adopting the idea of Rauwolf, happily named this elegant ſpecies in alluſion to the 137th pſalm. It has long been cultivated throughout Europe, as well as in America, for the ſake of its beauty, but it is a reproach to publiſhing botaniſts, that we have no figure of this tree, except the very imperfect, and indeed faulty, ones above quoted. Moſt people plant the Weeping Willow about waters, over which its drooping form has an appropriate and very pictureſque effect. But it thrives beſt in a dry gravelly ſoil, where it is leſs apt to ſplit or decay ; and will bear even the atmoſphere of London without injury. Its firſt ſhoots, and tender leaves, indeed too often ſuffer from an unfavourable ſpring in this climate, but the tree is never killed by any froſt. As the *branches* droop, the *catkins* aſcend in a recurved manner. The male plant is unknown to botaniſts.

S. capenſis, Thunb. Fl. Cap. v. 1. 139, ſeems too nearly related to this.

43. S. *Houſtouniana.* Houſtounian Willow. Purſh n. 24.—"Leaves linear-lanceolate, acute, very finely ſerrated, ſmooth, ſhining, and green on both ſides. Stipulas none. Catkins accompanying the leaves, cylindrical, villous. Scales ovate, acute. Stamens three to five, bearded half way up."—In Virginia and Carolina. Common in gardens under the name of *triſtis,* which belongs to a very different ſpecies, hereafter deſcribed. *Branches* extremely brittle at their baſe. *Purſh.*

44. S. *falcata.* Sickle-leaved Willow. Purſh n. 25.—"Leaves very long, linear-lanceolate, cloſely ſerrated ; tapering gradually, and ſomewhat falcate, upwards ; acute at the baſe ; ſmooth on both ſides : the young ones ſilky. Stipulas creſcent-ſhaped, toothed, deflexed."—On the banks of rivers, from Pennſylvania to Virginia. A very ſmooth ſpecies, with very ſlender brown *branches.* *Purſh.* *Flowers* not yet obſerved.

45. S. *ſubſerrata.* Wild Egyptian Willow. Willd. n. 35. (S. ſafſaf bælledi ; Forſk. Cat. Pl. Ægypt. 76.)—"Leaves lanceolate, pointed at each end, very ſmooth ; glandular at the baſe ; minutely ſerrated at the extremity."—Native of Egypt, where it is known by the name retained by Forſkall, equivalent to Wild Willow. He ſpeaks of it as impatient of cold. Willdenow, who had ſeen a dried ſpecimen, without fructification, thus deſcribes the plant. "*Branches* round, green, ſmooth. *Leaves* very like thoſe of *S. babylonica,* four inches long, green on both ſides ; entire or ſomewhat wavy in the margin ; obſcurely ſerrated at the point ; furniſhed at the baſe, on the upper ſide, with many glands, various in number and diſtribution, often ſcattered over part of the *footſtalk ;* which is otherwiſe ſmooth, and four lines in length. *Stipulas* roundiſh, half-heart-ſhaped, very blunt, glandular at the edge." *Willd.*

46. S. *purpurea.* Bitter Purple Willow. Linn. Sp. Pl. 1444. Willd. n. 36. Sm. Tr. of Linn. Soc. v. 6. 113. Fl. Brit. n. 1. Engl. Bot. t. 1388. (S. monandra ; Arduin. Mem. 1. 67. t. 11. Ehrh. Arb. 58.)—Decumbent. Stamen one. Leaves obovato-lanceolate, ſerrated, ſmooth ; narrow at the baſe. Stigmas very ſhort, ovate, nearly ſeſſile.—Native of Germany, Italy and England, in meadows and about rivers, flowering in March. We have known it for 35 years paſt in the meadows oppoſite King-ſtreet, Norwich, truly wild, though ſparingly. Few botaniſts, either here or abroad, are acquainted with this Willow. Linnæus always cultivated it with attention, though he ſays, in Fl. Suec. it was recently naturalized in the ſouth of Scania, from the banks of the Rhine, where it is frequent. He celebrates the excellence and durability of the twigs, for binding thatch, and making baſkets, adding that the live plant is extremely valuable for hedges. We are certain of his being the ſame as our's. The *S. purpurea,* though five or ſix feet high, never becomes a *tree,* but is rather a ſpreading, partly decumbent, *ſhrub,* conſpicuous for the rich glaucous purple of its ſmooth ſhining twigs. The *leaves,* though frequently alternate, are very often oppoſite, two or three inches long, contracted and entire at the baſe ; of a deep glaucous green above ; more glaucous beneath. *Footſtalks* ſmooth, rather ſhort. *Stipulas* none. *Catkins* often oppoſite, denſe and exactly cylindrical, about an inch long, and ſcarcely more than a line in diameter ; their *ſcales* obtuſe, hairy, black half way down. *Stamen* always ſimple, with a tawny, double, or four-lobed, *anther.* *Germen* ſeſſile, ſmall, rather longer than the ſcale, elliptical, broad, ſilky. *Style* hardly any. *Stigmas* thick, furrowed, undivided. *Capſule* ovate, ſmall, ſilky. The bark and leaves are very bitter. Curtis, and many other botaniſts, have confounded this elegant and very diſtinct ſpecies with the following. Mr. Crowe firſt adverted to the ſmall ſize of its *catkins.*

47. S. *Helix.* Roſe Willow. Linn. Sp. Pl. 1444. Willd. n. 37. Sm. Tr. of Linn. Soc. v. 6. 114. Fl. Brit. n. 2. Engl. Bot. t. 1343. Dalech. Hiſt. 277. f. 2. (S. monandra ; Hoffm. Sal. v. 1. 18. t. 1. f. 1—3. t. 5. f. 1. t. 23. f. 1. Curt. Lond. faſc. 6. t. 71.)—Erect. Stamen one. Leaves moſtly oppoſite, oblong-lanceolate, pointed, ſlightly ſerrated, ſmooth, linear at the baſe. Style nearly as long as the linear divided ſtigmas.—Common in watery places throughout Europe, flowering about the end of March, or beginning of April. This is a ſmall, ſlender, upright *tree,* altogether of a lighter hue than the laſt, with pale, yellowiſh, or purpliſh aſh-coloured, *branches,* which are long, ſmooth, tough, uſeful for many purpoſes. *Leaves,* as well as *catkins,* often oppoſite and alternate on the ſame

plant. *Stipulas* none; except occaſionally on very luxuriant young ſhoots, where they are either lanceolate, or unequally heart-ſhaped. *Catkins* longer, and full twice as thick, as the laſt, by which the two ſpecies, when in flower, are at once diſtinguiſhed. The *germen* too is larger, more ovate; and the *ſtyle* is very perceptibly elongated. *Stamen* like that of *purpurea.* Roſe-like expanſions, permanent through the winter, cauſed by the attack of an inſect, are frequent at the ends of the branches.

48. S. *Lambertiana.* Boyton Willow. Fl. Brit. n. 3. Engl. Bot. t. 1359. Willd. n. 38. Purſh n. 14.—Erect. Stamen one. Leaves obovato-lanceolate, acute, ſerrated, ſmooth; rounded at the baſe. Stipulas none. Stigmas very ſhort, ovate, notched, obtuſe.—Firſt remarked by A. B. Lambert, eſq. near his reſidence at Boyton, Wilts. We have ſince met with the ſame about the Thames, as well as near Icklingham, Suffolk, and by the river ſide at Norwich, towards Heigham. It always grows on the banks of rivers, flowering very early in April. Mr. Purſh ſpeaks of this Willow as occurring in North America, about rivers and in willow-grounds, having been introduced from Europe, and being cultivated, on account of its exceeding tough branches, for making baſkets. It is leſs generally known in England for this purpoſe, though perhaps inferior to few others. The plant is allied to the two laſt, with which it agrees in having frequently oppoſite *leaves* and *catkins,* monandrous *flowers,* and a yellow inner bark. But the *leaves* are very differently ſhaped, much broader, and rounded at the baſe. The young growing *branches* and *foliage* reſemble thoſe of a honeyſuckle, in their glaucous purpliſh hue, and are more or leſs downy. We could never find *ſtipulas* upon any ſpecimen, in any ſtate of growth. The *catkins,* at leaſt the female ones, are not above half ſo large as thoſe of *S. Helix,* and the *ſtigmas* eſſentially differ, in their ſhort rounded form, with hardly any *ſtyle.*

49. S. *Forbiana.* Fine Baſket Oſier. Fl. Brit. n. 4. Engl. Bot. t. 1344. Willd. n. 39. (S. fiſſa; Sm. Tr. of Linn. Soc. v. 6. 115; but not of Hoffmann.)—Erect. Stamen one. Leaves alternate, with ſmall ſtipulas, lanceolate, acute, with ſhallow ſerratures, ſmooth; rounded at the baſe; glaucous beneath. Style nearly as long as the linear divided ſtigmas.—This ſeems to be unknown out of England. It grows wild in many parts of Cambridgeſhire, flowering in April, and is highly eſteemed in that neighbourhood for the finer kinds of baſket-work. The *leaves* are alternate, rarely almoſt oppoſite, of a dark green above, and thickly, though not deeply or acutely, ſerrated; their form bears the ſame reſemblance to the laſt, that *Helix* and *purpurea* do to each other. Theſe *leaves* turn uſually very black in drying. *Stipulas* ſmall, lanceolate, ſerrated, glaucous, often wanting. Female *catkins* ſeſſile, ſo very like in all their parts, eſpecially the *ſtigmas,* to *Helix,* that they can ſcarcely be diſtinguiſhed; but the *leaves* are abundantly different; and the ſuperior quality of the twigs renders this *Salix* well worthy of attention. The thick *catkins,* and acute divided *ſtigmas,* prevent its being confounded with *S. Lambertiana.* We have never ſeen the entirely male plant, but in two or three inſtances have found a flower or two furniſhed with a *ſtamen* as well as *piſtil,* which has fortunately ſerved to aſcertain that this ſpecies agrees preciſely with the three laſt, in having a ſimple *filament;* not a divided one like Hoffmann's *S. fiſſa,* for which we had originally, for want of ſpecimens, taken it. See the following. Linnæus might perhaps have imagined that the plant we are deſcribing had been originally engendered between the male *Lambertiana* and female *Helix;* but we are not diſpoſed to give into ſuch fancies, which tend to overthrow all certainty of ſpecies, and even of genera, and which we do not find permanently confirmed, by any one example that can actually be traced.

50. S. *rubra.* Green-leaved Oſier. Hudſ. Angl. 428. Willd. n. 40. Fl. Brit. n. 5. Engl. Bot. t. 1145. Tr. of Linn. Soc. v. 6. 116. (S. fiſſa; Hoffm. Sal. v. 1. 61. t. 13, 14. Willd. Arb. 337. Ehrh. Arb. 29. S. vireſcens; Villars Dauph. v. 3. 785. t. 51. f. 30.)—Stamens combined below. Leaves linear-lanceolate, elongated, acute, ſmooth, with ſhallow ſerratures; green on both ſides.—Native of Germany, France, and England, flowering in April, before the leaves appear. It is one of the moſt valuable oſiers, and much cultivated in Cambridgeſhire. We have received the male plant from that county, by the favour of the Rev. Mr. Holmes, ſince the publication of Fl. Brit. and are now enabled to aſſert, what was there, from analogy only, conjectured, that the *ſtamens* are monadelphous. German ſpecimens alſo prove the *fiſſa* of Hoffmann to be our plant, long previouſly named *rubra* by Hudſon, in alluſion to the colour of its twigs, which however are rather tawny than red. When left to itſelf, this riſes into a ſmall tree, with long, upright, ſmooth, poliſhed *branches.* *Leaves* three or four inches long, graſs-green on both ſides, and ſmooth except when quite young; their margins beſet with very ſhallow tooth-like ſerratures. *Stipulas* linear-lanceolate, toothed, rarely preſent. *Catkins* ſeſſile, an inch and half long when fully expanded. *Scales* elliptical, emarginate, brown, hairy. *Stamens* two, more or leſs combined in their lower part. *Anthers* orange-coloured. *Nectary* oblong, obtuſe. *Germen* ſeſſile, ovate, ſilky. *Styles* ſeſſile, ovate, undivided.

51. S. *Croweana.* Broad-leaved Monadelphous Willow. Sm. Tr. of Linn. Soc. v. 6. 117. Fl. Brit. n. 6. Engl. Bot. t. 1146. Willd. n. 41.—Stamens combined below. Leaves elliptical, ſlightly ſerrated, quite ſmooth; glaucous beneath.—Diſcovered by Mr. Crowe, at Cranberry Fen, in the pariſh of Eaſt Winch, and in other parts of Norfolk, flowering in April or May. A female plant, agreeing in every other reſpect with Mr. Crowe's, which are male, was ſent, by Mr. Winch, from Waredale and Teeſdale in Durham. This Willow, the only diſcovered one with united *ſtamens* and broad *leaves,* forms an irregular ſpreading *tree,* or rather *buſh,* ſix feet high, of no known economical uſe, with ſhort, brittle, ſmooth, yellow or purpliſh, divaricated *branches.* *Leaves* alternate, hardly an inch and half long; bright ſhining green above; glaucous and veiny beneath; their points in maturity reflexed, and often ſplit. *Stipulas* ſmall, rounded, toothed. *Catkins* before the leaves, lateral, ſeſſile, oval, an inch long, with ſhort, ovate, brown, hairy *ſcales,* and two long yellow *ſtamens,* more or leſs combined, with orange *anthers.* *Germen* lanceolate, ſilky, nearly ſeſſile, with an elongated *ſtyle.* The numerous male *catkins* render this plant ornamental when in bloſſom, nor is the foliage deſtitute of beauty. We have choſen it to commemorate the finder, whoſe attention to this difficult genus has richly earned ſuch an honour. A ſprig of this Willow, along with the CROWEA, (ſee that article,) is carved on his monument in the church of his own manor at Lakenham, near Norwich; where his living collection of *Salices* is ſtill carefully preſerved.

52. S. *divaricata.* Spreading-branched Willow. Pall. Roſſ. v. 1. p. 2. 80. Willd. n. 42.—"Stem diffuſe, divaricated. Leaves ovato-lanceolate, ſmooth, with wavy ſerratures.—Gathered by Mr. Sokolof, on *Sochondo,* the moſt lofty ſummit of the alps of Dauria, nor has it been met with elſewhere. *Pallas.* It grows among granite rocks, over which it ſpreads in a proſtrate form. *Stem* as thick as the finger, very much divided and forked from its origin, with ſhort, rigid, depreſſed, yellowiſh-brown *branches.* *Leaves*

crowded about the ends of the ſhoots; in ſome ſpecimens lanceolate and nearly entire; in others ovato-lanceolate, coarſely ſerrated, the ſerratures ſomewhat wavy and obtuſe; both ſides are quite ſmooth. There are no *ſtipulas*. Female *catkins* nearly ſeſſile among the leaves, hardly an inch long. Pallas ſays this ſpecies very nearly approaches the *phylicifolia* of Linnæus, ſee n. 15; but of the latter he probably knew nothing more than the figure in Fl. Lapp. nor is his own deſcription of the *divaricata* ſufficient to convey any preciſe information of its character or affinities; for the *capſules* of all "diſcharge denſe tufts of down," and we ſhould have preferred ſome account of their ſhape, ſurface, or inſertion.

53. S. *rhamnifolia*. Buckthorn-leaved Willow. Pall. Roſſ. v. 1. p. 2. 84. Willd. n. 45. (S. pumila, foliis ovalibus, obſcurè ſerratis, utrinque lævibus, infernè glaucis; Gmel. Sib. v. 1. t. 35. f. A.)—"Leaves obovate, ſlightly ſerrated, ſmooth, glaucous beneath. Branches procumbent. Catkins lax. Capſules turbinate."—Native of mountain bogs, and ſtony banks of rivers, in Siberia. *Twigs* ſcarcely a foot long, ſlender, flexible, yellowiſh or brown. *Leaves* firm and rigid, an inch or inch and half long, moſt tapering at the baſe. *Catkins*, when in fruit, above an inch long, of about fifteen rather large, ſhort, turbinate, looſely diſpoſed, *capſules*.

54. S. *Starkeana*. Marſh Sileſian Willow. Willd. n. 46.—"Leaves elliptical, nearly orbicular, ſmooth; ſomewhat ſerrated in the middle; rather glaucous beneath. Catkins after the leaves. Capſules ovato-lanceolate, ſtalked, downy."—Found in the bogs of Sileſia by the Rev. Mr. Starke. *Branches* yellowiſh-brown. *Leaves* an inch and half long, very obtuſe, moſtly entire, ſometimes diſtantly ſerrated about the middle or baſe; bright green on the upper ſide; a little hairy beneath when young. *Stipulas* ſmall, ovate, toothed. Male *catkins* four lines long, cylindrical, ſlender, with lanceolate hairy *ſcales*, long white *filaments*, and roundiſh yellow *anthers*. Female ones an inch, or finally more, in length. *Germen* lanceolate, with a ſhort divided *ſtyle*, and cloven *ſtigmas*. Stalk of the *capſule* very long.

55. S. *prunifolia*. Plum-leaved Willow. Fl. Brit. n. 22. Engl. Bot. t. 1361. Willd. n. 47. (S. myrſinites; Lightf. Scot 599.)—Leaves ovate, ſerrated, naked; ſmooth and even above; glaucous beneath. Branches rather downy. Capſules ovate, ſilky. Style as long as the ſtigmas. Native of the Highland mountains of Scotland, flowering in April or May. This is a buſhy *ſhrub*, often three feet high, and generally erect, with copious, ſpreading, ſubdivided *branches*, of a brown hue, clothed with extremely ſhort, curved, but prominent, fine down, not ſilky cloſe-preſſed hairs. *Leaves* an inch long, or rather more, broadly ovate, flat, bluntly pointed, ſerrated throughout; quite ſmooth, green and ſhining, without any prominent veins, on the upper ſide; glaucous, veiny, when young ſlightly ſilky, beneath. *Stipulas* very minute, half-ovate, convex, notched, frequently wanting. *Catkins* lateral, erect, cylindrical, not an inch long. *Scales* brown, almoſt orbicular, very hairy or ſilky. *Nectary* oblong. *Germen* ſeſſile, ovate, ſilky. *Style* elongated, full as long as the *ſtigmas*, which are blunt, and deeply divided. This is certainly what Lightfoot took for *myrſinites*, and we had conſidered it as Hoffmann's; but the latter is referred by Willdenow to another ſpecies; ſee *Amaniana*, n. 21.

56. S. *vacciniifolia*. Bilberry-leaved Willow. Engl. Bot. t. 2341. (S. prunifoliæ varietas; Fl. Brit. 1055. S. myrtilloides; Donn. Cant. ed. 5. 231.)—Leaves ovate, ſerrated; ſmooth and even above; glaucous and ſilky beneath. Germen ovate, ſilky. Style as long as the ſtigmas. Stems decumbent.—Native of Scotland, more eſpecially in the ſouth, according to Mr. G. Anderſon, to whom we are obliged for pointing out its difference from the laſt. Its mode of growth is more humble, partly procumbent, and the whole plant ſmaller, with ſlender *branches*, more or leſs downy. *Leaves* of a much narrower ſhape, and always conſiderably more ſilky at the back. *Catkins* much the ſame as thoſe of *prunifolia*, thicker than in the following, from which moreover the even upper ſurface of the *leaves* eſſentially diſtinguiſhes the preſent plant; which may be *myrtilloides* of Villars, but is not that of Linnæus.

57. S. *venuloſa*. Veiny-leaved Willow. Fl. Brit. n. 23. Engl. Bot. t. 1362. (S. formoſa; Willd. n. 51? ſee n. 62.)—Leaves ovate, ſerrated, naked; reticulated with prominent veins above: rather glaucous beneath. Germen elliptical, ſilky. Style very ſhort.—Native of ſeveral parts of the Highlands of Scotland; flowering in our gardens like the two laſt, either late in April, or early in May. The ſize and habit of this ſpecies, as well as the *ſtipulas*, cloſely accord with *prunifolia*; but the *leaves* are clearly and eſſentially diſtinguiſhed by the prominent veiny reticulations of their upper ſurface, ſtrongeſt toward the margin, and very apparent in a dry, as well as freſh, ſtate: the under ſide is uſually leſs glaucous than in *prunifolia*; *catkins* more ſlender, with ovate obtuſe *ſcales*; *germen* ſmaller, elliptical rather than ovate, more ſilky, with a ſhorter *ſtyle*. Their *ſtigmas* agree. Willdenow ſuſpects this may be the ſame with his *formoſa*, but he had not compared them, and our's is ſo good a ſpecies, that we cannot leave it in any uncertainty. Thoſe who may have an opportunity of comparing both, may ſettle the queſtion. It muſt be obſerved that the *capſule* of *venuloſa* becomes ovate as it ripens, when alſo the *ſtyle* is more elongated.

58. S. *Weigeliana*. Weigelian Willow. Willd. n. 48.—"Leaves elliptical, acute, ſmooth; rather glaucous beneath; toothed at the ſummit; entire at the baſe. Germen oblong, clothed with ſilky hairs. Style elongated."—Found on the mountains of Sileſia. *Branches* brown. *Leaves* an inch and a half, or more, in length, toothed in their upper half; ſhining and bright green above; paler, and, the younger ones eſpecially, ſomewhat glaucous, beneath, though quite ſmooth. *Stipulas* ſmall, narrow-lanceolate, nearly entire. Female *catkins* an inch long, finally an inch and a half, with lanceolate hairy *ſcales*. *Style* divided half way down. *Stigmas* deeply divided. *Willdenow*.

59. S. *myrſinites*. Green Whortle-leaved Willow. Linn. Sp. Pl. 1445. Fl. Lapp. ed. 2. 293. t. 8. f. *f*. t. 7. f. 6. Willd. n. 49. Purſh n. 36. Fl. Brit. n. 21. Engl. Bot. t. 1360. Fl. Dan. t. 1054. Hoffm. Sal. v. 1. 71. t. 18, and poſſibly 17.—Leaves elliptical, ſerrated, ſmooth, veiny, poliſhed on both ſides. Young branches hairy. Germen awl-ſhaped, clothed with ſilky hairs. Style as long as the cloven ſtigmas.—Native of the mountains of Lapland, Scotland and Switzerland, as well as of Labrador, flowering in April, May, or June. A little ſturdy upright *ſhrub*, with numerous ſhort thick *branches*, hairy, not ſilky, when young. *Leaves* of a deep dull green, but poliſhed on both ſides, of a rigid crackling texture when full grown, and remarkable for remaining frequently through the winter, in a withered diſſected condition; the young ones are a little ſilky. *Stipulas* ſmooth, ſerrated, ſpreading, often very large. *Catkins* terminal, purpliſh, ſhort, thick and obtuſe. *Scales* obovate. *Nectary* notched. *Anthers* blueiſh. *Capſule* tapering, or nearly cylindrical, downy, though leſs ſilky than the *germen*. *Style* thick. *Stigmas* divaricated, obtuſe, at length deeply divided. Some Britiſh writers have miſtaken this for the Linnæan *retuſa*.

60. S. *Dickſoniana.* Broad-leaved Mountain Willow. Engl. Bot. t. 1390. Willd. n. 88. Ait. n. 49. (S. myrtilloides; Fl. Brit. n. 25, excluding the ſynonym.)—Leaves elliptical, acute, ſlightly toothed, ſmooth. Young branches very ſmooth. Catkins ovate, ſhort, erect. Germen ſtalked, ovate, ſilky. Stigmas ovate, obtuſe, nearly ſeſſile.—Gathered by Mr. Dickſon, on the mountains of Scotland. This was ſuppoſed to be the *myrtilloides* of Linnæus, notwithſtanding its toothed *leaves*, till it bloſſomed, and proved, in that ſtate, very diſtinct. Nor is the difference in the *leaves* leſs conſtant, for thoſe of the *myrtilloides*, ſee n. 79, are always entire, and ſomewhat revolute. Our *Dickſoniana* is a ſmall, upright, branched *ſhrub*, about a foot high, flowering in April, quite ſmooth in all its *branches*, *leaves*, and *ſtalks*. *Stipulas* very minute. *Leaves* an inch and half, or two inches, long, flat, with ſhallow glandular teeth, or ſerratures; even, and bright green, above; glaucous, finely veined, beneath. *Footſtalks* ſhort and thick. Female *catkins* nearly ſeſſile, attended by two or three ſmall floral leaves, erect, ovate, very ſhort. *Scales* dark purpliſh-brown, notched, hairy. *Nectary* as long as the ſtalk of the *germen*, which is about half the length of the *germen* itſelf. *Style* very ſhort. *Stigmas* thick, yellow, notched. Theſe *catkins* reſemble thoſe of *roſmarinifolia* hereafter deſcribed, in the third ſection, in ſhape and colour, but differ in being erect, not recurved.

Willdenow, miſtaking *ſmooth* for *downy*, in our deſcription of the *leaves*, has widely miſplaced the preſent ſpecies.

61. S. *Waldſteiniana.* Waldſteinian Willow. Willd. n. 50.—"Leaves obovate-elliptical, ſmooth, rather acute; ſerrated in the middle; ſhining above; ſomewhat glaucous beneath. Germen lanceolate, ſilky. Young branches ſmooth."—Found on the Croatian alps. Very nearly akin to the laſt, but differing in its ſmooth *branches; leaves* glaucous beneath, remotely ſerrated in the middle part only; *anthers* yellow; and perfectly ſeſſile *germens*. *Willdenow.*

62. S. *formoſa.* Elegant Willow. Willd. n. 51. (S. glauca; Willd. Arb. 338. S. alpina; Scop. Carn. ed. 2. v. 2. 255. t. 61?)—"Leaves oblong, acute, ſmooth on both ſides, fringed; ſerrated in the middle; ſhining, and reticulated with veins, above; glaucous beneath. Capſules lanceolate, ſilky."—Native of the Swiſs and Carinthian alps. *Branches* reddiſh-brown. *Leaves* an inch or more in length, a little contracted at the baſe, finely fringed at the edge; the young ones very ſilky beneath; (which two characters are not found in our *venuloſa*, n. 57.) *Stipulas* extremely minute. Female *catkins* hardly an inch long; with lanceolate, fringed *ſcales*. *Germens* villous, with white ſilky hairs. *Style* ſhort, cloven, as well as the *ſtigmas*. *Willdenow.*

63. S. *carinata.* Folded-leaved Willow. Fl. Brit. n. 24. Engl. Bot. t. 1363. Willd. n. 52.—Leaves ovate, finely toothed, ſmooth, minutely veined, folded ſo as to form a keel. Germens ovate, downy.—Communicated from the Highlands of Scotland, by Mr. Dickſon, and the Rev. Dr. Stuart. It flowers in April, and is related to our *prunifolia* and *venuloſa*, though larger and more upright, with elongated, ſtraight, nearly ſmooth young *branches*. *Leaves* longer, more elliptical, remarkably recurved and ſharply keeled, ſo that the two ſides approach each other, and the leaf cannot be preſſed flat. The under ſurface is paler, opaque, in ſome degree glaucous; ſilky at the very earlieſt period only. On the old *branches*, a ſort of tooth is obſervable, where each *footſtalk* had ſtood. *Stipulas* very minute. *Catkins* ſmall, with roundiſh hairy ſcales, not half ſo long as the ſeſſile, ovate, ſilky *germen*. *Nectary* abrupt, nearly as long as the ſcale. *Style* ſhort. *Stigmas* ovate, thick, and ſhort, finally notched. We know nothing of the male plant.

64. S. *coruſcans.* Glittering Willow. Willd. n. 53. (S. Arbuſcula; Jacq. Auſtr. v. 5. 4. t. 408.)—Leaves ovate-elliptical, acute, ſerrated, ſmooth; tapering at the baſe; ſhining above; glaucous beneath; the lower ſerratures glandular. Capſules ovato-lanceolate, ſmooth.—Native of the alps of Germany, flowering in June. *Stem* irregularly branched, partly diffuſe, partly erect. *Leaves* an inch or more in length. Male *catkins* near an inch long, female more. *Scales* obovate, fringed with long hairs. *Stamens* two, yellow, a little hairy. *Germen* ovato-lanceolate, ſmooth. *Style* elongated, ſplit nearly half way down. *Stigmas* blunt, notched. Willdenow conceives this to be very nearly related to *tenuifolia.* We cannot judge with certainty, for want of ſpecimens of Jacquin's plant; but they appear different.

65. S. *Arbuſcula.* Little Tree Willow. Linn. Fl. Lapp. ed. 2. 297. t. 8. f. *m.* Sp. Pl. 1445. *γ.* Willd. n. 54? Fl. Brit. n. 15. Engl. Bot. t. 1366.—Leaves lanceolate, acute, very obſcurely toothed, ſmooth; rather glaucous beneath; moſtly without ſtipulas. Branches downy. Catkins ovate, erect. Germen ovato-lanceolate, ſilky, ſtalked. Gathered by Mr. Dickſon, in the Highlands of Scotland. We have carefully determined it to be the genuine *Arbuſcula* of Linnæus, but dare not anſwer for all Willdenow's ſynonyms, ſcarcely any ſpecies being leſs underſtood. The *ſtem* is erect, ſlender, about a foot high, naked below, like a little tree; the *branches* ſpreading, downy. *Leaves* on very ſhort ſtalks, moderately ſpreading, liable to vary greatly in breadth, flat, finely veined, appearing entire till they are accurately examined, when they prove to be obſoletely toothed, as Linnæus rightly ſays in Fl. Lapp. When young they are ſilky; but when full grown they become ſmooth, except a few hairs beneath. No *ſtipulas* are to be found in general; though, when the ſhrub is cut down, the young luxuriant radical ſhoots bear broad ovate *leaves*, accompanied by ſuch appendages, of a ſmall ſize, lanceolate and flat. The *catkins* are lateral, nearly ſeſſile, of a peculiarly ſhort ovate figure, with oblong, purpliſh, notched, hairy *ſcales*. *Stigmas* broad, ovate, tawny, on a very ſhort *ſtyle*. This is moſt naturally allied to *roſmarinifolia*, except the adult *leaves* being ſmooth, and the *catkins* erect. Willdenow deſcribes two *ſtyles*, and a ſmooth *germen*, ſo that his plant can hardly be our's.

66. S. *herbacea.* Leaſt Willow. Linn. Sp. Pl. 1445. Fl. Lapp. ed. 2. 294. t. 8. f. *h.* t. 7. f. 3, 4. Willd. n. 55. Purſh n. 37. Fl. Brit. n. 26. Engl. Bot. t. 1907. Fl. Dan. t. 117. Hoffm. Sal. v. 1. 74. t. 20. (S. n. 1649; Hall. Hiſt. v. 2. 309.)—Leaves orbicular, ſerrated, reticulated with veins; very ſmooth and ſhining on both ſides. Capſules ovato-lanceolate, ſmooth.—Native of the ſummits of the loftieſt hills throughout Europe, in a micaceous ſoil, bloſſoming in June, and ripening its capſules in Auguſt. This is perhaps the leaſt of all *ſhrubs*, the *ſtems*, though truly woody, perennial, and often branched, being but an inch or two high. The woody creeping *roots* are of great extent, running deep among the crevices of the rocks. *Leaves* on ſhort ſtalks, bright green, as nearly orbicular as poſſible, rather rigid, deciduous, various in ſize, occaſionally emarginate, without *ſtipulas*. Male *catkins* yellow, terminal, ſtalked, half an inch long. *Scales* roundiſh, hairy. *Nectary* double. *Stamens* two, diſtinct, ſmooth. Female *catkins* of fewer *flowers*; Willdenow ſays of about five, but we generally find more. *Scales* more oblong, and ſmooth. *Nectary* double. *Germen* nearly

ſeſſile, ſmooth, with a ſhort *ſtyle*, and ſmall deeply cloven *ſtigmas*.

67. S. *arbutifolia*. Arbutus-leaved Willow. Willd. n. 56. (S. n. 1646; Hall. Hiſt. v. 2. 308. S. pumila, folio utrinque glabro; Bauh. Hiſt. v. 1. p. 2. 217. "S. dubia; Suter. Helvet. v. 2. 283.")—"Leaves lanceolate, acute, obſcurely ſerrated, ſmooth and ſhining on both ſides; reticulated with veins beneath. Germen lanceolate, hairy. Style elongated. Stigmas deeply divided."—Native of mount Pilat in Switzerland, and the alps of Savoy. *Stem* diffuſe, with dark brown *branches*. *Leaves* about four lines long, very finely ſerrated, on ſhort ſtalks. Female *catkins* cylindrical, near an inch in length, with oblong, obtuſe, brown, hairy ſcales. Willdenow ſays he received this under the name of *S. arbutifolia* of Afzelius; but that it differs widely from what Pallas has ſo denominated in Fl. Roſſ. v. 1. p. 2. 79, which latter he durſt not adopt, becauſe of its imperfect deſcription. He moſt truly adds, that "almoſt all Pallas's *Salices* are doubtful." That great botaniſt, though ſo many of this genus muſt have fallen in his way, paid no juſt attention, either to their true diſtinctive characters or ſynonyms; nor can any one underſtand them without repeatedly watching the ſame individual plant.

68. S. *berberifolia*. Barberry-leaved Willow. Pall. Roſſ. v. 1. p. 2. 84. t. 82. It. v. 3. append. 759. t. K, k. f. 7. Willd. n. 57. (S. pumila, foliis denſè congeſtis, ovalibus, criſtatis; Gmel. Sib. v. 1. 161. t. 35. f. 3.)—Leaves obovate, bluntiſh, with deep tooth-like ſerratures; ſmooth, ſhining, ribbed, and reticulated with veins, on both ſides. Capſules ovate, ſmooth.—Gathered on the loftieſt, rocky, ſnowy mountains of Dauria, by Pallas, from whoſe herbarium we have been favoured by Mr. W. Borrer with a ſpecimen. Here at leaſt we come to a clearly diſtinct, and very curious, ſpecies. The *ſtems* are branched and diffuſe. *Leaves* not much above half an inch long, ſtalked, ſo deeply toothed as to be almoſt pinnatifid, and very happily compared to thoſe of the Barberry. Pallas ſays they are permanent, (we preſume like thoſe of *myrſinites*,) and that ſome remain green under the ſnow. *Catkins* terminal, ſlender, as long as the leaves, with villous *ſcales*. *Stamens* two or three. *Capſules* few, rather large.

Sect. 2. *Adult leaves entire, nearly ſmooth.*

69. S. *Kitaibeliana*. Kitaibelian Willow. Willd. n. 58.—"Leaves obovato-lanceolate, entire, emarginate, ſmooth; ſhining above. Catkins cylindrical, many-flowered. Scales ſhorter than the ovato-lanceolate ſmooth germen.—Sent by Kitaibel from the Carpathian alps, named *retuſa* with a doubt. Willdenow eſteems it abundantly diſtinct, the *leaves* being many times larger, always emarginate; female *catkins* of numerous flowers; *ſcales* but one-third the length of the *germen*; and *capſules* on long ſtalks. The *germens* and *ſcales* are ſmooth, except a few hairs at the end of the latter. *Style* of a middling length, divided. *Stigmas* cloven.

70. S. *retuſa*. Blunt-leaved Willow. Linn. Sp. Pl. 1445. Willd. n. 59, Ait. n. 35. (S. n. 1648; Hall. Hiſt. v. 2. 309. S. puſilla humilis; Camer. Epit. 108. S. alpina minima repens, retuſo ſerpilli folio lucido; Bocc. Muſ. v. 1. 18. t. 1.)—Leaves obovate, entire, ſmooth; ſhining above. Female catkins oblong, of few flowers. Scales the length of the oblong ſmooth germen.—Native of the alps of Germany, Switzerland, France, and Italy, but not of Britain, or the north of Europe. The main *ſtems* are woody, depreſſed, creeping, branched, often of great thickneſs, throwing up many ſhort, ſmooth, leafy *branches*, which are likewiſe partly decumbent. *Leaves* ſtalked, various in ſize and breadth, but uſually from half an inch to an inch long, and from one to four lines broad; quite entire; abrupt, or even emarginate at the extremity; tapering at the baſe; furniſhed with one rib, and many ſtraight parallel veins. *Catkins* lax; the males diandrous, yellow, with elliptic-oblong, ſlightly hairy *ſcales*; females of about eight or ten flowers. *Capſule* large, nearly ſeſſile, ovate, ſmooth. The *ſtyle*, which is ſhort, and undivided, remains at the extremity of one of the valves, and as the *capſule* becomes quite ripe, its ſtalk is ſomewhat elongated.

71. S. *ſerpyllifolia*. Thyme-leaved Willow. Scop. Carn. ed. 2. v. 2. 255. t. 61. Willd. n. 60.—"Leaves ovate, or ovato-lanceolate, acute, entire, ſmooth; ſhining above. Catkins oblong, of few flowers. Capſules elliptical, ſmooth. Stigmas ſeſſile."—Native of the alps of France, Italy, Switzerland, and Carniola. We cannot preciſely refer any of our numerous alpine ſpecimens, collected with conſiderable attention and labour, to this ſpecies; which Willdenow ſays differs from *retuſa*, in having *leaves* but one-third ſo large, and always acute; *ſcales* of the female *catkin*, whilſt in flower, longer than the *germen*, though afterwards but one-third its length; *ſtyle* none, which is of a middling length in the foregoing; and, finally, the *germen* oblong-elliptical, not contracted at the upper part. It muſt be confeſſed, that Scopoli's figure throws no great light on the ſubject.

72. S. *cordifolia*. Heart-leaved Labrador Willow. Purſh n. 10.—"Stem depreſſed. Leaves oval, rather acute, entire, reticulated with veins; heart-ſhaped at the baſe; ſmooth above; pale, with a hairy rib and margin, beneath. Stipulas half-heart-ſhaped."—Native of Labrador. Cultivated by Mr. G. Anderſon. In general habit it reſembles *S. myrſinites*. *Purſh*.

73. S. *folioloſa*. Many-leaved Willow. Afzel. in Linn. Fl. Lapp. ed. 2. 295. Willd. n. 61. (S. alpina, myrti folio; Rudb. Lapp. 99. S. Arbuſcula β; Linn. Sp. Pl. 1445.)—Leaves elliptic-obovate, entire, ſomewhat pointed, ſmooth, glaucous beneath. Germen lanceolate, ſilky, on a long ſtalk. Stigmas nearly ſeſſile, deeply divided.—Native of ſandy fields in the wild part of Lapland, but rare. *Linnæus*. Scarcely a foot high, with much of the appearance of *tenuifolia*, n. 20, but the *leaves* are not an inch long, moſtly, if not quite, entire, thin and almoſt pellucid; green above; glaucous beneath; they are perfectly ſmooth, except ſome downineſs on the midrib in a young ſtate. *Catkins* from ſhort lateral branches, ſhort, thick, many-flowered. *Scales* elliptic-oblong, yellow, nearly ſmooth, ſcarcely longer than the ſilky ſtalks of the ſtill more ſilky *germens*. Nothing can be more diſtinct from *S. Arbuſcula*.

74. S. *mucronata*. Pointed Cape Willow. Thunb. Prodr. 6. Fl. Cap. v. 1. 140. Willd. n. 62.—"Leaves entire, ſmooth, oblong, pointed; glaucous beneath."—Gathered at the Cape of Good Hope by Thunberg, whoſe ſpecific character is far from ſufficient. His expreſſion of "*foliis integris*" may poſſibly mean that the *leaves* are not quite entire, and if ſo, this ſpecies may perhaps not be properly placed here. The *ſtem* is ſix feet high. *Leaves* at moſt an inch in length. *Catkins* downy.

75. S. *reticulata*. Wrinkled Willow. Linn. Sp. Pl. 1446. Fl. Lapp. ed. 2. 296. t. 8. f. *l*. t. 7. f. 1, 2. Willd. n. 63. Purſh n. 7. Fl. Brit. n. 27. Engl. Bot. t. 1908. Fl. Dan. t. 212. Hoffm. Sal. v. 2. 3. t. 25—27. (S. n. 1650; Hall. Hiſt. v. 2. 309. S. pumila, folio rotundo; Bauh. Hiſt. v. 1. p. 2. 217; not v. 1. 12. as copied by Willdenow from Linnæus.)—Leaves orbicular,

ſomewhat elliptical, obtuſe, entire, coriaceous, ſmooth, with reticulated veins; glaucous beneath. Stigmas nearly ſeſſile. Capſule ſhaggy.—Native of all the loftieſt mountains of Europe, as well as of Labrador, Newfoundland, and the north-weſt coaſt of America; bloſſoming in June and July, after the foliage has attained its full ſize. It occurs in the mountainous parts of Wales and Yorkſhire, as well as in Scotland; and is one of our moſt elegant alpine plants. The *roots* are thick and woody. The *ſtems* cling cloſe to the rocks, branching over them, and forming a carpet or tapeſtry, often ſeveral feet in diameter. *Leaves* three from each bud, on long ſtalks, beautifully and copiouſly veined, from one to two inches wide, convex, ſomewhat revolute; glaucous-green above; white, with browniſh or pink veins, beneath. *Catkin* ſolitary from the ſame bud, terminal, ſtalked, cylindrical, denſe, many-flowered, reddiſh. *Scales* obovate, woolly. *Nectary*, in the female at leaſt, of four erect, awl-ſhaped, blunt glands. *Germen* and *capſule* ovate, ſeſſile, cottony. *Stigmas* deeply divided, with hardly any *ſtyle*.

76. S. *veſtita*. Silky reticulated Willow. Purſh n. 8.—"Leaves nearly orbicular, entire, reticulated with veins; ſmooth above; ſilky with long cloſe-preſſed hairs beneath. Stipulas none. Catkins ſtalked, linear, ſilky. Germen ſeſſile, ovate, villous. Style deeply divided. Stigmas cloven."—Native of Labrador, flowering in June. A very elegant ſpecies, reſembling the preceding. *Purſh.*

77. S. *Uva urſi*. Bear-berry-leaved Willow. Purſh n. 9.—"Stem depreſſed. Leaves ſpatulate-obovate, obtuſe, entire, ſmooth; ſhining above; glandular at the margin beneath. Stipulas none. Catkins lax. Scales oblong, fringed. Germen ſtalked, ovate, ſmooth. Style deeply divided. Stigmas two-lobed."—Native of Labrador. Flowering in April or May. Cultivated by Mr. G. Anderſon. A beautiful little ſpecies, with all the appearance of *Arbutus Uva urſi*, in habit, as well as in the form of its *leaves*. *Purſh.*

78. S. *pedicellaris*. Long-ſtalked Willow. Purſh n. 13.—"Stem erect. Branches ſmooth. Leaves obovato-lanceolate, acute, entire, ſmooth. Stipulas none. Catkins ſtalked, very ſmooth. Scales oblong, ſcarcely hairy. Germen ovate-oblong, ſmooth; its ſtalk twice as long as the ſcale. Stigmas ſeſſile, divided.—Found on the Catſkill mountains, New York, flowering in April. This "elegant and ſingular ſpecies," brought by Mr. Purſh from America, flowered in Mr. Anderſon's garden. We have ſeen no ſpecimen. The *leaves* are green on both ſides.

79. S. *myrtilloides*. Myrtle-leaved Willow. Linn. Sp. Pl. 1446. Fl. Lapp. ed. 2. 295. t. 8. f. *i*, *k*. Ait. n. 37?—Leaves ovate, entire, bluntiſh, ſmooth; glaucous beneath. Germen ovato-lanceolate, ſmooth; its ſtalk longer than the ſcale.—Native of ſpongy bogs in Lapland and Siberia. A *ſhrub* about a foot high, erect, like a little tree; its upper *branches* purpliſh, fleſh-coloured at the extremity, ſmooth. *Leaves* when full-grown near an inch long, green above, very ſmooth and even, with reticulated veins; the margin ſlightly reflexed. *Footſtalks* a line in length, occaſionally hairy. *Stipulas* none. Female *catkins* terminating the ſhorter lateral branches, about an inch long, obtuſe, lax in their lower part; their ſtalks either quite ſmooth, or ſlightly hairy. *Scales* yellowiſh, elliptical, more or leſs bearded with white hairs. *Germen* ovate and quite ſmooth at the baſe, elongated, bluntiſh, and occaſionally granulated, not hairy or downy, at the ſummit, its ſtalk ſmooth, often much longer than the ſcale. *Style* the length of the ſmall divided *ſtigmas*. The only male *catkin* we have ſeen is about an inch long, ſlender, yellow, apparently diandrous. When the ſecond edition of the Fl. Lapponica was publiſhed, we judged *S. cæſia* of Villars, by its *leaves*, to be the ſame with this. But having in 1802 received from the author a more complete ſpecimen, his plant proves very diſtinct. See the following. We preſume it muſt be the Lapland one that ſir J. Banks brought from Iceland, in 1772, though the ſpecific character in Hort. Kew. taken from Willdenow, evidently, by the downy capſules, belongs to the *cæſia*. *S. myrtilloides* of Villars, from himſelf, is different from both, having ſtrongly ſerrated *leaves*. We cannot well determine it. See n. 56.

80. S. *cæſia*. Grey Bilberry Willow. Villars Dauph. v. 3. 768. t. 50. f. 11. (S. myrtilloides; Willd. n. 64.)—Leaves elliptical, pointed, entire, ſmooth; glaucous beneath. Germen lanceolate, ſilky, ſtalked.—Found by Villars on the mountain of Lautaret in Dauphiny, about the banks of rivers, and no where elſe. We have from him a female ſpecimen only. He deſcribes the plant as three or four feet high, with *branches* and *leaves* ſo much reſembling his *monandra*, (which ſeems to be our *Helix*,) that he at firſt conceived it a mere variety, till he ſaw the fructification. In fact, the *leaves* ſeem to be ſometimes nearly oppoſite, as in *Helix*. Their ſhape, however, is widely different, elliptical or ovate, not an inch long, and nearly approaching the laſt-deſcribed, only rather more pointed. Female *catkins* very diſtinct from the laſt, and ſo nearly according with thoſe of the Linnæan ſpecimen of *folioloſa*, n. 73, that we have been inclined to think them the ſame; but the *leaves* do not agree. Theſe *catkins*, of *cæſia*, are denſely cylindrical, many-flowered, with a hairy ſtalk, and elliptical bearded *ſcales*, rather longer than the downy ſtalks which ſupport the very white, ſilky *germens*. *Style* and *ſtigmas* ſmall, ſmooth. *Capſules* ovate, purpliſh, ſilky, forming a denſe cluſter about an inch long. Theſe ſmall alpine Willows are ſo difficult, and ſo little underſtood, that we have been anxious to throw all poſſible light upon them, and yet we feel the imperfection of all we can do.

81. S. *integra*. Entire-leaved Japan Willow. Thunb. Jap. 24. Willd. n. 65.—"Leaves entire, ſmooth, linear-oblong, obtuſe."—Gathered by Thunberg, in Japan. He deſcribes the *ſtems* as round, long, aſh-coloured, and ſmooth. *Leaves* ſeveral from each bud, ſeſſile, entire, ſmooth on both ſides, ſpreading, half an inch, or more, (we preſume,) in breadth. *Flowers* from the ſame buds. This deſcription is inſufficient to give any correct idea of the ſpecies. The expreſſion *foliis integris* is changed by Willdenow to *integerrimis*, no doubt juſtly; for every Willow has *folia integra*, that is, undivided leaves. Botaniſts of the Linnæan ſchool, however, are now and then accuſtomed to uſe *folia integra*, for leaves that are nearly entire, or *ſubintegerrima*, and poſſibly Thunberg has this meaning. If ſo, the ſpecies in queſtion is wrongly placed in this ſection.

Sect. 3. *Leaves villous.*

82. S. *ægyptiaca*. Calaf, or Egyptian Willow. Linn. Sp. Pl. 1444. Willd. n. 66, excluding the references to Pallas and Gmelin. (Calaf et Ban; Alpin. Ægypt. 61. t. 62.)—Leaves ſomewhat toothed, elliptic-oblong, veiny; ſmoothiſh above; glaucous, and more or leſs hairy, beneath. Stipulas half-heart-ſhaped. Branches ſmooth. Catkins ſeſſile, leafleſs, very hairy.—Native of Egypt, from whence Haſſelquiſt ſent ſpecimens to Linnæus. Alpinus deſcribes it as a ſmall *tree*, growing in moiſt places. The *branches* are angular, furrowed, glaucous; ſmooth, except their youngeſt extremities. *Leaves* on rather ſhort ſtalks, broad at the baſe, without glands, uſually three or four inches long, and nearly two broad, acute, rather diſtantly toothed,

ſcarcely ſerrated; rounded at the baſe; glaucous, denſely downy when young, and always more or leſs hairy, beneath. *Stipulas* very evident on young ſhoots, though Linnæus ſays they are wanting. *Catkins* numerous, an inch or inch and half long, thick, crowded, alternate, from very large, ſmooth, brown *buds,* on the leafleſs upper part of the leafy *branches.* We have only the males, which are diandrous, the very denſe ſtraight hairs of their *ſcales* reaching to the ends of the *ſtamens.* The Egyptians procure from the *catkins,* by diſtillation, a cordial water, eſteemed antipeſtilential. An infuſion or decoction of the ſame is ſaid to have ſimilar qualities.

83. S. *ſerotina.* Late Willow. Pall. Roſſ. v. 1. p. 2. 77. It. v. 3. 759. t. N, n. (S. n. 19; Gmel. Sib. v. 1. 163. S. caprea γ; Linn. Sp. Pl. 1448.)—Leaves elliptic-lanceolate, entire; rather downy above; ſilky beneath. Stipulas lanceolate. Catkins ſeſſile, leafleſs, very hairy. Germens ſtalked, ſilky.—Abundant in the ſandy iſlands and ſhallows in the ſouthern part of the Wolga, not expanding its catkins or leaves till the beginning of June. In dry ground it becomes a *tree,* but is otherwiſe ſhrubby, ſix feet high, with brittle, grey or yellowiſh, twigs, ſmooth, except when very young. *Leaves* quite entire, revolute in the bud, often above a ſpan long. *Stipulas* ſmall. *Catkins* from much ſmaller buds than the preceding, with which Willdenow has incautiouſly been led to combine it, apparently becauſe Pallas has, in his Flora Roſſica, hinted their probable affinity. No two ſpecies can be more diſtinct. Linnæus has erroneouſly made the preſent a variety of his *caprea,* a ſpecies diſtinguiſhed by its broad ſerrated *leaves,* and ovate *germens,* which in the preſent are lanceolate. Willdenow himſelf has deſcribed it as diſtinct, by the name of *S. Gmeliniana,* Sp. Pl. v. 4. 709.

84. S. *glauca.* Glaucous Mountain Willow. Linn. Sp. Pl. 1446. Fl. Lapp. ed. 2. 299. t. 8. f. *p.* t. 7. f. 5, excluding the reference to Villars. Willd. n. 67. Engl. Bot. t. 1810. (S. n. 1642; Hall. Hiſt. v. 2. 307. t. 14.)—Leaves nearly entire, elliptic-lanceolate; even and nearly ſmooth above; woolly beneath. Footſtalks decurrent. Germen ſeſſile, ovate, woolly.—Native of the mountains of Lapland, Switzerland, and Scotland, flowering in May. An elegant *ſhrub,* erect, two or three feet high, diſtinguiſhed by the fine, glaucous-green, even and ſmooth upper ſurface of its *leaves,* and their ſnowy denſe down beneath. When young, their under ſide is beautifully ſatiny. *Catkins* very hairy, cylindrical, lateral, uſually accompanied by two leaves.

85. S. *Stuartiana.* Shaggy Mountain Willow. Engl. Bot. t. 2586. (S. arenaria maſculina; Fl. Brit. 1059. Engl. Bot. v. 26. 1809.)—Leaves nearly entire, lanceolate, acute; ſhaggy above; denſely ſilky beneath. Stigmas capillary, deeply divided. Style as long as the germen.—Gathered by the Rev. Dr. Stuart, and ſince by Mr. Borrer, in Breadalbane. It flowers in May or June. This has been confounded with *S. arenaria* and *lapponum,* hereafter deſcribed; but the *leaves* are ſmaller than either, more ſhaggy on both ſides, and very different in appearance from the former, while the long ſlender *ſtyle* and *ſtigmas* abundantly diſtinguiſh it from the latter.

86. S. *caneſcens.* Hoary Willow. Willd. n. 68.—“Leaves oblong-lanceolate, acute; ſomewhat ſerrated in the middle; ſmooth and ſhining above; white and downy beneath. Capſules ovate, downy.”—Deſcribed from a female dried ſpecimen by Willdenow, who was unacquainted with its native country. The *branches* are brown, ſomewhat downy when young. *Leaves* two or three inches long; the young ones hoary on the upper ſide. Female *catkins* an inch long, cylindrical. *Capſules* ovate, ſeſſile, downy. We know nothing that anſwers to this deſcription.

87. S. *ſalviæfolia.* Sage-leaved Willow. Willd. n. 69.—“Leaves oblong-lanceolate, acute, ſlightly and diſtantly toothed in the middle; hoary above; downy, with rugged veins, beneath. Stipulas half-heart-ſhaped, acute, entire.”—Gathered by Linck in Portugal. *Branches* dark brown; downy when young. *Leaves* tapering at the baſe, two inches long. *Stipulas* rather large. *Willdenow.*

88. S. *lanata.* Woolly Lapland Willow. Linn. Sp. Pl. 1446. Fl. Lapp. ed. 2. 302. t. 8. f. *x.* t. 7. f. 7. (S. caprea; Fl. Dan. t. 245.) β. S. depreſſa; Linn. Fl. Suec. ed. 2. 352. Fl. Lapp. ed. 2. 297. t. 8. f. *n.*—Leaves roundiſh-ovate, acute, entire; ſhaggy on both ſides; hoary beneath. Capſules ſeſſile, ſmooth. Style four times as long as the blunt divided ſtigmas.—Plentiful on the alpine mountains of Lapland, rarely in the woody parts. *Linnæus.* A ſmall *tree,* whoſe *leaves,* in a wild ſtate, are hardly above an inch long, denſely clothed with extremely ſoft ſhaggy down, which, in dried ſpecimens at leaſt, ſometimes acquires a beautiful tinge of lemon-colour. Female *catkins* unuſually large and thick, two or three inches long, of numerous *flowers.* *Scales* more or leſs hairy, or ſilky. *Germen* ovate, ſometimes a little woolly, but in the original ſpecimen quite ſmooth, ovate, bearing a ſlender *ſtyle,* almoſt half its own length, with blunt, deeply divided, *ſtigmas.* Linnæus aſſerts his *depreſſa,* which we have been occaſionally inclined to think a good ſpecies, is but a cultivated variety of this; which indeed is confirmed by a garden ſpecimen of *lanata,* whoſe *leaves* are two inches long, with elongated *footſtalks,* and approach thoſe of *depreſſa* in ſize and appearance. Both are very different from our *cotinifolia,* n. 120.

89. S. *lapponum.* Common Lapland Willow. Linn. Sp. Pl. 1447. Fl. Lapp. ed. 2. 300. t. 8. f. *t.* Willd. n. 72. (S. ſericea; Villars Dauph. v. 3. 782. t. 51. f. 27. Willd. n. 70. S. n. 1643; Hall. Hiſt. v. 2. 307. S. arenaria; Fl. Dan. t. 197.)—Leaves lanceolate, entire, bluntiſh; clothed on both ſides with long ſilky hairs. Germen ſeſſile, very woolly. Style about the length of the deeply ſeparated, cloven, blunt ſtigmas.—Extremely common in all the vallies among the Lapland alps, and frequent alſo in the woods. *Linn.* We have the ſame from Switzerland and Dauphiny, aſcertained as the plant of the authors above quoted; ſo that we are enabled very much to clear up the ſynonymy of this fine ſpecies, not hitherto detected in Britain. It is ſaid in Lapland to form a *tree,* as tall as a man. Villars deſcribes it as a trailing *ſhrub,* with a thick, crooked *ſtem.* The *branches* are reddiſh, ſilky only when young. *Leaves* two or three inches long, and one broad, clothed with peculiarly delicate and ſilky ſhaggy hairs, on both ſides; the under ſide glaucous, with a reddiſh rib. *Catkins* ſtalked, cylindrical; the males yellow, ſilky, about an inch long; the females twice that length, rather lax, much more ſlender than in *S. lanata,* and eſſentially diſtinguiſhed by their peculiarly woolly *germens.* The *ſtyle* is ſo enveloped in this wool, that we can hardly determine its preciſe length, but it ſeems even ſhorter than the *ſtigmas,* the latter being remarkably long.

90. S. *arenaria.* Downy Mountain Willow. Linn. Sp. Pl. 1447. Fl. Lapp. ed. 2. 298. t. 8. f. *o, q.* Willd. n. 73. Fl. Brit. n. 28. Engl. Bot. t. 1809. (S. lapponum; Lightf. Scot. 604. S. n. 20; Gmel. Sib. v. 1. 164. t. 36. f. 1. S. helvetica; Villars Dauph. v. 3. 783.)—Leaves nearly entire, ovate, acute; reticulated and ſomewhat downy above; veiny, and denſely woolly, beneath. Germen ſeſſile, very woolly. Style about the length of the deeply ſeparated, linear, divided ſtigmas.—Native of the Lapland

woods, and of the Scottiſh, German, Swiſs, Italian, and French alps, flowering in May. The *ſtem* is ſtout, buſhy, two or three feet high; with reddiſh-brown twigs, finely downy when young. *Leaves* about an inch and half long, and half as wide, entire, or ſlightly waved, ſomewhat revolute; dark green above, reticulated with ſunk veins; white with cottony depreſſed down, the veins prominent, beneath. *Footſtalks* rather longer in proportion than in *S. glauca*, broad at the baſe, and not decurrent. *Stipulas* none. Flowering *buds* large, gibbous. Male *catkins* ovate, ſoon becoming cylindrical, an inch long, their *ſcales* clothed with copious, long, ſilky hairs. *Stamens* two, ſmooth. Female *catkins* twice as long, rather ſlender though denſe. *Capſules* nearly ſeſſile, ovate, woolly. *Style* and *ſtigmas* ſlender. We are now enabled to remove a doubt expreſſed in Engl. Bot. p. 2586; for the exotic ſpecimen deſcribed as *arenaria*, at p. 1809 of that work, is really ſuch, and not *S. Stuartiana*. *S. arenaria* may always be known from all its near relations, by the reticulations of the *leaves*, and their ovate ſhape.

91. S. *obovata*. Obovate Labrador Willow. Purſh n. 11.—"Stem diffuſe. Leaves obovate, obtuſe, entire; ſmooth above; clothed with ſilky hairs beneath. Stipulas none. Catkins ſeſſile. Scales obovate; black and hairy at the end."—Native of Labrador, and of the north-weſt coaſt of America, flowering in May. Allied to *S. arenaria*, and ſomewhat inclined to be upright. *Stamens* two. *Purſh.*

92. S. *planifolia*. Flat-leaved Labrador Willow. Purſh n. 12.—"Stem aſcending, divaricated; branches ſmooth. Leaves oblong-lanceolate, very ſmooth, flat, ſpreading; acute at each end; minutely ſerrated in the middle; paler beneath. Stipulas none."—Native of Labrador. Seen by Mr. Purſh in Mr. Anderſon's garden, without *flowers*. "This ſingular ſpecies diſtinguiſhes itſelf at firſt ſight by its remarkable plain and patent *leaves*. It is inclined to riſe from the ground on a ſingle low *ſtem*." *Purſh.*

93. S. *appendiculata*. Auricled Willow. Fl. Dan. t. 1056. Willd. n. 74.—"Leaves ovate-oblong, entire, villous; ſomewhat downy beneath. Stipulas lanceolate, permanent, oblong, entire. Germen oblong-lanceolate, downy. Stigmas ſeſſile."—Native of Finmark. The *leaves* are not at all ſhining beneath; in a young ſtate they are downy in that part; when full-grown hoary. *Capſules* downy. *Willdenow.*

94. S. *cinerea*. Grey Willow. Linn. Sp. Pl. 1449. Fl. Suec. ed. 2. 353. Fl. Lapp. ed. 2. 296, excluſive of Villars's ſynonym. Willd. n. 75. Fl. Brit. n. 34. Engl. Bot. t. 1897. (S. daphnoides; Villars Dauph. v. 3. 765. t. 50. f. 7; bad.)—Stem erect. Lower leaves entire; upper more or leſs ſerrated, obovato-lanceolate; reticulated with veins, glaucous and downy beneath. Stipulas half-heart-ſhaped, ſerrated. Germen lanceolate, ſtalked, ſilky. Style as long as the blunt ſtigmas.—Native of moiſt marſhy woods, in Lapland, Sweden, England, and France. We have it from Norfolk, Surrey, and other places, and have compared our ſpecimens carefully with thoſe of Linnæus and Villars. A living plant from the Cambridge garden has furniſhed us with female flowers. This is a ſmall crooked *tree*, of no particular uſe, bloſſoming in April, before the *leaves* appear. It is moſt allied to *S. aquatica* hereafter deſcribed, but differs in the greater firmneſs and thickneſs of its *leaves*, and larger *catkins*. The *ſtem* is more erect and arboreous, the *germen* more ſlender, and the *ſtyle* longer. Willdenow's deſcription differs in ſome points from our plant.

95. S. *Jacquiniana*. Brown Auſtrian Willow. Willd. n. 77. (S. Jacquini; Hoſt. Syn. 529. S. fuſca; Jacq. Auſtr. v. 5. 4. t. 409.)—"Leaves elliptical, entire, tapering at each end, poliſhed; the veins beneath, as well as the margin, hairy. Germen elliptical, downy. Style elongated."—Native of the Auſtrian alps, flowering in May. The *root* is very long, thick and woody. *Stems* diffuſe; the young *branches* downy. *Leaves* uſually near an inch in length, fringed with long hairs; reticulated with veins beneath. *Footſtalks* rather ſhort. *Stipulas* large, oblong, ſerrated towards the extremity, reticulated, according to Willdenow; though Jacquin neither figures nor mentions them. Male *catkins* ſtalked, elliptical, yellow, diandrous, not an inch long; female longer, on longer ſtalks, erect, brown, rather lax. *Germen* ſeſſile, clothed with cloſe hairs. Very different from *S. fuſca* of Linnæus and Fl. Brit.

96. S. *Muhlenbergiana*. Brown American Willow. Willd. n. 78. Purſh n. 3. (S. triſtis; Muhlenb. in Sims and Kon. Ann. of Bot. v. 2. 68. t. 5. f. 9. S. alpina; Walt. Carol. 243.)—"Leaves lanceolate, ſharpiſh, nearly entire, downy, revolute; veiny and rugoſe beneath. Stipulas lanceolate, deciduous. Scales of the catkins oblong, fringed. Germen ovato-lanceolate, ſilky, ſtalked. Style ſhort. Stigmas divided."—In dry ſhady woods, from New York to Virginia, flowering in April. From three to five feet high; the *branches* greeniſh-yellow, with black dots. *Anthers* purple; yellow when burſt. *Scales* white, tipped with red, giving the *catkins* a very pleaſing appearance. *Purſh.*

97. S. *triſtis*. Narrow-leaved American Willow. Ait. n. 41. Willd. n. 79. Purſh n. 4.—"Leaves linear-lanceolate, entire, revolute, acute at each end; ſmoothiſh above; rugged with veins, and downy, beneath. Stipulas none. Catkins before the leaves, oblong."—In dry ſandy woods, from New Jerſey to Carolina, flowering in March or April. Approaches near to the preceding. *Purſh.* Introduced at Kew by Mr. William Young, in 1765.

98. S. *argentea*. Silky Sand Willow. Fl. Brit. n. 29. Engl. Bot. t. 1364. Willd. n. 80. (S. arenaria; Lightf. Scot. 604. S. lanata; Roth. Germ. v. 1. 418. 2. p. 2. 513. S. pumila, foliis utrinque candicantibus et lanuginoſis; Dill. in Raii Syn. 447. t. 19. f. 3.)—Leaves entire, elliptical, ſomewhat revolute, with a recurved point; rather downy above; ſilky and ſhining beneath, as well as the branches. Germen ſtalked, ovato-lanceolate, ſilky. Style ſhorter than the ſtigmas.—Native of ſandy ground in Germany and England. With us it occurs chiefly among looſe blowing ſand on the ſea-ſhore, flowering in May, before the leaves come out. The *ſtems* are moſtly ſpreading, but in ſheltered ſpots will riſe to the height of four or five feet. The *leaves* are about an inch long, and two-thirds as broad, conſpicuous for the ſilvery brilliancy of their under ſurface, and rivalling ſome of the moſt beautiful Cape ſhrubs in that particular. The upper ſide of the full-grown *leaves* is finally ſmooth. *Stipulas* variable in ſize, flat, ovate, entire, ſilky. *Footſtalks* rather ſhort. *Catkins* at firſt ſeſſile and naked, appearing before the foliage, cylindrical, obtuſe, an inch long. *Stamens* two, yellow, ſmooth. *Scales* long, narrow and obtuſe, hairy, tipped with black. *Capſules* finally ſmooth, on very long ſtalks. Extremely different from *S. arenaria*, n. 90, to which Linnæus referred the ſynonym of Dillenius, and thus miſled Britiſh writers.

99. S. *recurvata*. Drooping-flowered American Willow. Purſh n. 5.—"Leaves obovato-lanceolate, acute, ſmooth, entire; glandular at the margin; glaucous beneath; the young ones ſilky. Stipulas none. Catkins before the leaves, recurved. Germen ovate, ſilky, ſomewhat ſtalked, the length of the hairs of the ſcales. Style very ſhort. Stigmas divided."—In ſhady woods, among the mountains of New Jerſey and Pennſylvania, flowering in April. A

low *ſhrub*; *branches* brown, ſmooth; *buds* yellow. *Scales* of the *catkins* tipped with black. *Purſh.*

100. S. *repens*. Creeping Dwarf Willow. Linn. Sp. Pl. 1447. Willd. n. 81. Fl. Brit. n. 32. Engl. Bot. t. 183. Purſh n. 6. (S. depreſſa; Hoffm. Sal. v. 1. 63. t. 15, 16.)—Leaves elliptic-lanceolate, ſtraight, ſomewhat pointed, nearly entire; almoſt naked above; glaucous and ſilky beneath. Germen ſtalked, ovate, downy. Stem depreſſed.—Found copiouſly on ſandy heaths in Sweden, Germany, France and Britain, flowering in March or April, two or three weeks earlier than any other of our dwarf Willows. Mr. Purſh ſaw ſpecimens, in the Bankſian herbarium, from Nova Scotia and Newfoundland, which he referred to this ſpecies. The *ſtems* are creeping, moſtly proſtrate and entangled, ſome of the flowering *branches* only being occaſionally upright. *Leaves* uſually quite entire, but we have ſeen them ſparingly toothed, in luxuriant garden ſpecimens. *Stipulas* none. *Catkins* before the leaves, ſhort, obovate; their *ſcales* obovate, reddiſh, enveloped in long white hairs. *Stamens* ſmooth, with yellow *anthers*. *Germen* moderately ſtalked. *Style* the length of the blunt divided *ſtigmas*. *Capſule* ſmooth when ripe, its valves very much revolute. The *leaves* vary in ſize, and the whole plant is more or leſs brown, according to its expoſure. Willdenow refers Ehrhart's *polymorpha*, Arb. 49, to this ſpecies; ſee *proſtrata*, n. 105.

101. S. *fuſca*. Browniſh Dwarf Willow. Linn. Sp. Pl. 1447. Fl. Lapp. ed. 2. 299. t. 8. f. *r*. Fl. Suec. ed. 2. 351. Willd. n. 82. Fl. Brit. n. 31. Engl. Bot. t. 1960.—Leaves elliptic-oblong, acute, ſtraight, flat, with a few glandular teeth; glaucous and ſilky beneath. Footſtalks ſlender. Stem erect, much branched. Stipulas none.—Native of moiſt mountainous heaths in Lapland, Sweden, Germany, and the north of Britain, flowering in April or May. This differs from the laſt in its upright, buſhy, not creeping, *ſtem*, with copious dark *branches*, hoary when young. The *leaves* are more toothed, with rather longer *ſtalks*. *Buds* large, ovate, red and ſhining. Male *catkins* ovate, ſhort, and denſe, with dark-brown, hairy, obtuſe *ſcales*. *Nectary* ovate, brown. *Anthers* red before they burſt. We have never obtained certain ſpecimens of the female plant. Linnæus certainly confounded ſome other ſpecies with this, which led him to deſcribe the *ſtem* as creeping.

102. S. *parvifolia*. Small-leaved Dwarf Willow. Engl. Bot. t. 1961. Ait. n. 43.—Leaves elliptical, nearly entire, with recurved points; glaucous and ſilky beneath. Stem decumbent. Stipulas ovate, entire.—Gathered by Mr. Crowe at Eaſt Winch, and Wrongay fen, Norfolk. After having cultivated it for many years, we have no doubt of the ſpecies being perfectly diſtinct. Yet we have not received from other parts of Europe any ſpecimens agreeing herewith. It flowers at the end of April, or beginning of May. The *ſtem* is much branched, entangled, decumbent, with wand-like twigs, twelve or eighteen inches long, either ſpreading obliquely, or procumbent, denſely clothed with innumerable leaves, round, thickiſh, hairy or ſilky. *Leaves* ſpreading or recurved, about half an inch long, broadly elliptical, on very broad and ſhort *ſtalks*; the margin ſlightly revolute, either quite entire, and marked here and there with a minute glandular tooth; the upper ſurface of a dull lightiſh green, paler than in either of the two laſt, and nearly ſmooth. *Buds* large, ovate, ſilky. *Stipulas* uſually preſent, but ſmall, hairy, tipped with a red gland. Female *catkins* before the leaves, ſeſſile, ovate, denſe, yellowiſh. *Germen* ovate, on a longiſh ſtalk, ſilky. *Style* very ſhort. *Capſule* nearly ſmooth. Living ſpecimens of this plant, ſhut up for two or three days in a tin box, acquire an intolerably fetid fiſh-like ſcent, which we have obſerved in no other Willow except the following.

103. S. *adſcendens*. Aſcending Dwarf Willow. Engl. Bot. t. 1962. Ait. n. 44.—Leaves elliptic-oblong, ſomewhat ſerrated, with recurved points; glaucous and ſilky beneath. Stem aſcending. Stipulas ovate, ſerrated.—Native of moiſt heathy ſandy places, in Norfolk and other parts of England, flowering in May. About twice as large as the laſt, with leſs crowded *leaves*, not ſo ſtrikingly recurved. The *ſtem* is creeping and low, with long, ſtraight, obliquely aſcending, twigs. Female *catkins* and *flowers* much like the laſt, and the ſmell of the plant is ſimilar. Male *catkins* ovate, ſeſſile, yellow; their *ſcales* edged with brown, and fringed with hairs.

104. S. *Schraderiana*. Schraderian Willow. Willd. n. 83. (S. diſcolor; Schrad. Hort. Gotting. MSS.)—Leaves elliptical, acute, finely downy on both ſides; glaucous beneath; ſlightly ſerrated towards the point. Stipulas very ſmall. Catkins rather before the leaves, ovate, hairy.—Native of Germany. A much ſtouter more upright plant than ſeveral of the preceding, approaching in habit, and ſize of *leaves*, to *S. Croweana* and *bicolor*; ſee n. 51 and 19. But the foliage is always more or leſs clothed, on both ſides, with ſilky hairs, and the two *ſtamens* are diſtinct. The *footſtalks* are ſlender, elongated, ſometimes with two minute rounded *ſtipulas*, or in their ſtead a pair of glands, at the baſe.

105. S. *proſtrata*. Proſtrate Dwarf Willow. Fl. Brit. n. 30. Engl. Bot. t. 1959. Willd. n. 84. (S. polymorpha; Ehrh. Arb. 49?)—Leaves elliptical, acute, convex, rarely toothed; glaucous, rugged and ſilky beneath. Stem proſtrate. Branches elongated, ſtraight. Germen ſtalked, ovate, ſilky. Style ſhorter than the ſtigmas.—Native of Scotland; according to Mr. Dickſon, flowering in May or June. Mr. E. Forſter found the ſame near High Beeeh, on Epping foreſt; and profeſſor Willdenow mentions it as growing alſo in Sileſia. Ehrhart's *polymorpha* was gathered at Hanover; but this laſt is conſidered as doubtful, at leaſt, if not certainly different; ſee n. 100. The *ſtems* of our plant form an entangled mat, moſt of the *branches* being very long, tough, ſtraight, and ſlender, ſpreading very widely, cloſe to the ground, a few ſhort ones only ſtanding erect. All are leafy, round, finely downy when young. *Leaves* rather diſtant, an inch long, dark above, on ſhortiſh thick *ſtalks*, accompanied by a pair of glands, rarely two ſmall *ſtipulas*, as in the laſt. *Catkins* ovate, obtuſe, denſe, ſilky; the parts of the female ones much agreeing with *parvifolia*, *adſcendens*, &c.

106. S. *hirſuta*. Hairy Cape Willow. Thunb. Prodr. 6. Fl. Cap. v. 1. 141. Willd. n. 85.—"Leaves entire, ovate, pointed, without ſtipulas, hairy on both ſides. Stamens five or ſix. Gathered at the Cape of Good Hope by Thunberg. A *tree*, ſix feet high, with a rugged, purpliſh, ſmooth bark. *Branches* erect, wand-like. *Leaves* on the extreme ſhoots, hardly an inch long, on very ſhort ſtalks, obovate, obtuſe with a point, clothed on both ſides with white hairs. *Catkins* cylindrical, ſhorter than the leaves; their *ſcales* woolly. *Thunb.*

107. S. *pyrenaica*. Pyrenean Willow. Gouan. Illuſtr. 77, excluding the ſynonyms. Willd. n. 86.—Leaves elliptical, entire, acute at each end, reticulated with veins; glaucous beneath; moſt hairy at the margin. Germen ſomewhat ſtalked, ovato-lanceolate, villous. Style the length of the deeply divided ſtigmas. Very plentiful on the Pyrenean mountains, near perpetual ſnow. *Gouan*. We have a ſpecimen from himſelf, and another from M. de St. Amans; the latter named *glauca*; but we know not whether this ele-

gant naturaliſt has noticed it, as ſuch, in any of his writings. The *ſtems* are quite proſtrate, branched, ſmooth. *Leaves* full an inch long, and nearly half an inch wide; bright green and ſhining above; remarkably woolly about the margin, which gives them a peculiar and characteriſtic aſpect. When young they are very hairy all over. *Footſtalks* broad, channelled, rather ſhort, ſmooth, yellowiſh, without *ſtipulas*. Female *catkins* two inches long, ſlender, rather lax, on leafy ſtalks. *Scales* linear-obovate, long, fringed with copious long hairs. *Germens* extending rather beyond the ſcales, clothed with ſimilar hairs. *Stigmas* long, linear. This is a diſtinct and well-marked ſpecies, but Gouan has much perplexed its ſynonyms, and poſſibly confounded different things in his deſcription, of which therefore we have made no uſe in our's.

108. S. *incubacea*. Trailing Willow. Linn. Sp. Pl. 1447. Fl. Suec. ed. 2. 351. Willd. n. 89. Ait. n. 50. (S. anguſtifolia; Wulf. in Jacq. Coll. v. 3. 48. S. pumila anguſtifolia prima; Cluſ. Hiſt. v. 1. 85, 86. S. pumila altera; Dod. Pempt. 844. Chamæitea, ſive Salix pumila; Ger. Em. 1391.)—Leaves lanceolate, pointed, ſtraight, ſomewhat elliptical, entire, convex; ſmooth above; glaucous and ſilky beneath. Catkins oval, erect. Germen ſtalked, lanceolate, tapering, ſilky. Style the length of the ſtigmas.—Native of moiſt ſandy ground in Germany, Sweden, and Switzerland. This is one of the moſt difficult ſpecies to underſtand or define. Linnæus having deſcribed it with ovate acute *ſtipulas*, not viſible in any ſpecimens that we could refer to *incubacea*, nor in his own herbarium, has always cauſed ſome uncertainty in our opinion. His ſpecimen, moreover, though named and numbered by himſelf, is not one of thoſe authentic ones, either gathered in Sweden, or deſcribed in the firſt edition of Sp. Pl. Willdenow however, without any communication with us, underſtands the ſpecies as we do, as appears by his referring to it Wulfen's *anguſtifolia*, which we alſo have ever conſidered as a narrow-leaved variety of the Linnæan *incubacea*. The *leaves* vary indeed from a line to half an inch in width, and from an inch to an inch and a half in length. They are ſtraight; ſilvery beneath when young, though far leſs ſo than in *argentea*, n. 98. The *ſtems* are moſtly creeping and decumbent, but this character varies. Female *catkins* but half the length of the males. *Capſules* light reddiſh-brown, downy, taper-pointed. The reſt of the characters may be found in our ſpecific definition. We have never met with an Engliſh ſpecimen of this Willow.

109. S. *roſmarinifolia*. Roſemary-leaved Willow. Linn. Sp. Pl. 1448. Fl. Suec. ed. 2. 352. Willd. n. 90. Purſh n. 15. Fl. Brit. n. 33. Engl. Bot. t. 1365. Ehrh. Arb. 119. (S. pumila, rhamni ſecundi Cluſii folio; Dill. in Raii Syn. 447. S. humilis repens anguſtifolia; Lob. Ic. v. 2. 137.)—Leaves linear-lanceolate, pointed, ſtraight, entire; ſilky beneath. Stem erect. Stipulas upright, flat. Catkins recurved. Germen ſtalked, lanceolate, ſilky.—Native of moiſt ſandy or turfy places, in Sweden, Germany, and the northern parts of Britain, flowering in April. Mr. Purſh, finding it likewiſe "in wet meadows and mountain ſwamps, from Pennſylvania to Carolina," preſumes that it has been imported from thence into England. Our ſpecimens however accord exactly with the Finland ones of Linnæus, and the German one of Ehrhart; ſo that it ſeems common to both quarters of the world. The *ſtem* forms an elegant buſh, a yard high. The narrow *leaves*, ſometimes accompanied by very conſpicuous *ſtipulas*, diſtinguiſh it from moſt, but the ſhort recurved female *catkins* are, as far as we know, abſolutely peculiar to this ſpecies, (the following one excepted,) as was firſt pointed out in Engl. Bot. Willdenow juſtly notices the near relationſhip of this ſpecies to the laſt, which evinces his knowledge of both; but we do not find that difference which he indicates in the length of their *ſtyles*.

110. S. *fuſcata*. Sooty-branched Willow. Purſh n. 16.—"Leaves obovato-lanceolate, acute, ſomewhat ſerrated; glaucous beneath; downy when young. Stipulas minute. Catkins drooping. Scales obtuſe, ſcarcely hairy on the inſide. Germen ſomewhat ſtalked, ovate, ſilky. Stigmas ſeſſile, two-lobed."—In low overflowed grounds, on the banks of rivers, from New York to Pennſylvania, flowering in March or April. *Branches* of the preceding year covered with a dark brown, or black, *tomentum*. *Purſh*. As the adult *leaves* are ſaid to be ſmooth, this ſpecies ought perhaps to have found a place in the firſt ſection; but Mr. Purſh having inſerted it next to *roſmarinifolia*, we have followed his example, particularly on account of the drooping *catkins*. We have ſeen no ſpecimen.

111. S. *riparia*. Mountain-river Willow. Willd. n. 91. (S. roſmarinifolia; Hoſt. Syn. 529. S. viminalis; Villars Dauph. v. 3. 785.)—"Leaves linear-lanceolate, with ſmall glandular teeth; entire at the baſe; clothed with cloſe-preſſed hairs above; downy, and rugged with veins, beneath. Germen ovate, ſmooth."—Native of the ſandy banks of rivers, in the mountainous parts of Auſtria, Hungary, Dauphiny, and the Tyrol. The ſynonyms depend on the authority of Willdenow, who deſcribes this ſpecies as a *ſhrub*, ſix feet high, with dark brown *branches*, downy when young. *Leaves* two inches long, pointed; green above, with a hoarineſs from the depreſſed hairs; ſnow-white beneath, like the *footſtalks*. *Stipulas* obſolete. *Catkins* before the leaves; the males yellow, an inch long; females brown, an inch and a half. *Style* ſhort, divided. *Stigmas* browniſh-purple, rather thick.

112. S. *anguſtifolia*. Narrow-leaved Caſpian Willow. Willd. n. 92. (S. caſpica; Pall. Roſſ. v. 1. p. 2. 74?)—"Leaves linear, very narrow, without ſtipulas, nearly entire; ovate at the baſe; hoary above; ſilky beneath."—Native of the country near the Caſpian ſea. *Branches* round, brown; ſilky when young. *Leaves* an inch and a half or two inches long, hardly a line broad; ſometimes furniſhed with a few ſcattered very diſtant glandular teeth; the upper ſide hoary with depreſſed hairs. *Footſtalks* dilated, ſmooth. Pallas's plant is ſaid to be ſmooth, otherwiſe his deſcription agrees exactly with the above. *Willdenow*.

113. S. *griſea*. Aſh-coloured American Willow. Willd. n. 93. Purſh n. 30. (S. ſericea; Muhlenb. in Sims and Kon. Ann. of Bot. v. 2. 67. t. 5. f. 8.)—Leaves lanceolate, pointed, ſerrated; ſmooth above; glaucous and ſilky beneath. Stipulas linear, deflexed, deciduous. Catkins before the leaves. Scales hairy. Germen ſtalked, oblong, ſilky. Stigmas nearly ſeſſile. In low overflowed grounds, from Pennſylvania to Virginia, flowering in April. About eight feet high. *Branches* greeniſh-purple, very brittle at the baſe. *Purſh*. *Leaves* two inches and a half long; three-quarters of an inch wide; veiny, the rib downy on the upper ſide. *Catkins* naked, half an inch or more in length, hairy, with black *ſcales*. *Anthers* finally black.

114. S. *ambigua*. Ambiguous Hannoverian Willow. Ehrh. Arb. 109. Willd. n. 94.—Leaves elliptical, rounded at each end, with a recurved point; finely downy above; denſely ſilky, and veiny, beneath; ſlightly ſerrated at the extremity. Stipulas half-heart-ſhaped. Catkins elliptical.—Native of Hanover. A ſmall *ſhrub*, with brown downy *branches*. *Leaves* about an inch long, rigid, ſomewhat revolute and thick-edged, for the moſt part entire, on ſhort, thick, downy *ſtalks*; the upper ſide green, and

apparently ſmooth, but proving on minute inſpection finely downy; the under clothed with ſhaggy ſilky hairs. *Buds* thick, two-edged. *Stipulas* rather ſmall, toothed; ſilky beneath. Male *catkins* naked, yellow, hairy, above half an inch long. This ſeems to us very diſtinct; though akin to the Sallow tribe.

115. S. *ſpathulata.* Spatulate Willow. Willd. n. 95.—"Leaves lanceolate-obovate, with a recurved point; ſerrated at the end; clothed with depreſſed hairs above; rugged, veiny, and downy beneath. Stipulas lanceolate."—Native of Germany. A *ſhrub* five feet high, with brown downy *branches.* *Leaves* an inch or an inch and a half long, ſomewhat ſpatulate; of a hoary green above; covered with hoary, or ſomewhat ſilky, down beneath. *Stipulas* half the length of the *footſtalks.* Male *catkins* before the leaves, cylindrical, half an inch long. *Willdenow.*

116. S. *uliginoſa.* Bog Willow. Willd. Enum. 1007.—"Leaves obovate, with a recurved point; with wavy ſerratures at the end; green and downy above; hoary and ſhaggy, with rugged veins, beneath. Stipulas half-heart-ſhaped, toothed. Capſules lanceolate, ſtalked. Stigmas nearly ſeſſile."—Native of marſhy ſituations in Europe. "This is uſually taken for a variety of the following, but it differs in having a conſiderably taller *ſtem,* with larger *leaves,* whoſe ſerratures are undulated."—Willdenow, whoſe remarks we here adopt, without having any means of judging for ourſelves, ſays the ſpecific character he has given for *aurita,* in his Sp. Pl., belongs to the preſent plant. In his *Enumeratio Hort. Berol.* he deſcribes *aurita* as only two feet high. Hence we conjecture that his *uliginoſa* may be our *aurita,* and his *aurita* our variety β of the latter. In this uncertainty we ſhall deſcribe that ſpecies as we underſtand it, from long and repeated obſervations.

117. S. *aurita.* Round-eared, or Trailing, Sallow. Linn. Sp. Pl. 1446. Fl. Lapp. ed. 2. 303. t. 8. f. *y.* Willd. n. 96. Enum. 1007? Fl. Brit. n. 35. Engl. Bot. t. 1487. Ehrh. Arb. 39. Hoffm. Sal. v. 1. 30. t. 22. f. 1. (S. caprea δ; Hudſ. 430.)—β S. caprea pumila, folio ſubrotundo, ſubtùs incano; Dill. in Raii Syn. 450.

Leaves ſomewhat ſerrated, obovate, obtuſe, with a ſmall hooked point; hairy and reticulated with veins on both ſides. Stipulas various. Stigmas nearly ſeſſile.—Abundant in rather moiſt upland woods, and more eſpecially in the thickets or hedges of mountainous countries, in Britain and other parts of Europe; flowering in April or May, when the leaves are juſt budding. This *ſhrub* varies in height from two to five feet, but is generally in all its parts about half the ſize of the following, and is readily known by the great ruggedneſs, convexity, and criſped borders of the *leaves,* which are of a dull green, very hairy, but not hoary; the under ſide paler, and ſlightly glaucous. The *branches* ſhoot horizontally amongſt other buſhes, to a great extent, whence the Norfolk name of Trailing Sallow, communicated by Mr. Crowe. *Stipulas* often very large, concealing the *footſtalks,* roundiſh, convex, cut and toothed. *Catkins* about an inch long, nearly ſeſſile, naked, elliptical, rather hairy. *Stamens* two. *Germen* ſtalked, ovate, or ovato-lanceolate, with two thick ſeſſile *ſtigmas,* as uſual in the Sallows, which agree too nearly in all the parts of fructification, except the comparative ſize of their *catkins,* to afford ſpecific characters from thence. The variety, as we judge it, is a ſmall, leſs ſpreading, buſh, with blunt leaves, about half an inch, or ſomewhat more, in length.

118. S. *aquatica.* Water Sallow. Fl. Brit. n. 36. Engl. Bot. t. 1437. Willd. n. 97. (S. caprea α; Hudſ. Angl. 429. S. cinerea; With. 54. Relh. Cantab. 387. S. aurita; Hoffm. Sal. v. 1. t. 5. f. 3.)—Leaves ſlightly ſerrated, obovate-elliptical, downy, flat; rather glaucous beneath. Stipulas rounded, toothed, ſtigmas nearly ſeſſile.—Common in wet hedges and woods, about ponds and the banks of rivers, in England and Germany, flowering in April. It is larger than the laſt, often riſing to a ſmall *tree.* The *leaves* are larger, more pliant, and leſs rugged, not ſo ſtrongly ſerrated; their under ſide glaucous; both ſides more or leſs covered with ſhort hairs or down, often ruſty. *Catkins* almoſt twice the ſize of *aurita,* nearly cylindrical, with brown-tipped hairy *ſcales,* as in that, and all the parts of fructification nearly ſimilar. Mr. Dillwyn and Mr. J. Woods have found, near London, a ſtrangely metamorphoſed variety, in whoſe female *catkins* the ſtalks of ſome of the *germens* are greatly elongated, and ſuch *germens* themſelves diminiſhed into bodies that look like *anthers.* Some of them bear actual *anthers.* Could it be ſuch a monſter as this which cauſed the idea alluded to by Linnæus, (after the generic character,) of Willows having been thought to change their ſexes? We have never examined ſuch a ſpecimen in a living ſtate, nor do we pretend to underſtand it.

119. S. *oleifolia.* Olive-leaved Willow. Fl. Brit. n. 37. Engl. Bot. t. 1402. Willd. n. 98.—Leaves obovato-lanceolate, flat, rather rigid, minutely indented, acute; underneath glaucous and hairy. Stipulas ſmall, notched. Catkins elliptical.—Common in hedges and coppices in Norfolk, and other parts of Britain, flowering in March, being one of the earlieſt of our native Willows. We cannot clearly refer to this any ſynonyms of authors; moſt botaniſts having, as we conceive, neglected it as a form of the Common Sallow, *S. caprea.* Theſe two ſpecies indeed agree, as they differ from all others of Britiſh growth, in the great ſize of their *flower-buds* and *catkins,* by which they may always be known. The *catkins* of the *oleifolia* are an inch and a half long, and very thick, quite oval; their *buds* twice as thick as thoſe of *aquatica.* But the *leaves* of the ſpecies before us differ totally from the round, pliant, ſtrongly ſerrated, downy foliage of the *caprea,* being erect, rigid or coriaceous, oblong, and rather ruſty or hairy than downy. *Stipulas* rounded, vaulted or reflexed, often cloven.

120. S. *cotinifolia.* Quince-leaved Willow. Fl. Brit. n. 38. Engl. Bot. t. 1403. Willd. n. 99. (S. ſpadicea; Villars Dauph. v. 3. 777, from the author.)—Leaves elliptical, almoſt circular, ſlightly toothed; downy, with rectangular veins, beneath. Style as long as the notched ſtigmas.—Found by Mr. Dickſon in the north; by Mr. Crowe in Norfolk; and by M. Villars in Dauphiny. It flowers in April, and is very remarkable for its round *leaves,* much reſembling thoſe of a quince-tree. The *ſtem* is from three to ſix or eight feet high, with ſpreading, finely downy, velvety *branches.* *Leaves* on thick hairy *ſtalks,* ſpreading, thick and firm, nearly an inch and a half long, flat, ſlightly though regularly toothed, tipped with a ſmall point; dull green above, with little, flat, ſcattered hairs; pale or glaucous and downy beneath. They aſſume a lead-coloured hue in drying. *Stipulas* ſmall, rounded. Female *catkins* about half an inch long, ovate, with ſhort, blunt, black, hairy *ſcales.* *Nectary* ſhort, obtuſe. *Germen* on a ſhort ſtalk, ovate, downy. *Style* and *ſtigmas* very different from the true Sallows, the *ſtigmas* being linear, with a blunt notched termination, and the *ſtyle* equal to them in length.

121. S. *hirta.* Hairy-branched Willow. Engl. Bot. t. 1404. Willd. n. 87. Ait. n. 48.—Leaves elliptic-heart-ſhaped, pointed, finely notched, downy on both ſides. Stipulas half-heart-ſhaped, flat, toothed, nearly ſmooth. Branches hairy.—Found by Mr. Crowe in Norfolk. A ſmall *tree,* bloſſoming in April, or early in May, moſt allied to the two laſt

ſpecies. The *branches* are thick, remarkably hairy, with crowded, prominent, horizontal, not depreſſed, pubeſcence. *Leaves* two inches long, of a broad, elliptical form, tipped with a ſmall point; their baſe more or leſs heart-ſhaped, being uſually cut away, as it were, up to the firſt pair of tranſverſe veins. The edges are furniſhed with numerous ſhallow notches, rather than teeth or ſerratures; the upper ſide is of a dulliſh green; the under pale or glaucous, with a very hairy rib, and fine downy veins. *Footſtalks* rather long and ſtout, very hairy. *Stipulas* large, rounded, nearly ſmooth, ſtrongly contraſted, in this laſt reſpect, with the rough branches. We have ſeen male *catkins* only, which are yellowiſh, ſeſſile, an inch or more in length, coming before the foliage, and compoſed of blackiſh, lanceolate, hairy *ſcales*. *Nectary* pitcher-ſhaped. *Stamens* two, diſtinct, ſmooth, ſwelling upwards, twice the length of the ſcales. The *leaves* turn very black in drying.

122. S. *rupeſtris*. Silky Rock Willow. Donn. Cant. ed. 5. 231. Engl. Bot. t. 2342.—Leaves obovate, ſerrated, flat, even, ſilky on both ſides. Stipulas hairy. Branches minutely downy. Germen ſtalked, awl-ſhaped, ſilky. Style as long as the undivided ſtigmas.—Gathered by Mr. W. Borrer, on the rocks of Craig Challoch and Mael Ghyrdy in the highlands of Scotland. We have it alſo from Mr. G. Anderſon. This is a trailing or depreſſed *ſhrub*, and, as far as we are able to judge, very diſtinct from all the foregoing. It flowers in April. The *branches* are covered with ſimilar pubeſcence to thoſe of *S. hirta*, but finer and ſhorter. The whole *plant* turns black, like that ſpecies, in drying. The *leaves* are about an inch long, acute at each end, veiny, but not wrinkled, with fine ſhallow ſerratures; their under ſide eſpecially ſilky, and rather glaucous. *Stipulas* ſmall, ovate, acute, hairy, often wanting. *Catkins* ovate and thick, hardly an inch long, accompanied by ſmall leaves, which are very ſmooth on their upper ſurface; the female ones ſoon elongated and cylindrical. *Scales* obovate, hairy; their upper half black. *Stamens* two, thread-ſhaped, ſmooth. *Nectary* papillary. *Style* cloven, at leaſt as long as the thick undivided *ſtigmas*.

123. S. *Anderſoniana*. Green Mountain Sallow. Engl. Bot. t. 2343.—Leaves elliptic-oblong, acute, finely notched, ſlightly downy; paler beneath. Stipulas half-ovate, nearly ſmooth. Branches minutely downy. Germen ſtalked, ſmooth. Style as long as the cloven ſtigmas.—Found in Breadalbane, and various other parts of Scotland, flowering in May. We are obliged to the liberal and intelligent friend, with whoſe name we have inſcribed this ſpecies, for living ſpecimens. It forms a conſiderable *buſh*, or ſmall *tree*. The *branches*, green the firſt year, are afterwards of a ſooty brown; at all times clothed with denſe, ſhort, curved down. *Leaves* on ſhortiſh downy *ſtalks*, an inch, or inch and half, long, flat, of a bright pleaſant graſs-green, more or leſs downy on both ſides, eſpecially the rib and veins, with ſhort hairs; the very young ones ſilky. *Stipulas* ſmall, toothed, at length vaulted. Female *catkins* (we are unacquainted with the male) ſhort, ovate, with entirely black hairy *ſcales*; the floral *leaves* almoſt as long as the *catkin*; nor does the length of the latter, even when diſcharging its ſeeds, much exceed an inch. *Germen* on a longiſh ſmooth ſtalk, ovate, taper-pointed, round, quite ſmooth and naked, a very rare circumſtance among the tribe of *Salices*, to which this ſpecies is moſt nearly related. *Style* awl-ſhaped, divided half way down, as are alſo the *ſtigmas*.

124. S. *Forſteriana*. Glaucous Mountain Sallow. Engl. Bot. t. 2344.—Leaves elliptic-obovate, acute, notched, ſlightly downy; glaucous beneath. Stipulas vaulted. Branches minutely downy. Germen ſtalked, ſilky. Style longer than the thick undivided ſtigmas.—Not rare in Scotland, from whence Mr. Forſter of Clapton long ago obtained it, and ſupplied us with ſpecimens as well as living plants; by repeated attention to which we have quite ſatisfied ourſelves of the diſtinctneſs of the ſpecies. It flowers in April or May, and is a larger *ſhrub* than the laſt, with larger firmer *leaves*, though ſhining above, and glaucous beneath; in drying they aſſume a purpliſh-black tint. Their pubeſcence is extremely ſlight, except on the midrib and *footſtalks*, where it is denſe, though very ſhort. *Stipulas* toothed, rather hairy. Female *catkins* an inch long when in bloſſom, afterwards twice as much, but their *floral leaves* do not exceed thoſe of the laſt. *Germen* ovate, tapering, with a longiſh ſmooth *ſtyle*, repreſented rather too ſhort in *Engl. Bot.*

125. S. *ſphacelata*. Withered-pointed Willow, or Sallow. Fl. Brit. n. 39. Engl. Bot. t. 2333. Willd. n. 100. Ait. n. 56. (S. lanata; Lightf. Scot. 602. S. capreæ varietas; Hoffm. Sal. v. 1. 28. t. 5. f. 4. t. 21. f. *d*.)—Leaves entire, elliptical, acute, even; downy on both ſides; ſomewhat withered at the point. Stipulas obſolete. Germen lanceolate, ſilky, on a long hairy ſtalk. Stigmas nearly ſeſſile.—Native of the mountains of Scotland; and, according to Willdenow, of Carinthia. We have, moreover, ſpecimens gathered by the late Mr. Davall, in the road from Orbe, in Switzerland, to Montcherand. Linnæus had this plant in his herbarium, we know not from whence, confounded with *S. caprea*. From that ſpecies it, nevertheleſs, eſſentially differs, being leſs arboreous; its *leaves* but one and a half, or two inches, long, almoſt always perfectly entire, thin and delicate, not at all rugoſe; their points often remarkably blaſted, as it were; their upper ſurface finally becoming ſmooth towards the end. *Stipulas* ſmall or none. *Catkins* cylindrical and elongated; not ſhort, thick and tumid. *Nectary* ſtalked, compreſſed. *Germen* regularly tapering upward, at length nearly ſmooth. *Stigmas* undivided, or ſlightly notched. This ſeems to be rather a mountain ſpecies, flowering in April or May. We have never ſeen it living.

126. S. *caprea*. Great Round-leaved Sallow. Linn. Sp. Pl. 1448, *α*. Willd. n. 101. Fl. Brit. n. 40. Engl. Bot. t. 1488. Hoffm. Sal. v. 1. 25. t. 3. f. 1, 2. t. 21. f. *a*, *b*, *c*. Ehrh. Arb. 98.—Leaves ovate, pointed, ſerrated, waved; downy beneath. Stipulas ſomewhat creſcent-ſhaped. Germen ovate, downy, on a long hairy ſtalk. Stigmas undivided, nearly ſeſſile. Common throughout Europe, in rather dry than wet hedges, thickets and groves, bloſſoming in April, before the leaves unfold. This ſpecies grows to the ſize of a moderate tree, with ſpreading, brown or purpliſh, minutely downy *branches*. *Leaves* two or three inches long, and half as broad, acute, with wavy ſerratures; their under ſide rugoſe, and white, with cottony down. *Catkins* thicker and blunter than thoſe of any other Britiſh willow, except perhaps *oleifolia*; the males yellow, fragrant after rain, abounding with honey, as Hoffmann remarks. *Scales* brown, hairy. *Germen* on a long ſtalk. *Capſule* turgid. The *wood* and *branches* of this tree are particularly uſeful for making hurdles. The *bark* is bitter and aſtringent, ſuppoſed to poſſeſs a portion of the virtues of Peruvian bark; and certainly good for tanning.

127. S. *chryſanthos*. Golden-flowered Norway Willow. Fl. Dan. t. 1057. Willd. n. 102.—Leaves elliptical, acute at each end, entire, downy on both ſides. Stipulas ovate, entire. Style divided to the baſe.—Native of Finmark, as well as of the Norway alps. The *branches* appear by the *Flora Danica*, all we have to guide us, to be thick and

crooked ; *leaves* near three inches long, quite entire, hoary and downy. Male and female *catkins* thick, an inch and half long, their *ſcales* clothed with long, ſhining, golden-coloured hairs. *Stamens* two, tawny. *Germen* nearly ſeſſile, cylindrical. *Style* much longer than the divided *ſtigmas*, and very remarkable, if correctly delineated, for being itſelf divided to the very baſe.

128. S. *fagifolia*. Beech-leaved Willow. “Waldſt. and Kitaib. Pl. Rar. Hung.” Willd. n. 103.—“Leaves ovate-elliptical, with a glandular point, ſerrated ; entire at the baſe ; ſmooth above ; hairy at the veins beneath.—Native of the Croatian alps.—*Branches* brown ; downy when young. *Leaves* an inch and half long ; dark green above ; pale, and reticulated with hairy veins, beneath ; the whole under ſide hairy when young. *Stipulas* kidney-ſhaped, with glandular teeth. *Catkins* not obſerved. *Willdenow*.

129. S. *acuminata*. Long-leaved Sallow. Mill. Dict. ed. 8. n. 14. Fl. Brit. n. 41. Engl. Bot. t. 1434. Willd. n. 104. Hoffm. Sal. v. 1. 39. t. 6. f. 1, 2. (S. caprea latifolia ; Ger. Em. 1390.)—Leaves lanceolate-oblong, pointed, waved, ſlightly toothed ; downy beneath. Stipulas kidney-ſhaped. Germen ovate, ſilky. Style the length of the linear ſtigmas.—Native of woods and hedges in England and Germany, preferring a rather moiſter ſituation than *S. caprea*, of which it was formerly thought a variety, though they are doubtleſs as diſtinct as moſt ſpecies of any genus whatever. *S. acuminata* is a *tree* of conſiderable ſize, flowering early in April. *Branches* downy when young. *Leaves* ſtalked, three or four inches long, lanceolate, acute, often dilated a little above the middle ; the margin variouſly waved, with ſhallow ſerratures, moſt copious towards the point ; the ſmaller the *leaves*, the more they are commonly undulated or rugoſe ; the upper ſurface is ſmooth and green ; the under finely and cloſely downy, with parallel, curved, often reddiſh, *veins*. *Stipulas* half-ovate when young ; afterwards curved and kidney-ſhaped, toothed. *Catkins* longer, and not half ſo thick, as in *caprea*. *Scales* brown, hairy, ſometimes obtuſe. *Stamens* two, yellow. *Nectary* oblong, abrupt. *Germen* on a long ſtalk. We have two varieties, one a larger, more freely growing, tree than the other, with much larger and leſs crumpled, *leaves*, but we could never aſcertain a correct ſpecific difference between them.

130. S. *conifera*. Cone-bearing Willow. “Wangenh. Amer. 123. t. 31. f. 72.” Willd. n. 105. Arb. 347. Muhlenb. in Sims and Kon. Ann. of Bot. v. 2. 67. Purſh n. 17. (S. longiroſtris; Michaux Boreali-Amer. v. 2. 226.) —“Leaves oblong-lanceolate, acute, diſtantly ſerrated ; ſmooth above ; flat and downy beneath. Stipulas lunate, ſomewhat toothed. Germen ſtalked, lanceolate, ſilky. Style elongated, divided. Stigmas deeply cloven.”—In ſhady woods, on a gravelly dry ſoil, from New York to Carolina, flowering in April. The cone-like excreſcence at the ends of the branches, occaſioned by an inſect, is not unfrequent alſo on *S. prinoides* and other ſpecies. *Purſh*. The *branches* are brown ; downy when young. *Leaves* with minute, ſharp, diſtant ſerratures ; entire at the baſe ; dark green above ; flat, not rugged with veins, beneath, and late in autumn becoming almoſt ſmooth on that ſide likewiſe. *Footſtalks* long. *Stipulas* of a middle ſize, ſometimes entire. *Catkins* before the leaves, with lanceolate, extremely villous, *ſcales*. *Stigmas* four, cylindrical. *Willdenow*.

131. S. *obtuſifolia*. Blunt-leaved Lapland Willow. Willd. n. 106. (S. foliis oblongis, ſubtùs villoſis ; inferioribus crenatis; ſuperioribus integris; Linn. Fl. Lapp. ed. 2. 301. t. 8. f. *u*. S. caprea *β* ; Sp. Pl. 1448. S. oleæ ſylveſtris folio, alpina ; Rudb. Lapp. 99.)—Leaves oblong-lanceolate ; wedge-ſhaped at the baſe ; finely villous on both ſides ; glaucous beneath ; the upper ones acute and entire ; the lower bluntiſh, diſtantly toothed.—Frequent in the woods and on the mountains of Lapland. *Linnæus*. A ſlender *ſhrub*, not unfrequently arboreſcent. Young *branches* ſlender, clothed with long ſilky down. *Leaves* rather more than two inches long, three-quarters of an inch wide ; green, ſhining, ſlightly downy, above, with many curved parallel veins ; glaucous, not more downy, beneath. *Footſtalks* downy. It is very remarkable, that, contrary to the nature of moſt Willows, the lower blunter *leaves* of each branch are furniſhed with minute diſtant teeth, or ſhallow ſerratures ; while the upper and pointed ones are quite entire. No good botaniſt ever made a greater miſtake than Dillenius, when on inſpecting the plates of the Fl. Lapponica, before publication, he took the *leaf* of this ſpecies for that of *S. Helix*, and thought the teeth were hairs. The writer of the preſent article, in his edition of the laſt-mentioned work, perceived, by the original Lapland ſpecimen, that this was a diſtinct ſpecies from *caprea*, and on this ground Willdenow, though without mentioning him, has adopted and named it as above.—Except the teeth of the *leaves*, it comes nearer to *S. lapponum* than any other.

132. S. *cineraſcens*. Aſhy Portugueſe Willow. “Link. MSS.” Willd. n. 107.—“Leaves oblong-obovate, pointed, ſerrated ; hoary with down beneath. Capſules ſtalked, lanceolate, downy. Stigmas ſeſſile.”—Native of marſhes in Portugal. *Branches* round, brown ; downy when young. *Leaves* two inches or more in length ; green and ſlightly downy, finally almoſt naked, and ſhining, above ; reticulated with veins beneath. Male *catkins* four lines in length ; female half an inch. *Scales* oblong, villous. *Stigmas* broadiſh, cloven. *Stipulas* large, lunate, toothed. *Willdenow*.

133. S. *pedicellata*. Stalked Barbary Sallow. Desfont. Atlant. v. 2. 362. Willd. n. 108.—“Leaves lanceolate, rugoſe ; downy beneath. Capſules ſtalked, ſmooth.”—Found about rivers at Sbiba, in the kingdom of Tunis. Akin to *S. caprea*. *Leaves* obovate-oblong ; rugoſe and naked on the upper ſide ; grey and downy beneath. Stalk of the *capſule* about one line and a half long. *Desfontaines*. Smoothneſs of the *capſule* is ſo rare in the allies of *S. caprea*, that we cannot doubt the diſtinctneſs of this ſpecies.

134. S. *viminalis*. Common Oſier. Linn. Sp. Pl. 1448. Willd. n. 109. Purſh n. 1. Fl. Brit. n. 44. Engl. Bot. t. 1898. Hoffm. Sal. v. 1. 22. t. 2. f. 1, 2. t. 5. f. 2. t. 21. f. *e*, *f*, *g*. Ehrh. Arb. 69?—Leaves linear, inclining to lanceolate, very long, pointed, entire, ſomewhat wavy ; ſilky beneath. Branches ſtraight and ſlender. Germen ſeſſile. Style as long as the undivided linear ſtigmas.—Native of the banks of rivers, and marſhy pools, in the north of Europe, flowering in April or May, before the leaves come out. This ſpecies is beſt known in its cultivated ſtate, being valuable for its ample produce of very long ſtraight, ſlender, tough and flexible, ſilky *branches*. When allowed to grow, it forms a conſiderable *tree*. The *leaves* are longer than in any other ſpecies, meaſuring from ſix to eight inches, though only about half an inch wide ; their upper ſurface is green, ſmooth and ſhining ; the under beautifully ſilvery. *Footſtalks* half an inch long. *Stipulas* ſmall, linear-lanceolate, ſometimes toothed, often wanting. Catkins from diſtinct buds, cylindrical, ſeſſile. *Scales* rounded, brown, hairy. *Nectary* ovate. *Stamens* diſtinct, ſmooth. *Germen* ovato-lanceolate. *Style* projecting much beyond the hairs of the ſcales. *Stigmas* about the length of the ſtyle, linear, acute, undivided, as Ehrhart

defines them, and as they are repreſented in Engl. Bot. as well as in Hoffmann. So likewiſe we find them on an authentic ſpecimen from Gottingen, whoſe capſules are, nevertheleſs, nearly ripe. But on Ehrhart's own ſpecimen, Arb. n. 69, in full flower, the *ſtigmas*, equally linear, are all divided nearly to the baſe. We are unable to ſolve this difficulty. Ehrhart's muſt ſurely be another ſpecies; perhaps the Velvet Oſier, much talked of, but concerning which we could never obtain any certain information. Mr. Crowe at firſt received under that name *S. molliſſima*, Fl. Brit. n. 43, which proved indeed anſwerable to the name in the ſoftneſs of its foliage, but totally worthleſs as an Oſier. He ſubſequently acquired from ſome oſier-ground, as the true Velvet Oſier, what none of us could diſtinguiſh, either in appearance, characters, or quality, from the common kind. See our account of the following ſpecies.

135. S. *molliſſima*. Silky-leaved Willow. Ehrh. Beitr. v. 6. 101. Arb. 79. Willd. n. 110? Hoffm. Germ. 343. Fl. Brit. n. 43. Engl. Bot. t. 1509. (S. Smithiana; Willd. Enum. 1008.)—Leaves lanceolate, pointed, obſoletely crenate; whitiſh and ſilky beneath. Stipulas creſcent-ſhaped, minute. Stigmas linear, deeply divided, about the length of the ſtyle.—Native of Hanover, and we preſume of England. Mr. Crowe obtained it from an oſier-ground near Bury, Suffolk, by the name of Velvet Oſier, as above-mentioned, but it proved deficient in every uſeful property. This ſpecies flowers in April or May, before the leaves appear. The *branches* are erect, wand-like, reddiſh; downy when young. *Leaves* on ſhortiſh downy ſtalks, three or four inches long, ſomewhat rounded at the baſe, thin and pliable; green and ſmooth, or minutely downy, above; ſilky and very ſoft beneath, with a ſtrong reddiſh rib, and curved veins; the margin very ſlightly or diſtantly crenate; ſometimes minutely toothed. *Stipulas* narrow, hairy, toothed. Female *catkins* on ſhort ſtalks, accompanied by a few lanceolate ſilky floral leaves, cylindrical, from an inch to an inch and half long. Hairs of the *ſcales* extending as far as the baſe of the *ſtyle*, which is rather ſhort, with linear deeply divided *ſtigmas*. The *catkins* in Ehrhart's own ſpecimen, as well as in another from the late Dr. Noehden, are more lax and hairy than in our's, and their *ſtyles* are full as long as the *ſtigmas*, which our's are not. In both the *ſtigmas* are deeply divided, often to the very baſe, though Ehrhart defines his as undivided. Here therefore the ſame difficulty occurs as in his *viminalis*. How are theſe things to be reconciled? Willdenow, after firſt referring our Engliſh *molliſſima* to his own *holoſericea*, ſee n. 137, has in his *Enumeratio* made it a diſtinct ſpecies, by the name of *Smithiana*. We have not as yet found certain grounds for changing our original opinion, nor do we dare to decide this point, without comparing living ſpecimens, in various ſtages of growth.

136. S. *ſtipularis*. Auricled Oſier. Fl. Brit. n. 42. Engl. Bot. t. 1214. Willd. n. 111.—Leaves lanceolate, pointed, obſcurely crenate; downy beneath. Stipulas half-heart-ſhaped, very large. Nectary cylindrical. Stigmas linear, undivided, longer than the ſtyle.—Native of Suffolk. Mr. Crowe met with it in oſier-grounds near Bury, where it was nearly an uſeleſs intruder. This bloſſoms in March, before almoſt every other Willow. The *ſtem* is ſomewhat arboreſcent, with long, erect, brown, ſoft and downy *branches*. *Leaves* about five or ſix inches in length, and one in breadth, rounded at the baſe; green and ſmooth above; white beneath, with a pale rib, and many curved parallel veins. *Stipulas* very remarkable, ſtalked, pointed, wavy, toothed or cut at the baſe, often an inch long. *Catkins* large, thick, hairy. *Nectary* long and ſlender. *Stamens* diſtinct. *Germen* ovate, downy, not quite ſeſſile. *Stigmas* remarkably long and ſpreading. A diſtinct ſpecies, whoſe large coarſe habit, and great *ſtipulas*, mark it ſtrongly. We have, from our late highly valued friend Dr. Noehden, a Hannoverian ſpecimen marked *S. velutina* of Ehrhart, a name of which we find no traces. This agrees very nearly with our *ſtipularis*, and indeed ſeems to be the ſame.

137. S. *holoſericea*. Downy Oſier. Willd. n. 112, excluding the ſynonym.—"Leaves lanceolate, pointed; finely toothed in the upper part; ſmoothiſh above; rugged with veins, and very ſoftly downy, beneath. Capſules lanceolate, downy. Stigmas ſeſſile, ovate, obtuſe."—Native of Germany, about the banks of the Danube. *Branches* brown; downy when young. *Leaves* two or three inches long, minutely toothed from the middle to the ſummit. *Footſtalks* downy, dilated at the baſe. *Stipulas* ſmall, lunate, toothed. Female *catkins* before the leaves, an inch long. *Germen* lanceolate, villous or downy. *Stigmas* two, ovate, (we preſume undivided). *Willdenow*. This muſt be abundantly different from our *molliſſima*.

138. S. *candida*. Cotton Willow. Willd. n. 113. Purſh n. 2. (S. tomentoſa; Schrad. Hort. Gotting. MSS.)—Leaves linear-lanceolate, pointed, revolute, obſcurely toothed; downy above; ſnow-white and cottony beneath. Stipulas lanceolate, about the length of the footſtalk. Scales of the catkins with hairs as long as the ſtamens.—Native of dry ſhady woods, from New York to Pennſylvania, flowering in April or May. *Purſh*. With us it flowers in March, or even February. We have long cultivated this ſpecies, and find it next akin to *ſtipularis*, though undoubtedly diſtinct. The *ſtem* is buſhy, about a yard high. *Leaves* long, narrow, very cottony and white, as are the young *branches*. Male *catkins* an inch long, their yellowiſh *ſtamens* not extending beyond the ſilky ſtraight hairs of the *ſcales*. Sometimes the *leaves* are nearly naked above, and then appear of a deep green.

139. S. *Flüggeana*. Fluggean Willow. Willd. n. 114. (S. oleæfolia; Villars Dauph. v. 3. 784. t. 51. f. 28.)—"Leaves oblong-lanceolate, acute at each end, nearly entire, without ſtipulas; ſmoothiſh above; downy beneath. Germen ovato-lanceolate, ſilky."—Native of woods in Dauphiny. Villars ſays it ſerves as a ſtock for grafting *S. vitellina* upon, a purpoſe which appears altogether ſuperfluous, for the *vitellina*, like every other *Salix*, grows from cuttings, without any uncertainty. The *trunk* is ten or twelve feet high. *Leaves* an inch, or inch and half, long, ſomewhat revolute. *Branches* very brittle. We have ſeen no ſpecimen.

140. S. *alba*. Common White Willow. Linn. Sp. Pl. 1449. Willd. n. 116. Purſh n. 32. Fl. Brit. n. 45. Engl. Bot. t. 2430. Hoffm. Sal. v. 1. 41. t. 7, 8. (Salix; Camer. Epit. 107. Ger. Em. 1389.)—Leaves elliptic-lanceolate, acute, ſerrated, permanently ſilky on both ſides; the loweſt ſerratures glandular. Stamens hairy. Stigmas deeply cloven.—Native of low wet commons, and about the banks of rivers, in moſt parts of Europe, from whence, according to Mr. Purſh, it was carried to America. It bloſſoms in May, and riſes gradually to a tall *tree*, with a thick *bark*, full of fiſſures, good for tanning, as well as a remedy for agues. The *branches* are ſpreading, and in ſome degree drooping; ſilky when young. *Leaves* ſilvery and grey, with cloſe-preſſed ſilky hairs, moſt abundant on the under ſide, and permanent on both. *Stipulas* roundiſh or oblong, ſmall, often wanting. Male *catkins* yellow, with oblong, rather hairy, *ſcales*, and a double *nectary*. *Stamens* hairy below; female *catkins* green. *Germen* ovate, ſeſſile, ſmooth. *Stigmas* ſpreading, with a very ſhort *ſtyle*.

141. S. *cærulea.* Blue Willow. Engl. Bot. t. 2431. Ait. n. 64. (S. albæ varietas; Fl. Brit. 1072.)—Leaves lanceolate, taper-pointed, ſerrated; the under ſide at length almoſt naked; the loweſt ſerratures glandular. Stigmas deeply cloven.—Native of Suffolk, and probably other parts of England, flowering in May. Mr. Crowe was of opinion that this is the *S. alba* of moſt perſons, eſpecially in the north of England, as their *fragilis* is our *Ruſſelliana.* We have long been anxious to find a ſpecific diſtinction between this valuable tree and the common *alba,* but have only to offer the deciduous nature of the ſilky hairs that clothe the under ſide of the *leaves;* which very circumſtance may ariſe from the more rapid growth or dilatation of the foliage. The *ſtipulas* are very variable. The *leaves* are conſpicuous for a more blue colour than the *alba,* and the whole *tree* is handſomer. Its rapidity of growth is beyond all compariſon with *alba,* and exceeds even that of *Ruſſelliana,* n. 39. A cutting planted by Mr. Browne at Hetherſet, near Norwich, became in ten years a tree thirty-five feet high, and five feet two inches in girth; having been blown down at that age in 1800. The wood and bark are at leaſt equal in value to thoſe of the laſt, of which, if not a ſpecies of itſelf, the Blue Willow muſt be deemed a moſt important variety.

For *S. Gmeliniana,* Willd. n. 115, ſee *ſerotina,* n. 83, which is the very ſame plant.

We have thus increaſed Willdenow's liſt of ſpecies from 116 to 141, though we have found it neceſſary to diſcard a few of his number. If any ſhould ſtill prove hereafter to be deſcribed twice over, thoſe who are beſt qualified to judge, will be the leaſt ready to cenſure us, for any ſuch errors, in ſo intricate a ſubject of inquiry. S.

SALIX, in *Gardening,* contains plants of the deciduous tree aquatic kind, of which the ſpecies cultivated are, the long-leaved three-ſtamened willow (S. triandra); the bay-leaved willow (S. pentandra); the broad-leaved three-ſtamened willow (S. amygdalina); the yellow willow (S. vitellina); the halberd-leaved willow (S. haſtata); the crack willow (S. fragilis); the weeping willow (S. babylonica); the bitter purple willow (S. purpurea); the roſe willow (S. helix); the baſket oſier (S. fiſſa); the green oſier (S. rubra); the round-leaved ſallow (S. caprea); the cinereous-leaved ſallow (S. cinerea); the white willow (S. alba); and the oſier (S. viminalis).

The firſt ſort may be admitted into ornamental plantations, the male catkins being very numerous, of a bright yellow colour, and of an agreeable ſcent. The male tree ſhould, on this account, be preferred for ornament, and alſo becauſe the females quickly ſhed their catkins, and make a litter. Mr. Curtis alſo remarks, that it is not uſual for willows to flower both in ſpring and autumn; but he has frequently found this ſpecies to do ſo. It is alſo very uſeful for baſket-makers.

In the third ſort, the ſhoots are uſed by baſket-makers; the wood is white and very tough. The cotton will make ordinary paper, and may ſerve ſome of the purpoſes of genuine cotton; the bark may be uſed in dyeing, and medicinally in agues.

In regard to the ſeventh ſort, the editor of Miller's Dictionary remarks, that in N° 6817, Aug. 25 to 27, 1801, of the St. James's Chronicle, there was the following paragraph, but on what authority he is not acquainted: "The famous and admired weeping willow, planted by Pope, which has lately been felled to the ground, came from Spain, incloſing a preſent to the late lady Suffolk. Mr. Pope was in company when the covering was taken off: he obſerved that the pieces of ſtick appeared as if they had ſome vegetation; and added, perhaps they may produce ſomething we have not in England. Under this idea he planted one of them in his garden, and it produced the willow tree, that has given birth to ſo many others."

The tenth ſort with us is cultivated in the fens, and preferred to all other willows or oſiers for baſket-work.

Of the fifteenth ſort there is a vaſt number of varieties in cultivation, for the uſes of the baſket-maker. Evelyn has enumerated three vulgar ſorts: one of little worth, being brittle, and very much reſembling the ſallow, with reddiſh twigs, and more greeniſh and rounder leaves; a ſecond, called perch, of limber and green twigs, having a very ſlender leaf; the third totally like the ſecond, only the twigs not altogether ſo green, but yellowiſh. This is the very beſt, he ſays, for uſe, tough and hardy. The moſt uſual names applied to them by baſket-makers about London are the hard gelſter, the horſe gelſter, whyning or ſhrivelled gelſter, black gelſter, in which Suffolk abounds; then the goldſtones, the hard and ſoft, brittle and worſt of all the goldſtones; the ſharp and ſlender-topped yellow goldſtone; the fine goldſtone; then there is the yellow oſier, the green oſier, the ſnake or ſpeckled oſier, ſwallow-tail, and Spaniard. To theſe, the editor of Miller's Dictionary ſays, may be added the Flanders willow, which will arrive to be a large tree: with theſe coopers tie their hoops, to keep them bent. Laſtly, the white ſwallow, uſed for green work; and if of the tougheſt ſort, to make quarter can-hoops. It is further ſuggeſted, that innumerable varieties are cultivated in the oſier-grounds, for the baſket-makers; and the ſame frequently under different names, in different places, ſo that it would be difficult, and of little uſe, to enumerate them; but that the Dutch and wire oſiers are eſteemed about London. The true velvet oſier, which is a valuable ſort, has, it is ſaid, been made out to be diſtinct from the *viminalis.*

Method of Culture.—All the plants are capable of being readily increaſed by cuttings of the young ſhoots of one or two years old, in lengths of half a yard, or two or three feet; and thoſe of ſeveral years' growth, in truncheons or ſets, of from three or four to five or ſix feet long, according to the purpoſes for which they are deſigned, which ſtrike root moſt readily in low moiſt ſoils. The proper ſeaſon for planting them out is any time in open weather, from the beginning of autumn till March; but the early autumn and ſpring months are the beſt, according as the ſoil may be more moiſt. In the planting, a long iron-ſhod dibble is uſed for the ſmaller cuttings, and an iron crow for making holes for the larger ſets, or holes may be made with a ſpade for very large long pole-cuttings; though ſome uſe no inſtrument in planting the ſmaller cuttings, but ſharpen the ends of them, and thruſt them into the ground, eſpecially in ſoft land. But as this method is apt to force off the bark from the lower part of the cutting, it is beſt to cut the bottom of each cutting even, and plant them with ſome inſtrument in the above manner. Theſe ſets are planted for different purpoſes; as for ornament, for timber trees, to form oſier-grounds, to cut for poles, for pollards for lopping, &c.

In caſes where they are intended to be raiſed for timber, the large growing ſorts, ſuch as the white-yellow, and purple, or red willows, &c. ſhould be choſen, taking cuttings of the ſtrong young ſhoots, which ſhould be planted at once where they are to remain, in any low marſhy, or rather moiſt ſituation, where they grow with great rapidity. The ground ſhould be prepared by proper digging, or ploughing, as may be moſt convenient, and then a quantity of cuttings of the ſtrong young ſhoots, of one or two years growth, cut to half a yard or two-feet lengths, ſhould be provided and planted in rows, only ſix feet aſunder, and three or four diſtant in the rows, that they may draw each other up faſt in growth; and allow for gradual thinning, each cutting being inſerted two parts of three into the ground. They ſoon emit roots, and ſhoot ſtrongly at top in ſpring and ſummer; but to have them run up with clean ſtems for full ſtandards, all ſhould be cleared away but one of the ſtrongeſt leading ſhoots for a ſtem, which ſhould be ſuffered to run up at full length in its future growth. After a few years, when the trees approach one another, they ſhould be thinned for poles, &c.; repeating the thinning a few years afterwards, according as the branches of the different trees interfere, leaving them at laſt about twelve or fifteen feet aſunder, to attain their full growth. In this way they draw each other up very expeditiouſly, with ſtraight handſome ſtems, to forty or fifty feet in height, or more; and in twenty or thirty years become fit to fell as timber.

But when they are intended to form oſier-grounds for low ſtools, for producing twigs annually for the baſket-makers, they ſhould be planted in rows two or three feet aſunder, and be always kept to low ſtools a foot high, in order to force out a more plentiful annual crop of twigs and rods, proper for uſe, in one ſummer's growth. For this purpoſe, waſte boggy land on the ſides of large rivers are the moſt proper, both in reſpect to the ſoil, and the conveyance of the wands. And theſe ſituations ſhould be dug over, or ploughed, for the reception of the oſiers: then, in the proper ſeaſon, as above, a ſufficient quantity of oſier-ſets of different ſorts, in cuttings of the one or two years old ſhoots, ſhould be formed into two feet or two feet and half lengths, planting them in lines two feet and a half diſtance, inſerting each cutting from ten or twelve to fifteen inches into the ground, leaving the reſt out to form the ſtool; and let them be two feet and a half diſtant in each row. Having thus formed the plantation, the cuttings will root firmly in the ſpring, and ſhoot at top tolerably ſtrong in ſummer, each ſtool generally throwing out ſeveral ſhoots, of an erect growth. During the firſt ſummer, all large weeds ſhould be kept down, that the ſtools may have full ſcope to produce the firſt ſhoots as ſtrong as poſſible, which, by the end of autumn, will probably be advanced ſome conſiderable length; and if much wanted, may be cut in the following winter or ſpring. But for full plantations, they ſhould generally be ſuffered to continue their growth for two years, till the ſtools are firmly rooted, and become ſtrong; then be cut down with all the tops cloſe to the heads of the ſtools, which ſerve for poles, &c. Next year the ſtools ſhoot out ſtrong a numerous crop of twigs and rods, fit for cutting for the baſket-makers in the winter following; and the ſtools ſtill remaining, continue to furniſh an annual crop, fit for cutting every winter. The twigs, when cut, ſhould be ſorted in ſizes, tied in bundles, and ſtacked up for uſe.

And where they are intended to be cut for poles, the plantations of ſtools may be made in any waſte watery ſituations, as along the ſides of brooks, rivers, watery ditches, and other ſimilar ſituations; to cut every three, four, five, or ſix years, according to the purpoſes for which they may be employed. In forming them, a quantity of ſets, of two years old ſhoots, in cuttings about two feet and a half long, ſhould be provided, and planted in rows a yard aſunder, introducing each cutting two parts of three into the ground. They readily grow, and each ſends out ſeveral erect ſhoots, which, in three or four years, will become large poles fit to be cut for uſe. Large cuttings or truncheons, three or four feet long, may likewiſe be thruſt down along the ſides of rivers, brooks, ditches, &c. which will often take root, and ſhoot out ſtrongly at top for poles.

Alſo when they are deſigned for pollard ſtandards to cut over for poles, for hurdles, &c. as well as for fuel, every fifth, ſixth, or ſeventh year, the ſets or cuttings may be obtained in plenty from the loppings of any old pollard willows, &c. chooſing the large ſtraight poles, cut from about ſeven or eight to nine or ten-feet lengths, which ſhould be planted either with an iron crow, or ſome other ſimilar implement, forced into the ground to make wide holes, two feet or two and a half deep, for their reception; or, if the ground be ſtubborn, the holes ſhould be dug with a ſpade to that depth, planting one ſet in each hole, placing them from a foot and half at leaſt to two feet and half in the ground, leaving ſix, ſeven, or eight above for the ſtem. Theſe ſets, though ſo large and long, if planted in moiſt places, readily ſtrike root, and ſhoot out at top, the following ſpring and ſummer, into many erect branches, which, after four or five years' growth, become fit to lop for poles, &c. The trees thus continue to afford a lopping as above, or may be ſuffered to grow larger, according to the purpoſes for which the loppings may be wanted.

Likewiſe, when they are for the purpoſe of forming hedges quickly, either as fences, blinds, or ſhelter, cuttings, either of ſtrong young ſhoots, formed in two or three-feet lengths, and planted in a row half a foot aſunder, and twelve to fifteen or eighteen inches deep, may be employed; or large truncheons of ſeveral years growth, cut into ſets, two, three, four, or five feet long, or more, be uſed. In either caſe, when the ſets have made the firſt year's ſhoot, the ſhoots may be plaſhed together in winter, both to ſtiffen the hedge, and give it a thicker form; and afterwards be kept regular, by clipping it annually, or ſuffered to take its own natural growth. See PLASHING.

But, in order to form a willow-hedge as quickly as poſſible, large ſtraight ſets of five or ſix feet long may be uſed, planting them chequer-ways, placing each ſet half a yard in the ground, leaving three or four feet above; which being arranged acroſs one another in the above manner, and ranged all of an equal height, they at once form a good firm fence. And where a ſpeedy fence is wanted, by way of blind or ſhelter, a quantity of loppings, five, ſix, or ſeven feet long, well furniſhed with lateral branches to the bottom, may be provided, and planted in a deepiſh trench, pretty cloſe together, which ſoon grow, and form a ſort of fence immediately.

When they are for twigs for garden uſes, a moiſt ſituation ſhould be choſen, and a quantity of the moſt pliant kind of oſier-ſets, or cuttings of the young ſhoots, half a yard or two feet long, ſhould be provided and planted in rows, two parts of three into the ground. They grow freely, and furniſh plenty of twigs every year, managing them as thoſe in the oſier plantations.

The neceſſary after-culture, in all theſe caſes, is principally the keeping down large weeds the firſt and ſecond years after planting; but which is more particularly neceſſary in the plantations of young low cuttings, till they are a little advanced in their growth.

In all caſes, when they are intended for nurſery collections, all the different ſorts ſhould be kept, being raiſed from young cuttings of a year or two old, in half-yard or two-feet lengths, and planted in rows, two or three feet aſunder, to grow till wanted for uſe.

It may be noticed, that ſome of theſe ſorts of willows may be uſed with good effect, as ornamental trees, on the ſides of ponds or other places, eſpecially the white, yellow, purple, ſweet, almond-leaved, and weeping kinds, being diſpoſed thinly in large out-plantations; but the Babylonian or weeping willow, for its curious pendulous growth, demands attention in a particular manner, and ſhould be diſpoſed ſingly, or detached, both by the ſide of water, and in ſpacious openings of graſs-ground; alſo near grottos, caſcades, caves, ruins, &c. Some of the ſorts may alſo be uſed in mixture with other trees in ornamental plantations, with good effect, when introduced in a ſparing manner. See Osier.

Salix *Fragilis*, or *Crack Willow*, in the *Materia Medica*, is a ſpecies of willow, that grows in hedges and about the banks of rivers in ſeveral parts of England, and may be eaſily diſtinguiſhed from other ſpecies by the readineſs with which it breaks at the year's ſhoot laſt made, upon being ſlightly ſtruck with the finger. The bark of its branches manifeſts a conſiderable degree of bitterneſs to the taſte, and is alſo aſtringent; hence it has been thought a good ſubſtitute for the Peruvian bark, and upon trial was found to ſtop the paroxyſms of intermittents. It is likewiſe recommended in other caſes requiring tonic or aſtringent remedies. The bark of ſeveral other ſpecies of ſalix poſſeſſes ſimilar qualities, and particularly that of the S. alba and S. pentandria, both of which are recommended in the foreign pharmacopeias. Dr. Woodville is of opinion, that the bark of the S. triandria is more effectual than that of any other of this genus: at leaſt its ſenſible qualities give it a decided preference.

Water extracts the virtues of willow-bark, and affords a decoction of a reddiſh colour; which is precipitated by a ſolution of iſinglaſs, the carbonates of potaſs and of ammonia, and alſo by lime-water, the precipitate of which is at firſt blue and afterwards buff-coloured; and the precipitate procured by ſulphate of iron is a dark green precipitate. The watery extract is reddiſh, has a bitter taſte, is brittle, and does not deliqueſce. Digeſted in alcohol this bark affords a greeniſh-yellow tincture, which water renders turbid. When evaporated, the extract is of a bright yellow colour, bitter, melting at a moderate heat, and emitting an aromatic odour. The conſtituents, therefore, of white willow bark, and probably thoſe of the other two ſpecies, *viz.* S. fragilis and S. caprea, are tannin, bitter reſin, extractive, and gluten.

Theſe barks may be given either in ſubſtance, or in the form of decoction. The doſe of the powdered bark may be from ʒſs to ʒj, combined with aromatics, myrrh, or the cinchona bark, according to circumſtances. Woodv. Med. Bot.

SALIVE, in *Geography*, a town of France, in the department of the Cote d'Or; 12 miles N.W. of Is-ſur-Tille.

SALKAEV, a ſmall iſland of Ruſſia, in the Frozen ocean. N. lat. 73° 30′. E. long. 112° 14′.

SALLA, a name given to a part of the mountain of *St. Gothard;* which ſee.

Salla, *La*, a town of Naples, in Principato Citra; 43 miles E.S.E. of Salerno.

SALLAD, Salad, or *Sallet*, a diſh of eatable herbs, ordinarily accompanying roaſt meat; compoſed chiefly of crude freſh herbage, ſeaſoned with ſalt, oil, and vinegar.

Menage derives the word from the Latin *ſalata*, of *ſal, ſalt;* others from *ſalcedo;* Du-Cange from *ſalgama*, which is uſed in Auſonius and Columella in the ſame ſenſe.

Some add muſtard, hard eggs, and ſugar; others, pepper, and other ſpices, with orange-peel, ſaffron, &c. See Salad *Herbs*.

SALLAGNAC, in *Geography*, a town of France, in the department of the Creuſe; 9 miles W. of Gueret.

SALLAGOUSA, a town of France, in the department of the Eaſtern Pyrenées; 6 miles W.S.W. of Montlouis.

SALLANCHES. See Salanche.

SALLAND, or Sallans, a diſtrict or bailiwick of Holland, in the department of Overiſſel, containing ſeveral towns and villages, among which are Deventer, Campen, and Zwol.

SALLARTINE, a town of France, in the department of the Vendée; 9 miles S.W. of La Garnache.

SALLE, or Selle, in *Ancient Geography*, a place of Pannonia, 31 miles from Sabaria, on the route from Pœtovione to Carnuntum. Itin. Anton.

Salle, *La*, in *Geography*, a town of France, in the department of the Gard; 6 miles N.W. of St. Hypolite.

Salle *près Vibiers*, *La*, a town of France, in the department of the Mayne and Loire; 4 miles W. of Vibiers.

SALLEE, or Salé, a ſea-port of Africa, on the Atlantic, in the kingdom of Fez and province of Benihaſſen. It is ſituated at the mouth of the river Sallee, which is formed by the union of the two ſmaller rivers, the Buregreb and the Gueroo. The river of Sallee was formerly a port capable of receiving large ſhips, but the ſand has now ſo choaked up the entrance, that ſhips of 200 tons cannot enter it till their guns and ballaſt are taken out. This town was taken in the year 1261, by Don Alphonſo X., king of Caſtile; but it was retaken immediately after by the king of Fez. It is a walled town, and has a battery of twenty-four pieces of cannon, which commands the road, and a redoubt, which defends the entrance of the river. To the north we perceive the walls and ruins of a ſmall inhabited town, which Muley Iſhmael cauſed to be built for the families of his black ſoldiers. On the ſouth ſide of the river Sallee is *Rabat;* which ſee. The road of Sallee is only to be frequented in the fine ſeaſon, from the beginning of April to the end of September. When the wind blows from the S.S.W., which ſeldom happens but in winter, this road is no longer ſafe: ſhips being expoſed to be driven out to ſea, and the ſhifting of the ſands of the bar rendering any communication with the town extremely difficult. The beſt anchorage is on the S. ſide of the river next Rabat, and the ſhip ſhould be moored between the tower of the moſque and that called Haſſen, having the latter to the north. Great attention ſhould be paid to the cables, as many anchors have been here loſt. Sallee is ſaid to contain about 16,000 inhabitants, moſt of whom are deſcendants of the Moors who formerly occupied Spain; 42 miles W. of Mequinez. N. lat. 34° 3′. W. long. 6° 40′. Chenier's Morocco, vol. i.

SALLEEOLAKIT, a ſmall iſland in the Eaſt Indian ſea, near the S.W. coaſt of Mindanao. N. lat. 6° 42′. E. long. 121° 25′.

SALLEN, a lake of Pruſſia, in Natangen, near Boſen; 52 miles S.S.E. of Königſberg.

SALLENGZE, Albert Henry de, in *Biography*, an ingenious writer, was born at the Hague in 1694. He was educated at Leyden, after which he became an advocate. He died in 1723. He wrote the "Hiſtory of Montmaur," in two vols. 12mo.; "Memoirs of Literature," two vols.; "Novus Theſaurus Antiquitatum Romanorum," three vols. fol.; and "An Eſſay on the Hiſtory of the United Provinces."

SALLENT, in *Geography*, a town of Spain, in Aragon; 13 miles N. of Jaca.

SALLERO, a ſmall iſland in the North ſea, near the coaſt of Lapland. N. lat. 69° 20′.

SALLERUP, a town of Sweden, in the province of Skonen; 20 miles E. of Lund.

SALLES, a town of France, in the department of the Tarn; 12 miles N.N.E. of Gaillac.—Alſo, a town of France, in the department of the Gard; 6 miles N. of Alais.—Alſo, a town of France, in the department of the Charente; 5 miles S. of Cognac.

SALLES-CURAN. See Sales-curan.

SALLI, a town of Hindooſtan, in Dowlatabad; 13 miles W.S.W. of Kondur.

SALLIAN, or Sallien, a town of Perſia, in the province of Schirvan, on the left bank of the Kur, near the Caſpian ſea. This town is opulent, and is celebrated for its extenſive fiſhery; it is, correctly ſpeaking, only a collection of villages, which owe their proſperity to the fiſhery, principally carried on by Ruſſian ſubjects. This fiſhery is ſaid to produce annually about 50,000 ſilver rubles. The ſurrounding diſtrict is inhabited by a mixture of Perſians and Tartars, with a few Armenians. The principal article of its commerce is ſalt; 90 miles S. of Schamachie.

SALLIES, a town of France, in the department of the Upper Garonne; 9 miles E. of St. Gaudens.

Sallies. See Salies.

SALLIS, or Salis, in *Ancient Geography*, a village of Idumea, whither the Jews retired after having been defeated by the Romans in the plains of Aſcalon.

SALLIUS Lapis, in *Natural Hiſtory*, a name by which Ludovicus Dulcis, and ſome other writers of his time, have miſcalled the lapis ſamius of the ancients. That author deſcribes it as being heavy, white, and brittle, and gives it the ſame virtues with the lapis ſamius of Pliny.

SALLO, Denys de, in *Biography*, lord of La Coudraye, a man of letters, and the founder of modern periodical criticiſm, was born at Paris in 1626, of a noble family, originally from Poitou. He was educated to the law, and was admitted a counſellor of the parliament of Paris in 1652. He had a great paſſion for reading, eſpecially on curious and uncommon ſubjects, in proof of which the following facts have been adduced. When cardinal Chigi was legate in France, and doubts had ariſen concerning his right of precedence, M. Sallo drew up a treatiſe "De Legatis." The court being afterwards in doubt whether Maria-Thereſa ought to be denominated of Auſtria or Spain, he was applied to on the occaſion, and wrote a learned tract "On Names." He compoſed another "On Seals," and other ſimilar pieces, which have not been made public. In 1664 he projected the "Journal des Savans," which he began to publiſh under the name of Sieur d'Hedouville. He had ſeveral coadjutors in this work, and it began in a free ſtyle of criticiſm, which excited the loud complaints of ſome celebrated authors, who, by an undue influence, cauſed the work to be ſuppreſſed after the appearance of the 13th number. Sallo then transferred the editorſhip to the abbè Gallois, who contented himſelf with extracts of books, without venturing upon any opinions of their merits. It afterwards paſſed into the hands of the abbè de la Roque, and the preſident Couſin, and was finally committed to a body of men of letters, appointed by the chancellor. It was the forerunner, or indeed the parent, of all the literary journals which have ſince appeared in Italy, Germany, Holland, and England, which, with all their defects, have certainly contributed much to the diffuſion of knowledge and juſt principles of taſte. Sallo died at Paris in 1669, at the age of forty-three.

SALLOOR, in *Geography*, a town of Hindooſtan, in the circar of Cicacole; 45 miles W. of Cicacole.

SALLOORGAUT, a fortreſs of Hindooſtan, in the circar of Cicacole; 38 miles W. of Cicacole.

SALLOW, in *Botany*, a term ſometimes uſed for the willow. See Salix.

SALLUMEA, in *Geography*, a town of the Birman empire, on the left bank of the Ava; 25 miles N. of Raynangong.

SALLUST, Caius Crispus Sallustius, in *Biography*, a celebrated Roman hiſtorian, was born about the year 85 B.C. in the country of the Sabines. He was educated at Rome, and was not leſs diſtinguiſhed for his licentiouſneſs than for his talents. It is recorded of him, that being detected in an adulterous intercourſe, he was actually ſcourged by the hand of Milo, and obliged to pay a fine before he obtained his diſmiſſion. His extravagance and debauchery cauſed him to be expunged from the liſt of ſenators by the cenſors Appius Claudius and Calpurnius Piſo. He was afterwards reſtored by Julius Cæſar, promoted to the dignities of quæſtor and prætor, and nominated to the government of Numidia. In this high office he enriched himſelf ſo much by pillage and rapine, that on his return to Rome he was enabled to build himſelf a magnificent villa, with extenſive gardens, on the Quirinal Hill, which even ſtill retain the name of Salluſt. He married Terentia, the divorced wife of Cicero, and from this circumſtance, it has been ſaid by ſome, aroſe an everlaſting hatred between the orator and the hiſtorian; though, according to others, this enmity was occaſioned by the defence which Cicero undertook to make for Milo in the caſe of Clodius. Salluſt died in the 51ſt year of his age, in the year 35 before the Chriſtian era. The vices of this man deſerve a peculiar ſtigma, on account of their contraſt with the rigid morality contained in his writings, which might lead the incautious reader to take him for a Cato. But while the man and the ſtateſman muſt be ever held in contempt and abhorrence, the author has always been regarded as one of the ornaments of the age and country in which he flouriſhed. He had compoſed a hiſtory of the Roman republic, from the death of Sylla to Catiline's conſpiracy: of this nothing remains but a few fragments. His only compoſitions that have come to modern times, in a ſtate of tolerable perfection, are the hiſtory of Catiline's conſpiracy, and of the wars of Jugurtha, king of Numidia. In theſe works, which have met with uniform applauſe, the author is greatly admired for the elegance, the vigour, and the animation of his ſentences: he every where diſplays a wonderful knowledge of the human heart, and paints with a moſt maſterly hand the cauſes that gave riſe to the great events which he relates. No one was better acquainted with the vices that prevailed in Italy, from his own practice of many of them; and no one ſeems to have been more ſevere againſt the follies of the age, and even thoſe failings of which he not only ſtood guilty in the face of the world, but muſt have ſtood ſelf-condemned. His deſcriptions are elegantly correct, and his harangues are nervous and animated, and, apparently, extremely well adapted to the character and different purſuits of the great men in whoſe mouths they are placed. By the moderns it is agreed that the conciſe energy of the Latin language is no where diſplayed to more perfection than in the exiſting works of Salluſt, in which there is great ſkill ſhewn in ſketching the characters that come under his notice. By his contemporaries his ſtyle was criticiſed for an affectation of the uſe of old words, and an occaſional obſcurity, produced by the boldneſs of figure and exceſs of brevity. Notwithſtanding this defect, if it were a defect, his reputation ſtood very high in Rome: Martial calls him "primus in Romana hiſtoria;" and Tacitus ſpeaks of him as "rerum Romanarum florentiſſimus auctor." Quintilian compares him to the Greek Thucydides.

Though faithful in every other reſpect, he has not painted the character of Cicero with all the fidelity and accuracy which the reader claims from the hiſtorian; and in paſſing over in ſilence many actions which reflect the greateſt honour on the firſt huſband of Terentia, the rival of Cicero has diſgraced himſelf, and rendered his compoſitions in ſome reſpects ſuſpicious. There are preſerved alſo, under the name of Salluſt, two orations to Cæſar, "De Republica Ordinanda," and two declamations againſt Catiline and Cicero. The authenticity of the orations is doubtful, and the declamations are, by the beſt informed critics, decided to be ſpurious. Of this author the editions have been numerous, but the moſt eſteemed are thoſe of Gronovius, cum. not. var. Lug. B. 1690; of Waſſe, Cantab. 1710; of Havercamp, Amſter. 1742; and of Edinburgh, 1755. There are other perſons noted in Roman hiſtory of the ſame name: of whom one was a nephew of the hiſtorian, by whom he was adopted. He is ſaid to have imitated the moderation of Mæcenas, and to have remained ſatisfied with the dignity of a Roman knight, when he could have made himſelf powerful by the favour of Auguſtus and of his ſucceſſor Tiberius. Horace dedicated one of his odes to him. Secundus Promotus Salluſtius was a native of Gaul, and the intimate friend of the emperor Julian. He is remarkable for his integrity, and the ſoundneſs of his counſels. He was prefect of Gaul. There is another "Secundus," ſometimes confounded with Promotus, who was alſo a favourite of Julian, who made him prefect of the Eaſt. He conciliated the good graces of the Romans by the purity of his morals, and the excellence of his religious principles. After the death of Jovian he was univerſally named by the officers of the Roman empire to ſucceed to the imperial throne, but he declined the honour, pleading old age, and its attendant infirmities, as his excuſe. The Romans would have inveſted his ſon with the imperial purple, but the father very wiſely oppoſed ſo dangerous a ſituation for the young man, ſaying that he had not experience to ſupport the dignity to which they would have elevated him.

SALLUVII, in *Ancient Geography*, a people of Gallia Narbonnenſis, whoſe capital was Aquæ Sextiæ. Theſe people are the ſame with the Salians: they were anciently enemies of the Romans: but in the year of Rome 629 the conſul M. Fulvius repulſed their enterpriſes, and their chief Teutomal, in the year 631, was defeated by C. Sextius Calvinus, who was the conſul that founded Aquæ Sextiæ. Pliny.

SALLY, in *Geography*, a town of Virginia, on the James river; 92 miles W. of Richmond.

Sally, in *Architecture*, from the French *ſaillie*, is what we more uſually call *projecture*.

Sally, in the *Military Art*, the ſecret iſſuing out of the beſieged from their town, or fort, and ſudden falling upon the beſiegers to cut them off, nail their cannon, hinder the progreſs of their approaches, deſtroy their works, &c.

We ſay, *to make a ſally*, *to repulſe a ſally*, &c.

To cut off a ſally, is to get between thoſe who made it and the town.

Sally-*Ports*, or *Poſtern Gates*, in *Fortification*, are thoſe under-ground paſſages, which lead from the inner works to the outer ones; ſuch as from the higher flank to the lower, or to the tenailles, or the communication from the middle of the curtain to the ravelin. In each place of arms there are two ſally-ports, *z*, *z*, (*Plate* V. *Fortification*, *fig.* 6.) which are ten or twelve feet wide, for the troops to ſally out. In time of a ſiege they are ſhut up with barriers or gates. See Postern.

Sally-*Port*, in *Ship-Building*, is the port in a fire-ſhip next abaft the fire-room bulk-head; it is larger than the other ports, and to which the train leads from whence it is ſet on fire.

SALLYCOTE, in *Geography*, a town of the ſtate of Georgia; 95 miles W. of Tugeloo.

SALM, a town of France, in the department of the Foreſts, late capital of a county inſulated in the duchy of Luxemburg, on the borders of Liege; deriving its name from a caſtle now in ruins; 11 miles S.S.E. of Spa.—Alſo, a town of France, in the department of the Lower Rhine, late capital of a country of the ſame name, inſulated in the dominions of France, and called "the upper county of Salm," in contradiſtinction to the Salm above-mentioned; 24 miles W.S.W. of Straſburg.—Alſo, a river of France, which runs into the Moſelle, near Numagen, 8 miles below Treves.—Alſo, a river of Stiria, which runs into the Moehr, near Ernhauſen.

SALMA, in *Ancient Geography*, a town of Arabia Deſerta, to the eaſt of Idicara, a town that was ſituated on the Perſian gulf. Ptol.—Alſo, the name of two towns of Arabia Felix, according to Ptolemy.

Salma, in *Geography*, a lake of Naples; 4 miles W. of Bari.

SALMACIS, in *Ancient Geography*, a town of Aſia Minor, in Caria. Steph. Byz.—Alſo, a fountain in Caria.

SALMAISE, in *Geography*, a town of France, in the department of the Cote d'Or; 18 miles N.W. of Dijon.

SALMANSHAVEN, a bay of the North ſea, on the coaſt of Norway; 100 miles N. of Bergen.

SALMANSWEILER, a princely abbey of Germany, on a river which runs into the lake of Conſtance, founded in the beginning of the twelfth century, and ſoon after made imperial. In 1802 it was given to the margrave of Baden; 9 miles N.N.E. of Conſtance.

SALMANTICA, Salamanca, in *Ancient Geography*, a conſiderable town of Hiſpania, in Luſitania, towards the ſouth-eaſt, in the country of the Vettones. Ptol. Hannibal gained poſſeſſion of this town in the year of Rome 534. At the ſecond ſiege of this town by Hannibal, the inhabitants were compelled to abandon it, and to carry with them only their garments; upon which the women took occaſion to conceal, each of them, a ſword, which they ſuppoſed might be of future uſe to their huſbands. When Hannibal devoted the town to the pillage of his Carthaginian ſoldiers, he committed the cuſtody of his priſoners to ſome Numidian troops. As theſe guards were deprived of the benefits of pillage, they were negligent in their care of the priſoners; of which negligence the women availed themſelves, by giving arms to their huſbands; who, having maſſacred the Numidians, eſcaped into the mountains. Hannibal afterwards reſtored them to their town. See Salamanca.

SALMASIA, in *Botany*, named by Schreber in honour of Claudius Salmaſius, or Saumaiſe, the celebrated adverſary of Milton, a native of France, who lived early in the 17th century. He was one of the profeſſors of the Leyden univerſity, and author of ſeveral critical tracts on natural hiſtory. (See Salmasius.)—Schreb. 201. Willd. Sp. Pl. v. 1. 1502. Mart. Mill. Dict. v. 4. (Tachibota; Aubl. Guian. v. 1. 287. Juſſ. 295. Lamarck Illuſtr. t. 208.)—Claſs and order, *Pentandria Trigynia*. Nat. Ord. *Ciſti*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, deeply cloven into five, oblong, acute, permanent ſegments. *Cor.* Petals five, oblong, unguiculated, as long as the calyx, inſerted into the receptacle. *Stam.* Filaments five, capillary, the length of the corolla, inſerted into the receptacle; anthers roundiſh. *Piſt.* Germen ſuperior, triangular; ſtyle none; ſtigmas three. *Peric.* Capſule triangular, of three cells and three valves; partitions contrary to the valves. *Seeds* numerous, ſmall.

Eſſ. Ch. Calyx deeply five cleft. Petals five. Style none. Capſule of three cells and three valves, many-ſeeded.

1. S. *racemoſa*. Willd. (Tachibota guianenſis; Aubl. Guian. t. 112.)—Native of woods in Guiana, where it flowers and bears fruit in October.—A *ſhrub* ſeven or eight feet high, with numerous round, hairy, ruſty-coloured *branches*. *Leaves* alternate, nearly ſeſſile, oblong, pointed, entire, ſmooth. *Stipulas* linear, hairy, deciduous. *Flowers* white, on hairy ſtalks, in long, axillary, and terminal cluſters.

Its Caribbean name is *Umbetachibote*.

SALMASIUS, or SAUMAISE, CLAUDE, in *Biography*, a learned writer, was born at Saumur in the year 1588. He received the elementary part of his education under his father, and afterwards ſtudied at Paris and Heidelberg. He ſucceeded Scaliger as profeſſor of hiſtory at Leyden. Richelieu offered him a conſiderable penſion on condition of his ſettling in France, which Salmaſius refuſed. The king, however, conferred upon him conſiderable honours, and made him counſellor of ſtate. In 1649 he wrote a defence of Charles I. of England, to which Milton replied. (See his article.) In the following year he went to Sweden, on an invitation from queen Chriſtina. He died at Spa in 1653. His principal works are "Hiſtoriæ Auguſtæ Scriptores Sex;" "De modo Uſurarum;" "Diſſertatio de Fœnore trepezetico, in tres libros diviſo;" "De Re militari Romanorum;" "De Helleniſtica;" and he was the editor of ſeveral ancient authors, as Florus, Polyhiſtor, Simplicius on Epictetus, &c.

Though violent as a controverſialiſt, Salmaſius was, in private life, extremely mild and unaſſuming. His mind was a vaſt magazine of multifarious knowledge, laid up by the help of memory and application, but crude, inexact, and little adorned by taſte or judgment. There was ſcarcely any topic of learned diſcuſſion in which he did not engage, and he contributed to the illuſtration of numerous works of antiquity. Moſt of the great ſcholars of his time ſpeak of him with high commendation, though he had alſo many enemies and detractors, whom he provoked by that arrogance and propenſity to abuſe which has been but too common among critics. One of Salmaſius's biographers, Sorbiere, has thus deſcribed his literary character. "It is impoſſible to diſpute his opinions," (the Engliſh have almoſt uniformly thought differently,) "in the ſmalleſt degree, without being called a blockhead or an idiot; and an antagoniſt muſt lay his account with receiving from him a thouſand inſults, which rather fall upon the perſon, than defend the point in queſtion. For theſe forty years that he has been ſetting the preſs to work, nothing has fallen from his pen but invectives, ſparingly mixed with ſolid knowledge. He has conſtructed no work with lime and ſand by which poſterity will be benefited. He cannot live without illuſtrious enemies, and without ſome quarrel upon his hands; and it does not ſuffice him to have diſarmed his man, and obtained from him uſual ſatisfaction, he muſt trample him in the dirt, and disfigure him. His latinity runs away with him. He is unwilling that all the foul language which he has learnt ſhould be loſt, and he finds it more eaſy to produce from the ſtores of his memory the reproachful terms which he has collected from ancient authors, than delicate raillery and ſound argument from any other ſource." Salmaſius compoſed with rapidity, and is ſaid never to have reviſed what he had written. This we believe is no uncommon caſe with eager diſputants, and ready writers, who are, however, willing enough to have their compoſitions reviſed by others, and thus avail themſelves of induſtry which they do not themſelves poſſeſs. The abundance of matter that occurred to him while engaged on any ſubject, led him perpetually into digreſſions, and to forget what he had advanced, and even plunged him into contradictions, ſo that he has been deſcribed as a receptacle of erudition rather than an able diſpenſer of it.

SALMAST, in *Geography*. See SELMAS.

SALME, a town of Perſia, in the province of Irak; 30 miles E.N.E. of Kirmanſhaw, or Kermanſhee, which is a flouriſhing town, containing about 12,000 houſes, and lying in the extremity of a fine plain, through which runs the river Karaſu. This town (Kirmanſhaw) is adorned with many gardens, has 14 hummums, or public baths, and four moſques, and yields a revenue of 15,000 tomauns a-year.

SALMEDINA, a town of South America, in the province of Darien; 5 miles N. of Porto Bello.

SALMEGGIARE, Ital. to ſing pſalms.

SALMERANGES, in *Geography*, a town of France, in the department of the Puy de Dôme; 4 miles N.E. of Billom.

SALMERON, ALPHONSUS, in *Biography*, a learned Jeſuit, was born at Toledo, and ſtudied at Paris. He was one of the firſt and moſt zealous diſciples of Loyola; and gained conſiderable reputation at the council of Trent. He contributed to the eſtabliſhment of a college at Naples, where he died in 1585. He was a voluminous writer, and left, among other things, "Commentaries on the Scriptures," in 8 vols. fol.

SALMI, Ital., the plural of *ſalmo*, a pſalm; as "Salmi veſpertini," pſalms for the evening ſervice; "Salmi dominicale," pſalms for Sunday; "Salmi paſſeggiati," the title of a ſmall book which we procured in Italy, that was publiſhed at Rome, 1615, by Franceſe Severi Perugino, a ſinger in the papal chapel, and dedicated to cardinal Borgheſi. This publication ſhews to what exceſs the rage of *gracing*, even in the moſt ſolemn melodies of the church, was carried before there were any *bravura* airs, or florid ſinging in the muſical drama or opera, which is accuſed of all the corruptions of modern muſic. The book is very neatly engraved on copper-plates, and contains ſuch faſhionable graces and embelliſhments for every kind of voice as were then allowed to be uſed even in the pontifical chapel, when the eccleſiaſtical tunes were ſung in parts. This book contains paſſages in notes tied twice, and often three times, that would be too rapid and difficult for many opera ſingers now of the firſt abilities, and ſuch as muſical methodiſts, from their abſurdity and impropriety, would with good reaſon call *Lenocinia* of the church of Rome.

SALMIA, in *Geography*, a town of Pruſſia, in the province of Ermeland; 6 miles S.E. of Frauenburg.

SALMIECH, a town of France, in the department of the Aveiron; 10 miles S. of Rhodez or Rodes.

SALMIS, a town of Norwegian Lapland; 108 miles S.W. of Wardhuys.—Alſo, a town of Ruſſia, in the government of Viborg, on the lake Ladoga; 20 miles N.W. of Olonetz.

SALMISCH, a river of Ruſſia, which runs into the Sakmarah, 16 miles N. of Orenburg.

SALMO, the *Salmon*, in *Ichthyology*, a genus of fiſhes of the order Abdominales. The generic character, as given by Gmelin, is as follows. The head is ſmooth and compreſſed, with a large mouth; the lips are ſmall; the tongue white, cartilaginous, moveable; the eyes are moderate, lateral; teeth in the jaws and on the tongue; the gill-membrane is from four to twelve-rayed, but the cover has three laminæ; the body is long, covered with rounded and very finely ſtriate ſcales; the back is convex; the lateral line is ſtraight, nearer the back; the hind-moſt dorſal fin is fleſhy, without rays; the ventral fins have many rays.

The ſalmon is a very peculiar kind of fiſh. It is bred in rivers, but goes every year from thence into the ſea; and at a certain ſeaſon of the ſame year it always returns up into the freſh water again; and what is remarkable, is, that ſo far as obſervation has been able to trace them at any time, the ſame ſhoals of ſalmon always return into the ſame river out of which they ſwam, not into any other; ſo that the people who live on the ſalmon fiſhery are not afraid for their rivers being cleared, by all the fiſh in them going down into the ſea, for they know that they will all return up to them again at a proper time. When the ſalmon has once entered a freſh river, he always ſwims up againſt the ſtream, and is, therefore, obſerved to ſwim as deep or as near the bottom as poſſible; and, on the contrary, when they are going down the ſame river into the ſea, they are always ſeen ſwimming near the ſurface. The reaſon of this is, that in going up they are to ſwim againſt the current, which always runs much ſwifter at the ſurface than deeper; and when they are going down, they get to the ſurface, where the force of the current alone is ſufficient to carry them, and they have little or no trouble in puſhing themſelves on.

Salmon will often go a hundred leagues up in the large rivers, ſpringing with ſurpriſing agility over cataracts many feet high; but Mr. Pennant contradicts the vulgar opinion of their taking their tail in their mouth when they attempt to leap; and thus the people at this vaſt diſtance from the mouth have the pleaſure of taking a fiſh that is in part of the ſea kind. It is alſo remarkable, that the rivers which moſt abound with ſalmon do not make the ſeas about their mouths any more abound with them than others; particularly the harbour of Breſt affords no ſalmon; though the river Chateaulin, which diſcharges itſelf into it, is the richeſt ſalmon river in France. Another ſingularity, in regard to the ſalmon, is their ſwimming up the rivers together in ſuch vaſt numbers. It is to be allowed, indeed, that herrings, mackarel, and many other fiſh, do in the ſame manner appear on the coaſts at certain ſeaſons in prodigious numbers.

Salmon do not equally frequent all rivers, though they may ſeem to us equally proper for their reception. There are two rivers which open themſelves into the harbour of Breſt, very near one another; the one of theſe is famous for the quantity of ſalmon in it, and the great advantage of the fiſhery; the other never has any of theſe fiſh in it. It moſt probably is owing to their finding plenty of food, and proper places for the depoſiting their ſpawn in the one of thoſe rivers, and not in the other, that makes this regular choice.

Moſt of the fiſhes of this genus are found in rapid ſtony rivers, and are impatient of foul water; a few of them inhabit the ſea, but get into rivers once a year, for the purpoſe of depoſiting their ſpawn in beds of gravel: for this purpoſe they will ſurmount any difficulties, aſcend many hundred miles up the ſtreams, force themſelves againſt the moſt rapid waters, and ſpring with amazing agility over any thing that happens to impede their progreſs, even to the height of ſeveral feet; after ſpawning, they return to the ſea poor and lean; they feed on other fiſhes, and vary much in their colour; the fleſh, as is well known, and generally allowed, is very excellent: the vent is near the tail.

This genus is ſeparated into four diſtinct diviſions. 1. Into thoſe genera whoſe body is variegated: 2. Thoſe whoſe dorſal and anal fins are oppoſite to each other: 3. Thoſe which have ſcarcely any teeth, or which at leaſt are barely diſcernible: and 4. Thoſe whoſe gill-membrane has not more than four rays. In theſe ſeveral ſubdiviſions there are enumerated in Gmelin's edition of Linnæus about fifty-five ſpecies, of which ſeveral are inhabitants of our own ſeas and rivers, and others are mentioned by Dr. Shaw.

A. *Body variegated.*

Species.

* Salar, or Common Salmon. This ſpecies is characterized by the upper jaw extending beyond the lower. The head is wedged and ſmall; the front and cheeks black; the eyes are ſmall, the iris is ſilvery, yellow at the corners; teeth in both jaws ſharp, and between them are other moveable and leſſer ones; the end of the lower jaw in the full grown male turns up into an obtuſe hook; the palate has two ſharp rows of teeth; the tongue alſo has from ſix to eight recurved teeth; the gill-membrane is yellow or white; the pectoral fins yellow at the baſe, above they are blueiſh; the ventral and anal yellow; the tail is ſemilunar; the firſt dorſal fin is cinereous, ſpotted, the fleſhy one and lateral line black.

The common ſalmon inhabits chiefly the northern ſeas, and aſcends rivers annually in large ſhoals, for the purpoſe of ſpawning: it ſwims near the ſurface, but during ſtorms it ſinks to the bottom: it is ſaid to be fearful of any thing red, but is attracted by any thing white; it grows, when young, very rapidly, and ſometimes reaches to ſix feet long; it feeds on fiſhes, worms, and divers inſects; the body above is blackiſh, the ſides blueiſh; beneath it is ſilvery, ſometimes with blackiſh coloured ſpots; the ſcales are deciduous, and the fleſh red.

This fiſh is to be found all over the north of Europe and Aſia, from Britain to Kamtſchatka, but never ventures into the warm latitudes. It has been met with on the coaſts of Greenland, and has been ſeen in ſome of the rivers of France, but none have been caught ſo far ſouth as the Mediterranean. As it is a ſea-fiſh, it is only found in thoſe rivers and lakes which communicate with the ſea. The ancient Grecians never extended their empire to the ocean, and of courſe they were unacquainted with the ſalmon; their language, accordingly, has no word that correſponds with the fiſh. The Romans, however, were well acquainted with the ſalmon, and our Engliſh word is borrowed from their *ſalmo;* it is ſuppoſed by etymologiſts to be derived from *ſalio*, to leap, which motion, as we have ſeen, is characteriſtic of this fiſh. The Romans diſtinguiſhed theſe fiſh by different names, according to their age, as *ſalmones*, *fariones*, and *ſalares*. The inhabitants of the north of England name ſalmon of the firſt year *ſmelts;* of the ſecond, *ſprods;* of the third, *morts;* of the fourth, *fork-tails;* and of the fifth, *half-fiſhes;* and in the ſixth year the animal attains its full ſize.

The long migrations of the ſalmon at or juſt before the ſpawning ſeaſon, is the moſt extraordinary part of their hiſtory. It annually mounts, as we have obſerved, long rivers, till it meets with a bed fitted for depoſiting the ſeeds of a future family. It eaſily makes its way againſt not only the moſt rapid currents, but will leap up cataracts. The manner of depoſiting their ſpawn, after they have performed their journey, is very curious. When a proper place is ſelected for the purpoſe, the male and female unite in digging a pit eighteen inches deep, into which the former ejects his milt, and the latter her ſpawn: the place they carefully cover over by means of their tails, and in this ſtate the ſpawn lies buried from December till ſpring, if not diſturbed by violent floods, while the parent fiſhes have gone back to the ſea to obtain from the waters of the ocean recruited ſtrength, and a new ſupply of fleſh ; for after ſpawning they become exceſſively lean, and exhauſted. It is when they firſt leave the ſea that they are plump and vigorous ; and ſuch as are in that condition have a number of inſects adhering to them above the gills, like lice plundering upon thoſe who are already poor and miſerable. About the end of March, the ova begin to exclude the young ſalmon, which find their way upwards in almoſt incredible numbers ; they remain in the freſh waters till the arrival of the floods occaſioned by the rains, or the melting of the ſnows, by which they are ſwept down into the ſea. In June, the young ſalmon begin to appear again in the rivers, and increaſe with amazing rapidity in ſize, ſo that in two or three months they will weigh eight or nine pounds. For an account of the ſalmon fiſhery, we refer to the articles SALMON *Fiſhery,* and FISHERY. To what is given in that place we may ſubjoin the following method, mentioned by Mr. Bingley. "A perſon of the name of Graham, who farms the ſea-coaſt fiſhery at Whitehaven, has adopted a ſucceſsful mode of taking ſalmon, which he denominates ſalmon-hunting. When the tide is out, and the fiſh are left in ſhallow waters, intercepted by ſand-banks, near the mouth of the river ; or when they are found in any inlets up the ſhore, where the water is not more than from one foot to four feet in depth, the place where they lie is to be diſcovered by their agitation of the pool. This man, armed with a three-pointed barbed ſpear, having a ſhaft fifteen feet in length, mounts his horſe, and plunges, at a ſwift trot or moderate gallop, belly deep into the water. He makes ready his ſpear with both hands ; when he overtakes the ſalmon, he lets go one hand, and with the other ſtrikes the ſpear, with almoſt unerring aim, into the fiſh ; then by a turn of the hand he raiſes the ſalmon to the ſurface of the water, turns the horſe's head to the ſhore, and runs the ſalmon on dry land without diſmounting." This perſon ſays, that by the mode juſt deſcribed he has killed between forty and fifty fiſh in a day ; but he regards ten as fully adequate to the labour of the horſe and horſeman. In the inteſtinal canal of ſalmon is often found a ſpecies of *tænia,* ſometimes three feet long, and Dr. Bloch mentions, that in a ſpecimen which had been dead three weeks, he found one of theſe worms ſtill living.

SCHIEFERMULLERI. The ſpecific character of this fiſh is, that the lower jaw is the longer, and that the body is marked with black ſpots. The head is pointed ; the iris of a ſilvery yellow ; the palate and tongue toothed ; the lateral line is black, in the middle of the body ; the fins brown, mixed with blue ; the ventral fin has an appendage ; and the tail is forked.

* ERIOX, or Grey Salmon, has an even tail, and the body is marked with cinereous ſpots. The head is more ſloping, and ſhorter, than the common ſalmon ; the body above the lateral line is of a deep grey, with purpliſh ſpots ; belly ſilvery. It is found in European ſeas ; is leſs than the ſalmon, and the fleſh paler ; but, like the other, it aſcends rivers.

* TRUTTA ; Salmon Trout, or Bull Trout. This ſpecies has a body marked with black ſpots, encircled with brown ; the pectoral fin is diſtinguiſhed with its ſix dots. The head of this fiſh is ſmall and wedged ; the noſe and front are black ; the cheeks violet-yellow ; the eyes are ſmall ; the iris is of a yellowiſh ſilvery tint ; the jaws are equal ; the teeth are ſharp, and a little curved ; the palate has three rows of teeth ; and the tongue from ten to twelve teeth, in two rows ; the fins are compoſed of branched rays, cinereous ; the caudal and fleſhy dorſal ones black ; the latter, and the firſt dorſal one, are ſpotted ; the tail is broad, and ſlightly bifid. This is a native of the European ſeas, and, like the ſalmon, aſcends rivers periodically. It ſeldom exceeds two feet long ; above it is of a duſky colour, with a gloſs of blue and green ; the ſides are violet, beneath they are white ; it feeds on ſmall fiſhes, inſects, and worms ; the fleſh, as is well known, is of a pale red, and excellent.

There is a variety which has its firſt dorſal fin ſpotted ; the tail is black, and much forked : this is called the *white trout.* It migrates from the ſea, chiefly into the Eſk, in Cumberland ; it ſeldom exceeds a foot long ; the body above is mixed with black, duſky, and ſilvery ; beneath the lateral line it is of an exquiſite ſilvery whiteneſs ; the firſt dorſal fin is ſpotted with black.

FARIO ; Common Trout. The trout is an inhabitant of clear and cold ſtreams and lakes in moſt parts of Europe, and admits of conſiderable variety as to the tinge both of its ground-colour and ſpots. Its general length is from ſix to fifteen or ſixteen inches, and its colour yellowiſh-grey, darker or browner on the back, and marked on the ſides by ſeveral rather diſtant, round, bright-red ſpots, each ſurrounded by a tinge of pale-blue grey. Sometimes the ground-colour of the body is a purpliſh-grey ; the red ſpots much larger, more or leſs mixed with black ; and the belly of a white or ſilvery caſt ; the fins are of a pale purpliſh-brown ; the dorſal fin marked with ſeveral darker ſpots ; the head is rather larger in proportion than that of the ſalmon ; the ſcales ſmall, and the lateral line ſtraight. The female fiſh is of a brighter and more beautiful appearance than the male.

Mr. Pennant informs us, that in the lake Llyndivi in South Wales, are trouts marked with red and black ſpots as large as ſixpences ; and others unſpotted, and of a reddiſh hue, ſometimes weighing nearly ten pounds ; but theſe latter are ſaid to be bad-taſted.

In general the trout prefers clear, cold, and briſkly-running waters, with a ſtrong or gravelly bottom. It ſwims with rapidity, and, like the ſalmon, ſprings occaſionally to a very conſiderable height, in order to ſurmount any obſtacle in its courſe. It lives on worms, ſmall fiſhes, ſhell-fiſh, and aquatic inſects, and is particularly delighted with May-flies (ephemeræ), as well as with phryganeæ, gnats, and their larvæ. It generally ſpawns in September, or, in the colder parts of Europe, in October ; and at thoſe times gets among the roots of trees, ſtones, &c. in order to depoſit its eggs, which are obſerved to be far leſs numerous than thoſe of other river-fiſh. Yet the trout, as Bloch obſerves, is a fiſh that admits of very conſiderable increaſe ; owing, no doubt, to the circumſtance of moſt of the voracious kind of fiſhes avoiding waters of ſo cold a nature as thoſe which trouts delight to inhabit ; and their increaſe would be ſtill greater, were they not themſelves of a voracious diſpoſition, frequently preying even on each other.

The excellence of the trout as an article of food is too well known to require particular notice. In this reſpect, however, as in other fiſhes, thoſe are moſt eſteemed which are natives of the cleareſt waters.

The ſtomach of this fiſh is uncommonly ſtrong and thick ; but this circumſtance is obſerved to be no where ſo remarkable as in thoſe found in ſome of the Iriſh lakes, and particularly in thoſe of the county of Galway. Theſe are called gillaroo-trouts : on the moſt accurate examination, however, it does not appear that they are ſpecifically different from the common trout : but by living much on ſhell-fiſh, and ſwallowing ſmall ſtones at the ſame time, their ſtomachs acquire a much greater degree of thickneſs, and a kind of muſcular appearance, ſo as to reſemble a ſort of gizzard.

Mr. Pennant obſerves, that it is a matter of ſurpriſe that the trout, though ſo common a fiſh, ſhould appear to be unnoticed by the ancients, except Auſonius, who is ſuppoſed to have intended it by the name of ſalar. He mentions it, however, merely on account of its beauty, and without any thing relative to its quality as a food.

Erythrinus. The body of this fiſh is marked with ſcarlet ſpots; the jaws are equal. It is found chiefly in rivers and lakes of Siberia, is about two feet long, and very fat; the fleſh is red and tender; the body is roundiſh and compreſſed; above it is brown; beneath ſcarlet; the fore-part is of a reddiſh-white.

Gœdenii. The head of this ſpecies is ſmall, and the body is ſpotted with red. It inhabits the ſeas of Northern Europe. The body is long and ſlender; it is about 18 inches long, ſilvery; above browniſh; the ſpots are ſurrounded with a white ring.

Hucho. This is of an oblong ſhape, the palate has two lines of teeth; the trunk and fins, except the pectoral, are ſpotted with black. It is full 30 inches long, and inhabits the Northern lakes and rivers; its back is brown; the ſides and belly are white.

* Lacustris, the Lake Trout, has a forked tail; the body is marked with minute black ſpots; and the belly with a longitudinal groove. It inhabits the Northern lakes, and grows to a vaſt ſize.

* Carpio, or Gilt Charr, has a palate with five rows of teeth, which is its ſpecific character. It is found in the rivers of England and Switzerland, and is a very ſmall fiſh.

Alpinus; Red Charr. The back of this fiſh is black; the ſides of a pale blue; the belly is orange. This ſpecies is called by Linnæus the Alpine charr; its conſtant reſidence is in the lakes of the high mountainous parts of Europe. Some few are found in certain lakes in Wales, and in Loch Inch in Scotland, from which laſt it is ſaid to migrate into the Spey to ſpawn. It ſeldom ventures into any running ſtream; its principal reſort is in the cold lakes of the Lapland Alps, where it is fed by the larvæ of gnats that infeſt thoſe regions. The Laplanders, in their long migrations to the diſtant lakes during ſummer, find a ready and luxurious repaſt on theſe fiſhes; which to them are extremely palatable. The largeſt and moſt beautiful charrs are found in the lake of Winander Mere, in Weſtmoreland, and in this reſort we meet not merely with the red, but with the gilt, and the caſe charr. The figure of the charr is more ſlender and lengthened than the trout. The colour of the back is of an olive-green, variegated with ſpots of a duſky white, and others of a dull yellow. The belly is of a pale red, approaching, in the female, to white. The whole body is covered with very minute ſcales.

Salvelinus; Salvelin Trout. Length about twelve inches; ſhape reſembling that of the ſalmon, but rather more ſlender; colour of the back dark browniſh-blue; of the ſides ſilvery, marked with pretty numerous, moderately diſtant, ſmall, round, red ſpots, which are ſometimes ſurrounded with a pale margin; belly red or orange-colour; pectoral, ventral, and anal fins the ſame, but with the two firſt rays white; dorſal and caudal fin blueiſh-brown; adipoſe fin ſmall, pale, and tipped with brown; ſcales rather ſmall than large; lateral line ſtraight; tail moderately bifurcated; both jaws of equal length; irides ſilvery. Native of mountainous lakes in ſeveral parts of Germany, and of ſeveral of the rivers in Siberia, and in ſome of the lakes of our own country, as thoſe of Weſtmoreland, &c. As in others of this genus, thoſe which inhabit the cleareſt and coldeſt waters are obſerved to be of the richeſt colours. It is a fiſh of great delicacy of flavour, and much eſteemed as a food.

Salmarinus. The back of this fiſh is tawny, with yellow ſpots; the tail is forked. It inhabits the cold ſtony rivers of Italy, and reſembles the laſt.

Umbla. The lateral lines being turned up, and the tail forked, conſtitute the ſpecific character of this fiſh. It is found in the lakes of Switzerland and Italy; weighs from one to two pounds; the body above is greeniſh; beneath it is whitiſh; the ſcales are very ſmall and thin; the fleſh is tender, and it turns red in the dreſſing.

Argentinus. The body of this ſpecies is marked with a longitudinal ſilvery ſtripe; the anal fin is very long; and it is found on the coaſt, and in the rivers of Braſil.

Taimen. This fiſh is of a browniſh colour, with numerous darker ſpots; the tail is forked. It inhabits thoſe rivers that empty themſelves into the Frozen ocean. The body is round, and compreſſed towards the tail, a little ſilvery at the ſides; beneath it is white; it is half a yard long; the fleſh is very white.

Nelma. Silvery white; head very long; the lower jaw much longer. It inhabits the larger rivers in Siberia; is two yards long; and the ſcales are large.

Lenok. This is of a pale gold colour, with a few brown ſpots; above it is reddiſh, beneath yellowiſh. It inhabits the rapid and ſtony rivers of the mountains of Siberia, and is chiefly found near water-falls; about a yard long; the body is broad and thick; and the fleſh is white.

Kundscha. Silvery, with white dots; the tail is forked. It inhabits the bays of the Arctic ſeas, and does not aſcend rivers: it is two feet long; it reſembles the eriox, except that the tail is forked; the body above and beneath is marked with a lateral line, which is blueiſh.

Arcticus. Silvery, with four rows of brown dots and fine lines on each ſide; the tail is forked. It inhabits the ſtony rivulets running into the Arctic ſea: it is not longer than one's finger, and reſembles a young thymallus or grayling.

Stagnalis. Above it is browniſh; beneath white; the body is roundiſh, and the upper jaw the longer. It inhabits the remoter mountainous rivers of Greenland: it is about ſeventeen inches long; the body long, growing ſlender towards the tail, and not ſpotted: the fleſh is white.

Rivalis. This is elongated and brown; but the belly is reddiſh and the head obtuſe. It inhabits the muddy rivers and ſtagnant lakes of Greenland, is about ſix inches long, and reſembles the S. carpio, but is longer and more ſlender, and the head is more obtuſe: it feeds on inſects.

Strœmii. The dorſal and ventral fins of this fiſh are edged with white. It inhabits the muddy waters of Denmark.

Lepechini. The upper jaw is a little prominent; the back is brown; the ſides are marked with ſmall ocellate ſpots, ſurrounded with reddiſh; the belly is of the colour of flame. It inhabits the ſtony rivers of Ruſſia and Siberia: it reſembles S. alpinus; is eight inches long; the ſcales are ſmall; the fleſh reddiſh, and very firm.

B. *Dorſal and Anal Fins oppoſite.*

* Eperlanus; Smelt. Of this ſpecies there appear to be two varieties: one not exceeding the length of three or four inches; the other arriving at the general length of ſix, eight, or nine inches, and ſometimes even to twelve or thirteen. The larger variety ſeems to be that ſo frequently ſeen about the Britiſh coaſts, and which is diſtinguiſhed by Dr. Bloch under the name of eperlano-marinus, or ſea-ſmelt. Theſe fiſhes are found about our coaſts throughout the whole year,

and rarely go to any great diſtance from the ſhores, except when they aſcend rivers, either about or at ſome time before the ſpawning ſeaſon. It is obſerved by Mr. Pennant, that in the river Thames and in the Dee, they are taken in great abundance in November, December, and January; but in other rivers not till February, ſpawning in the months of March and April. The ſmelt is a very elegant fiſh; its form beautifully taper; the ſkin thin, and the whole body, but particularly the head, ſemi-tranſparent; the colour of the back is whitiſh, with a caſt of green, beneath which it is varied with blue, and then ſucceeds the beautiful ſilvery gloſs of the abdomen; the ſcales are ſmall, and eaſily rubbed off; the eyes are ſilvery; the under jaw longer than the upper; in front of the upper are four large teeth, thoſe in the ſides of the jaws being ſmall; the tail is forked. This fiſh is an inhabitant of the European ſeas; it has generally a peculiar odour, which in thoſe of Britiſh growth is commonly compared to that of a cucumber, but by ſome to that of a violet.

Saurus. The rays of the anal fin are ten in number. It is found in various parts of Europe, but not in this country.

C. *Teeth hardly viſible, if any.*

Migratorius. The jaws of this fiſh are nearly equal; the dorſal fin is twelve-rayed. It inhabits Baikal, in Siberia, from which it aſcends the rivers that empty themſelves into it for the purpoſe of ſpawning. It is from fourteen inches to two feet long: the body is a little compreſſed, ſilvery, and above grey.

Lavaretus; Gwiniad. The upper jaw of this fiſh is the longer: the dorſal fin is fourteen-rayed. There is however a variety with a broader body and naſiform ſnout, called the *laveret.* This ſpecies is ſaid to conſtitute an intermediate tribe between the trout and the herring, and, like the latter, it dies the inſtant it is taken from the water. It is nearly a foot long, and has two fins upon the back; the firſt is about three inches from the ſnout, and is ſupported by thirteen rays; the ſecond, which is placed near the tail, is thick, fat, and altogether without rays. It is this fin which Willoughby aſſumes as the generic character of all fiſhes of the trout kind. This fiſh, like the charr, is of an alpine nature, and inhabits the lakes of the mountainous parts of Europe. It was introduced from France into Scotland by the unfortunate queen Mary. The gwiniad is a gregarious fiſh: it ſwims near the ſurface in a long column, with a leader, and approaches the ſhores in vaſt ſhoals in ſummer and ſpring, when it is taken for food. In ſome of the German lakes it is caught in vaſt abundance, and ſalted for ſale. The fleſh is of itſelf inſipid, and will not keep without ſalt.

Pidschian. The upper jaw is the longer of the two; the back gibbous; the dorſal rays are thirteen. There is a variety with a broader body, and with fourteen anal rays, called *muchſan.* It inhabits the Oby, is two ſpans long, and reſembles the laſt.

Schokur. The upper jaw of this ſpecies is the longer; the head is ſmall; the dorſal fin angular on the hind part, and twelve-rayed. It is a native of the Oby, is two feet long, and very much reſembles the S. lavaretus, but is larger and a little broader, the head is leſs and compreſſed; the ſnout is rather obtuſe, rounded, with obſolete tubercles; ventral fins with ſhort appendages.

Nasus. The upper jaw is the longer; the head is thick; the dorſal rays are twelve. It inhabits the Oby, is about eighteen inches long; is ſhaped like the gwiniad, but is broader and thicker; the ſcales are large.

Mulleri. Jaws without teeth, the lower are the longer.

Autumnalis. The lower jaw is the longer, dorſal fin is eleven-rayed. This fiſh inhabits the Frozen ſea, and aſcends periodically, in vaſt ſhoals, the rivers which empty themſelves into it: it is eighteen inches long; the body is fat, compreſſed, coated with large ſilvery ſcales: it dies the inſtant it is taken from the water.

Albula. The jaws of this ſpecies are without teeth, the lower is the longer: the ſecond lamina of the gill-covers are ſcimitar-ſhaped. It inhabits divers parts of Europe; is about ſix inches long: the body is of a greeniſh-brown, ſilvery at the ſides; the ſcales are imbricate, entire, roundiſh, ſpotted with black.

Peled. This is without teeth: there are ten rays in the dorſal fin. It is a native of the northern parts of Ruſſia; is about eighteen inches long; the body is fat; the back blueiſh; the ſides and belly white; the head is dotted with brown. It is very nearly allied to the S. albula.

* Thymallus; Grayling Salmon. This elegant ſpecies grows to the length of about eighteen inches, and is an inhabitant of the clearer and colder kind of rivers in many parts of Europe and Aſia, particularly ſuch as flow through mountainous countries. In England it is found in the rivers of Derbyſhire; in ſome of thoſe of the North; in the Tame, near Ludlow; in the Lug and other ſtreams, near Leominſter; and in the river near Chriſtchurch, in Hampſhire. In Lapland it is ſaid to be very common, where the natives make uſe of its inteſtines inſtead of rennet, in preparing the cheeſe which they make from the milk of the rein-deer.

The ſhape of the grayling reſembles that of the trout, but it is rather more ſlender; its colour is a beautiful ſilvery-grey, with numerous longitudinal deeper ſtripes, diſpoſed according to the rows of ſcales, which are of a moderately large ſize; the head, lower fins, and tail, are of a browniſh or rufous caſt; the dorſal fin, which is deeper and broader than in the reſt of the genus, is of a pale violet colour, croſſed by ſeveral duſky bars; the adipoſe fin is very ſmall, and the tail forked. The largeſt Engliſh grayling recorded by Mr. Pennant was taken at Ludlow, and meaſured above half a yard in length, its weight being four pounds eight ounces; the general ſize of the Britiſh ſpecimens being far ſhort of this meaſure.

The grayling, ſays Mr. Pennant, is a voracious fiſh, riſing freely to the fly, and will very eagerly take a bait; it is a very ſwift ſwimmer, diſappearing like the tranſient paſſage of a ſhadow, from whence, perhaps, is derived its ancient name of umbra. It is ſaid to be a fiſh of very quick growth, feeding on water-inſects, the ſmaller kind of teſtacea, and the roe of other fiſhes, as well as on the ſmaller fiſhes themſelves; its ſtomach is ſo ſtrong as to feel almoſt cartilaginous. It ſpawns in April and May, the full-grown ova being nearly of the ſize of peas. The grayling is much eſteemed for the delicacy of its fleſh, which is white, firm, and of a fine flavour, and is conſidered as in the higheſt ſeaſon in the depth of winter.

Maræna. Upper jaw truncate. It inhabits the lakes of Northern Europe: it is above two feet long, is very fertile, and lives in deep waters, except in ſpawning-time, and in the ſpring, when it riſes to the ſurface in ſearch of teſtaceous animals; it is the prey of rapacious fiſhes, and water-fowl; the body above is blackiſh, the ſides blueiſh, inclining to yellow beneath; the belly is white; the fleſh is white and excellent.

Marænula. The lower jaw of this is the longer: there are fourteen rays in the anal fin. It inhabits the lakes of Northern Europe; is from ſix to ten inches long: it is gregarious, and covered with ſilvery ; the ſcales are deciduous ; the body is ſilvery ; the back blueiſh : it is a very fertile fiſh : like the laſt the fleſh is white, and very well taſted.

Wartmanni. Blue, upper jaw truncate. It inhabits the alpine lakes of Switzerland ; is ſeventeen inches long ; is very fertile, and ſeeds on worms, inſects, herbs, and a ſort of ſponge ; the body is whitiſh towards the belly ; the ſcales are very large ; the fleſh is excellent.

Oxyrinchus. Upper-jaw is the longer, and conic. It inhabits the Atlantic ocean.

Vimba. The fleſhy fin is ſlightly ſerrate. It inhabits the rivers of Sweden.

Leucichthys. The upper jaw of this is very broad, entire, and ſhorter ; the lower aſcending, tuberculate at the end. Inhabits the Caſpian ſea ; is three feet long ; the body is oblong, a little compreſſed, ſpotted with black, above it is blackiſh ; the ſcales are roundiſh, ſmooth and ſilvery.

D. *Gill-membrane with not more than four Rays.*

Dentex. This is of a ſilvery hue, with brown and whitiſh lines above ; the fins are whitiſh ; the lower half of the tail is red. It inhabits the Nile and Siberia.

Gasteropelecus. The ventral and fleſhy fins are very ſmall. A variety has yellow fins. This ſpecies inhabits Carolina, Amboyna, Surinam, and India ; the body is compreſſed, very ſmall, ſilvery, with a ſteel gloſs.

Gibbosus. Black, gibbous, compreſſed, the anal fin has fifty rays. It is found at Surinam.

Notatus. This ſpecies has a black ſpot on each ſide near the gill-covers. This is alſo found at Surinam ; the body is oblong, with a black ſpot above the lateral line ; it reſembles the

Bimaculatus, of which the body is compreſſed, with two ſpots ; the anal fin is thirty-two-rayed. It inhabits South America.

Immaculatus. The body is without ſpots ; the anal fin is twelve-rayed. An inhabitant of America.

Fœtens. The rays of the dorſal and anal fins are twelve. It inhabits Carolina ; the body is oval, a little pointed, and of a blackiſh-aſh colour.

Cyprinoides. The firſt rays of the dorſal fin are long, and ſetaceous. It is found in Surinam ; the body is of a ſnow-white.

Niloticus. The body of this is white ; all the fins are yellowiſh. It inhabits the Nile.

Ægyptius. The back is greeniſh ; teeth in the lower jaw are large. It inhabits, as its name imports, Egypt ; the tail is ſcaly at the baſe.

Pulverulentus. The fins are apparently ſlightly duſted ; the lateral line deſcending. It is an inhabitant of America.

Rhombeus. The belly is ſerrate ; the anal and caudal fins are black at the baſe and edge. It inhabits Surinam ; the body is compreſſed, rather oval, but ſubangular on the back, and a little gibbous from the nape to the dorſal fin ; it is of a grey or yellowiſh-ſilvery colour ; towards the back browniſh : it is ſaid to bite off the legs of ducks.

Anostomus. The ſpecific character of this is, that the mouth is ſimous. It inhabits South America and Idia.

Salmulus. The ſamlet is, according to Pennant, the leaſt of the Britiſh ſpecies of this genus, and is frequently ſeen in the river Wye, in the upper part of the Severn, and in the rivers that run into it, in the north of England, and in Wales. It is by ſeveral imagined to be the fry of the ſalmon ; but Mr. Pennant diſſents from this opinion for the following reaſons : firſt, it is well known that the ſalmon-fry never continue in freſh water the whole year, but, as numerous as they appear on their firſt eſcape from the ſpawn, all vaniſh on the firſt vernal flood that happens, which ſweeps them into the ſea, and leaves ſcarcely one behind ; ſecondly, the growth of ſalmon-fry is ſo quick and ſo conſiderable, as ſuddenly to exceed the bulk of the largeſt ſamlet ; for example, the fry that have quitted the freſh water in ſpring, not larger than gudgeons, return into it again a foot or more in length ; thirdly, the ſalmon obtains a conſiderable bulk before it begins to breed ; the ſamlets, on the contrary, are found both male and female of their common ſize, and are readily diſtinguiſhed by being furniſhed with either the hard or ſoft roes ; fourthly, they are found in the freſh waters all times of the year, and even at ſeaſons when the ſalmon-fry have gained a conſiderable ſize. It is well known that at Shrewſbury (where they are called Samſons,) they are found in ſuch quantities in the month of September, that a ſkilful angler, in a coracle, will take with a fly from twelve to ſixteen dozen in a day. They ſpawn in November and December, at which time thoſe of the Severn puſh up towards the head of that river, quitting the ſmaller brooks, and return into them again when they have done ſpawning. They have a general reſemblance to the trout, and muſt therefore be deſcribed comparatively.

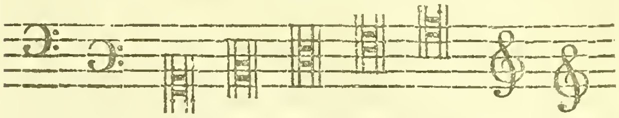
The head is proportionally narrower, and the mouth ſmaller ; the body deeper ; the length ſeldom more than ſix or ſeven inches, or at moſt about eight and a half ; the pectoral fins have generally but one large black ſpot, though ſometimes a ſingle ſmall one attends it ; whereas the pectoral fins of the trout are more numerouſly marked ; the ſpurious or fat fin on the back is never tipped with red, nor are the edges of the anal fin white ; the ſpots on the body are fewer, and not ſo bright ; the body is alſo marked from back to ſides with ſix or ſeven large blueiſh bars ; but this Mr. Pennant allows to be not a certain character, as the ſame is ſometimes obſerved in young trouts ; laſtly, the tail of the ſamlet is much more forked than that of the trout. The ſamlet is very frequent in the rivers of Scotland, where it is called the parr. It is alſo common in the Wye, and is there known by the title of ſkirling or laſpring.

Groenlandicus ; Greenland Salmon. Length about ſeven inches, which it very rarely exceeds ; ſhape lengthened, contracting ſomewhat ſuddenly towards the tail ; dorſal fin placed in the middle of the back ; fins rather large for the ſize of the fiſh ; ſcales ſmall ; tail forked ; colour pale green, with a tinge of brown above ; abdomen and ſides ſilvery ; in the male fiſh, juſt above the lateral line, is a rough faſcia, beſet with minute pyramidal ſcales, ſtanding upright like the pile of a ſhag. The uſe of this villous line is highly ſingular, ſince it is affirmed that while the fiſh is ſwimming, and even when thrown on ſhore, two, three, or even as many as ten will adhere, as if glued together, by means of this pile, inſomuch that if one is taken, the reſt are alſo taken up at the ſame time. This ſpecies ſwarms off the coaſts of Greenland, Iceland, and Newfoundland, and is ſaid to be one of the chief ſupports of the Greenlanders. The inhabitants of Iceland are ſaid to dry great quantities of it, in order to ſerve as a winter food for their cattle, whoſe fleſh is apt to acquire an oily flavour in conſequence. This fiſh lives at ſea the greateſt part of the year ; but in April, May, June, and July, comes in incredible ſhoals into the bays, where immenſe multitudes are taken in nets, and afterwards dried on the rocks. When freſh they are by ſome ſaid to have the ſmell of a cucumber, though others affirm the ſcent is highly unpleaſant. They feed on ſmall crabs and other marine inſects, as well as on the ſmaller fuci and confervæ, on which they are alſo obſerved to depoſit their ova.

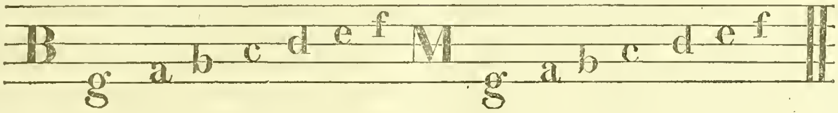
Salmon are cured in this manner; they are firſt ſplit, and rubbed with fine ſalt; and after lying in pickle in great tubs or reſervoirs for ſix weeks, are packed up with layers of coarſe brown Spaniſh ſalt in caſks, ſix of which make a ton. Theſe are exported to Leghorn and Venice at the price of twelve or thirteen pounds *per* ton, but formerly from ſixteen to twenty-four pounds each. For a farther account of ſalmon, ſee *Salmon* FISHERY.

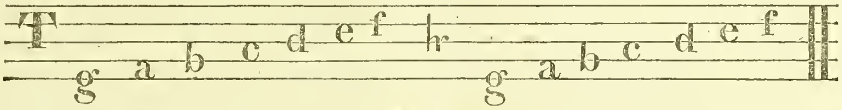
SALMODIA, Ital. pſalm-ſinging. Sometimes bad muſic and bad ſinging are called *ſalmodia*, in deriſion; comparing them to the vulgar muſic and ſinging in parochial churches.

SALMON, THOMAS, in *Biography*, author of "An Eſſay to the Advancement of Muſick, by caſting away the Perplexity of different Cliffs; and uniting all Sorts of Muſick, Lute, Viols, Violins, Organ, Harpſichord, Voice, &c. in one univerſal Character, by Thomas Salmon, A. M. of Trinity College, Oxford," London, 1672. This book is well written, and, though very illiberally treated by Lock, Playford, and ſome other profeſſors, contains nothing that is either abſurd or impracticable; nor could we diſcover any ſolid objection to its doctrines being adopted, beſides the effect it would have upon old muſic, by ſoon rendering it unintelligible. At preſent the tenor clef alone is thought an inſuperable difficulty in our country, by dilettanti performers on the harpſichord; but if Salmon's ſimple and eaſy muſical alphabet were chiefly in uſe, the baſs clef would likewiſe be ſoon rendered as obſolete and difficult as the tenor; ſo that two parts or clefs out of three, in preſent uſe, would become unintelligible. The author's plan was ſimply this: inſtead of the eight or nine clefs that were then in uſe, as,



to expreſs the whole ſcale of ſounds on the five lines and ſpaces in this ſimple manner:





G in every part of the ſcale being on the firſt line, *a* on the firſt ſpace, *b* on the ſecond line, &c. the letters preceding each ſeptenary implying baſs, mean, treble, ſupreme.

This innocent and ingenious propoſal was treated by Lock, in a pamphlet entitled "Obſervations on a late Book called an Eſſay, &c." not only with contempt, but obloquy and unbridled abuſe. There is a portrait of Lock in the muſic-ſchool at Oxford, by the countenance of which, without Lavater's aſſiſtance, or adverting to his treatment of Salmon, and the aſperity of his other writings, we are impreſſed with more than a ſuſpicion of his ungentleneſs and want of urbanity. Several French writers on muſic have done Salmon the honour of approving his plan ſo far as to wiſh to make it their own, and to paſs for its inventors. And though the plan for aboliſhing the clef has been criticiſed by ſubſequent French writers, the plagiariſts ſeem never to have been detected. Indeed the French have frequently diſputed among themſelves the invention. And ſo late as January 1766, a propoſal was publiſhed in the Journal de Paris, for adopting the ſingle clef as a new diſcovery.

SALMON, FRANCIS, a learned Frenchman, who flouriſhed in the laſt century, was deſcended from an opulent family, and born at Paris in 1677. Attached from his earlieſt years to a ſtudious life, he acquired conſiderable ſkill in the learned languages, particularly in thoſe in which the ſcriptures of the Old and New Teſtament are written, and became a very able divine, as well as intimately converſant with the fathers and the councils. In the year 1702 he was created doctor of divinity by the faculty of the Sorbonne, and afterwards, on account of his great knowledge of books, received the appointment of librarian to their ſociety. He died ſuddenly at Chaillot, near Paris, at the age of ſixty, in the year 1736. It is mentioned very much to his praiſe, that young men ever found in him an able and affectionate adviſer, who liberally communicated to them his knowledge, and took great pleaſure in directing them to ſuch books as were beſt adapted to the reſpective ſubjects they were purſuing. As an author he is known by "A Treatiſe on the Study of the Councils and their Collections, with Obſervations on the Authors who have written on the Subject, and on the Choice of their Editions," 1724. This work, which was replete with erudition, was favourably received by the learned world, and tranſlated into Latin, which was printed at Leipſic in 1729. M. Salmon intended to have given a ſupplement to "Father Labbe's Collection of Councils," and had made conſiderable progreſs in it when death put a ſtop to his labours. M. Salmon alſo had projected an "Index Sorbonicus," or alphabetical library, in which was to be given, under the names of the reſpective authors, their acts, lives, chronicles, hiſtories, books, treatiſes, bulls, &c. diſperſed through a vaſt number of miſcellaneous collections. In this taſk he was aſſiſted by four doctors of the Sorbonne, but the only fruit of their labours, as far as the public was concerned, were a "Conſpectus" of the work, and "Epiſtola plurium e Societate ad illuſtrium Marchionem Scipionem Maffeium, de Ratione Indicis Sorbonicis, ſeu Bibliothecæ quam adornant."

SALMON, THOMAS, an Engliſh hiſtorian and general writer, of whoſe perſonal hiſtory nothing is known, except that he died in 1743. He was concerned in writing the "Great Univerſal Dictionary:" he compiled likewiſe a work entitled "The preſent State of all Nations;" and he was author of what was, at one time, a very popular work, entitled "A Geographical Grammar," the plan of which was afterwards adopted by Guthrie. Salmon was author likewiſe of the "Chronological Hiſtory of England," in two vols. 8vo. and of an "Examination of Burnet's Hiſtory of his own Times."

Salmon, in *Ichthyology*. See Salmo.

Salmon-*Peel*, the name of a fiſh found in great plenty in the rivers of Wales, agreeing in the colour of its fleſh, and perhaps in kind, with the common ſalmon.

Salmon-*Sewſe*, a name ſometimes uſed for the young fry of ſalmon.

Salmon-*Pipe*, in our *Old Writers*, an engine to catch ſalmon, or ſuch like fiſh.

Salmon-*Fiſheries*, in *Rural Economy*, thoſe which are deſtined to the preſerving and taking of ſalmon. The ſituations to which fiſheries of this kind are chiefly confined, are thoſe of narrow ſeas, ſhoal eſtuaries, and bays of the ſea, and the mouths of thoſe rivers which communicate with it. The ſalmon-fiſheries of this iſland, and thoſe of Ireland, are of very great national importance, as furniſhing a conſtant and copious ſource and ſupply of human food. They may be ſaid with propriety to rank next to that of the cultivation of land in utility in this intention. The writer of the work on "Landed Property" has remarked, that they have, indeed, one advantage over every other internal produce—their increaſe does not leſſen other articles of human ſuſtenance. The ſalmon does not prey on the produce of the ſoil; nor does it owe its ſize, and nutritive qualities, to the deſtruction of its compatriot tribes. It leaves its native river at an early ſtate of growth; and going even naturaliſts know not whither, returns of ample magnitude, and rich in human nouriſhment; expoſing itſelf in the narroweſt ſtreams; as if nature intended it as a ſpecial boon to the human ſpecies. In every ſtage of ſavageneſs and civilization, it is conceived, the ſalmon muſt have been conſidered as a valuable benefaction to this country.

At the preſent period the ſalmon-fiſheries of this iſland, as well, perhaps, as thoſe of Ireland, are likewiſe of high intereſt and value as the private property of individuals, eſpecially thoſe in the more northern parts of this country. And it is by no means improbable, but that thoſe in the more ſouthern diſtricts of the kingdom, may admit of very great improvement by proper attention and management.

The ſalmon in its young as well as more advanced ſtate of growth has numerous enemies to contend with. In its early ſtate fiſhes of prey, ſuch as the pike and trouts of ſize, are highly deſtructive of it. They, therefore, as well as any others that may be injurious in the ſame way, ſhould conſtantly be conſidered as vermin in rivers down which ſamlets are to paſs, and be treated accordingly. The hern is equally deſtructive of the young ſalmon, particularly in the higher branches of rivers; and though it may ſometimes have been nurſed up in places for amuſement, ſhould now be every where near this ſort of fiſheries deſtroyed, as it is thought that the cormorant might be more wiſely propagated and protected, as being infinitely leſs deſtructive of freſh-water fiſh.

The otter is another well-known enemy of fiſh; but he is ſuppoſed to be more deſtructive to the grown ſalmon, than to thoſe which are in their young ſtate. He, too, ſhould conſequently be baniſhed from the borders of all ſalmon rivers.

But a ſort of vermin, ſays the above writer, which is more injurious and deſtructive to the young ſalmon, than all theſe, is the angler; who, during minor floods, while they are attempting to make their eſcape downward to the ſea, takes and counts his victims by the ſcore. The net-fiſher is ſtill more miſchievous: but the miller moſt of all; who takes them, in his mill-traps, locks, and baſkets, at once, by the buſhel or the ſack. The night prowling fiſher with his light, is alſo a prodigious enemy to the ſalmon in the narrow ſtreams and branches of rivers in ſome places. All theſe ſhould, of courſe, be obviated as much as poſſible in a well-managed ſalmon-fiſhery, as well as in any other that may be found to exiſt.

Should the notion that ſalmon return to their native rivers prove well founded, and the whole of a ſalmon river belong to the ſame proprietor, the crime and miſchief of deſtroying young ſalmon become perfectly of the ſame nature, as that of deſtroying the young of agricultural animals. It conſequently, it is contended, behoves thoſe who have the ſuperintendance of ſalmon-fiſheries, no matter whether they are entire or joint properties, to ſee that the one is protected with the ſame zeal and aſſiduity as that of the other.

Allowing, therefore, that the individual ſalmon which are bred in any certain river, inſtinctively return again to the ſame from the ſea, where they have been for food and to ſuit their particular economy; the moſt evident and effectual means of improvement in any particular river, would ſeem to be thoſe of permitting a ſufficient number of grown ſalmon to go freely up to the *ſpawning* grounds; *protecting* them well while there; and carefully guarding the infant ſhoal, in their paſſage and progreſs from thence to the ocean. On the ſuppoſition of this proneneſs in ſalmon to come back to their native rivers, the taking of ſuch vaſt numbers of the young fiſh, on their return, in the latter end of the year, in a ſeaward direction, is alſo contended by ſome to be ſuch a waſteful and improvident deſtruction of the ſpecies, as to loudly call for ſome effectual remedy, as the late alarming deficiencies in the ſalmon-fiſheries of ſome rivers and other places, may thereby be in ſome degree guarded againſt and prevented. It has been aſcertained on good authority, that at this ſeaſon, on ſome rivers the quantity taken in one week has not been leſs than a thouſand, and in others not below half that number; while in many more the quantities may have been ſtill greater, in the ſame ſpace of time. In ſome caſes it has indeed been ſo great, as for the young ſalmon-fry, or gravellers, to be given even to the hogs. The high weirs which are formed acroſs the lower parts of rivers in many inſtances are highly prejudicial to ſalmon-fiſheries, by hindering the grown fiſh from getting up to the ſhallow parts of them above, in order to produce their young. This is the caſe at preſent with the ſalmon-fiſhery of the Lane near Lancaſter, and the ſame was the caſe until lately with that of the Ribble, near Preſton, in the ſame county, which is now lowered in conſequence of a judicial deciſion.

Some particulars in reſpect to the methods of taking the grown ſalmon, that are practiſed in different caſes, may be noticed in this place, but the whole detail would far exceed our limits. In all ſituations where ſalmon fiſheries exiſt, there are moſtly men who are accuſtomed to the buſineſs in every caſe of the ordinary kind.

In moſt ſituations to which this ſort of fiſheries is reſtricted, and which have been pointed out above, the ſalmons moſtly ſtay ſome length of time, more or leſs, as is perhaps directed by their different ſtates of forwardneſs in regard to ſpawning; and it is here where the various devices for taking them are had recourſe to.

In the fiſhery of this nature in the widely extended ſhallow eſtuary, uſually denominated Solway-frith, which divides the county of Cumberland from that of Dumfries, there are two of the different intereſting methods which are there practiſed, the writer of a late work on rural ſubjects ſays, which deſerve particular attention. He remarks that, beſides the open channels which are worn by the ſtreams of the Eſk, the Eden, and the other rivers and brooks which empty themſelves into the above common eſtuary, the ſands of which its baſe is conſtituted and compoſed, and which are left dry at low water, are formed into ridges and vallies by the tides and tempeſtuous weather. The lower ends of theſe vallies, or falſe channels, are wide and deep; opening downward towards the ſea, their upper ends growing narrower, and ſhallower, until they cloſe in points at the tops of the ſand-banks. As the tide flows upward, the ſalmon, either in ſearch of their food, or the channel of the river to which they are deſtined, enter theſe vallies, ſtrips of water, or lakes. But finding, on the turn of the tide, that their paſſage further upward is ſtopped, they naturally return again with it into the deep water, where they remain until the next ſucceeding tide. The manorial and other proprietors of theſe ſand-banks, it is ſaid, having diſcovered this fact in their general habits and economy, have, from time immemorial, it is underſtood, run lines of nets, during the fiſhing ſeaſon, acroſs the lower ends of theſe ſtrips, lakes, or vallies, half a mile or more, perhaps, in width; which being ſuſpended in ſuch a manner as to be lifted from the ſurface of the ground, by the current of the tide ſtream, in flowing upward, the fiſh find no impediment or difficulty in paſſing underneath them, up into the lakes, channels, or ſtrips of water. However, on the tides ebbing or turning, their lower edges fall down cloſe to the ſurface of the ſand, and thus effectually prevent and ſecure them from a return. They are, of courſe, left dry, or in ſhallow water, ſo as to be eaſily taken by the fiſhermen.

The other uſual method which is had recourſe to in the ſame fiſhery tract, for the taking of this ſort of fiſh, is that founded on a well-known habit of ſalmon, when they firſt make the land, and enter into the narrow ſeas and eſtuaries, of keeping much to, and along the ſhores; the reaſon of which is a matter of no conſequence, whether it be that of enabling them to hit with greater certainty their native rivers and ſtreams; that of rubbing off the vermin, with which, in general, they are more or leſs infeſted, when they return from the ocean; the being in ſearch of their proper and particular food; or any other.

This mode of fiſhing for, and taking ſalmon, if not an invention of modern date, has, it is ſaid, been recently raiſed to its preſent ſtate of perfection by an expert and enterpriſing ſalmon fiſher and farmer in the vicinity of the little town of Annon; who has turned it to very great profit and advantage. At a ſhort diſtance below the mouth of the river of the ſame name, it is ſtated that he has run out a long line of a ſort of tall net fence, which extends ſeveral hundred yards, and in ſomewhat an oblique direction from the line of the ſhore, with which it makes an acute angle, and cloſes in with, at the upper end; thus forming in effect, it is obſerved, an artificial lake or plot of water, as it were; one ſide of which is the beach, the other the net fence. The lower end is, it is noticed, ingeniouſly guarded with nets of a more trap-like conſtruction than thoſe which are in uſe for natural lakes and bays; in which the fiſh are found to lie more quietly until the turn of the tide, or its becoming ebb. It is added that in this immenſe trap or contrivance, great quantities, not only of ſalmon, but of cod, ling, ſoals, and other ſorts of white fiſh are taken and ſecured. And that no place in the whole iſland is known, where *ſea* fiſhing for the taking of ſalmon can be ſtudied and entered into the nature of, with ſo much profit and advantage, as on the ſhores and banks of this diſtrict in the ſouth-weſt of Scotland.

Something of this method is alſo practiſed on a ſmall ſcale in the taking, or catching as it is called, of this ſort of fiſh, near the extenſive bay of Morecombe, on the coaſts or ſhores of Silverdale, and other places in the northern parts of Lancaſhire. In the vaſt tract of the ſands cauſed by the ſea in theſe parts, there are ſome large channels, and a number of ſmaller ones, formed by the ſtreams of the main rivers, and thoſe of the little rivulets, that abound with ſalmon and flat fiſh of other kinds, acroſs which nets of a ſomewhat ſimilar kind are ſet, and the fiſh taken during the ebb of the tides by the fiſhermen. Somewhat the ſame plan may likewiſe be purſued in the taking of them in a number of other ſea diſtricts in the ſame part of the kingdom. In the very extenſive ſea fiſheries of this deſcription, too, in the northern parts of Scotland, there is ſomething of the ſame nature prevailing in the practice of taking the ſalmon by the fiſhermen, but they likewiſe have recourſe to the method of ſpearing them, or ſtriking them with an inſtrument of the ſpear kind, made for the purpoſe, while they are in the water, which readily ſecures them, and at which the fiſhermen are particularly dextrous and expert.

In the river fiſhing for ſalmon, the buſineſs is principally done either by the locks and other contrivances in the weirs of them, or with the ſeine, or long draft net, the conſtruction and application of which are now very generally underſtood. It is conſequently only neceſſary to remark, in regard to them, the above writer ſays, that in rivers which are liable to frequent and great changes in the depth and ſtrength of current, on account of tides and floods, it is deſirable and proper to have nets of different textures, or widths of meſhes, as well as of different depths; as one of the formation which is beſt ſuited to the ordinary ſtate of the water, and to the ſize of the fiſh which frequent it, as ſalmon peels, trouts, mullets, and other ſmall-ſized fiſh, which are in ſome rivers uſually taken with the ſalmon; and another with more depth, and wider meſhes, to be employed during high water, and in ſtrong currents, when the larger ſalmon ſeldom fail to haſten upward; as the ſame ſtrength of hands which is able to draw a cloſe ſhallow net, can work a deeper one with larger meſhes. And in wide rivers with flat ſhores, a variety of nets is thought to be required, of different lengths and depths, ſo as to ſuit every height and width of the water in them.

The ſalmon fiſheries in the northern parts of Scotland are of very great importance, where, beſides thoſe upon the ocean and the different arms of the ſea, they are met with on the numerous lochs, lakes, and rivers which have a communication with it. The writer of the agricultural account of the Inverneſs diſtrict, in the above tract of country, ſtates, that the ſalmon-fiſhing, or fiſhery on the river Lochy, which is a joint property, rents at 270*l.* a-year. That, on the river Morer, ſalmon are alſo taken, but turn to little account, in conſequence of the difficulty of preſerving, and conveying them to more populous diſtricts, probably from the want of proper ſalt and better roads. Lochneſs, and the various waters that flow into it, are ſaid to afford ſalmon. In the lake they are ſtated to be caught by the ſeine; but in the rivers the fiſhes are diſturbed by the floating of timber down them, and, of courſe, fewer are taken. At the houſe of Invermoriſton, the manner of taking this fiſh is noticed as ſingular. It is this: about a quarter of a mile above the houſe the river flows, it is ſaid, in a narrow chaſm, between two projecting rocks. The fiſherman ſeats himſelf on a cliff of this rock, right over the caſcade, with a ſpear in his hand, which has a line fixed to the upper end of the ſhaft, ſimilar to the practice of fiſhing for whales with harpoons. Whenever the ſalmon makes a ſpring to gain the aſcent and throw itſelf over the cataract, the ſpear-man ſtrikes the fiſh, and lets the ſhaft go, holding only by the line, until the fiſh has exhauſted his ſtrength; then the ſpear and the fiſh together are thrown aſhore by the ſtream, and taken out at the lower ſide of the pool. They are taken, in this way, in ſuch numbers, that eighteen have been killed in this place before breakfaſt. At Killin, in Perthſhire, and upon the river Urchay, in Argyleſhire, ſalmon have alſo, it is ſaid, been caught in ſimilar circumſtances, and with equal peril to the fiſherman or the perſon employed in the buſineſs.

It is added that the ſalmon fiſhing or fiſhery at Beauly, in the firſt of the above diſtricts, lets for 1260*l.* a-year. And that, on the river Neſs, the fiſhing within the then preceding eleven years, had riſen in value from 200*l.* to 1200*l.* a-year. More than ſix years having elapſed ſince that period, it is now probably higher. This is alſo a joint-property. Loch Inch has likewiſe a ſmall ſalmon fiſhery, but it is not let. In ſome of theſe ſalmon fiſheries there are other ſorts of fiſh of the flounder and different flat kinds. And herrings viſit other lochs and friths. In that of Murray they are often taken in great numbers; beſides the white fiſh, which are frequently found as far out as Tarbetneſs, and caught by different numbers of boats of two proprietors, as well as by ſome fiſhermen in a village near the place. The fiſhing of herrings and for white fiſh upon the weſt coaſt of this diſtrict is, as well as that for ſalmon, of inconceivable importance in a national point of view.

The ſalmon fiſhing on the river Tay, and its branches, in the county of Perth, is now alſo of great importance, and has been brought to a perfection which formerly was not thought of, by the exertions of Mr. Richardſon of that diſtrict, who ſtates that the valuable part of the ſalmon fiſhing on that river is from the influx of the Iſla, down to Newburgh on the ſouth, and Errol on the north ſide of it. The annual rent of the fiſhings or fiſheries on this ſpace was, in 1795, ſeven thouſand pounds, or nearly that ſum; of which lord Gray, as principal heritor, draws two thouſand five hundred and ſixty pounds. And above the Iſla, on the courſe of the ſame river up to the loch of the ſame name, and upon the Tumble which joins it, there are ſcattered fiſhings belonging to different proprietors, to the amount of two or three hundred pounds a-year. The annual rents do not, however, bear proportion to the quantity of fiſh that is taken; as in ſmall fiſhings more fiſh are taken in proportion than in thoſe of greater conſequence. The charge of fiſhing muſt be paid before any thing can go as rent; after this the benefit of the catch is ſuppoſed to accrue to the proprietors. From the above places, on the different ſides of the Tay, down to the town of Dundee, the fiſhings are inconſiderable, not more than one hundred pounds of yearly rent. From the laſt-named town to the mouth of the river, including both ſides, the yearly rents may amount to from three hundred and fifty to four hundred pounds.

The greater part of the ſalmon taken in theſe fiſhings was formerly, it is ſaid, ſalted and ſent to foreign markets. But within the laſt forty or fifty years, the produce has been conveyed to London in a pickled ſtate, that is boiled and preſerved in vinegar, and then packed in ſmall wooden veſſels called kits. During that period a part was alſo ſent raw to the above city, put up with ſtraw in boxes.

But a few years ſince a method was diſcovered and adviſed of packing and preſerving the raw fiſh in ice, in which ſtate almoſt all the ſalmon that are taken in the above river before and during the month of May, are ſent to this metropolis. The application of this diſcovery, in this diſtrict, was firſt owing to Mr. Dempſter; and the benefit of it is very great, not only to the whole fiſhery on the river Tay, but to the ſalmon trade in general.

Nothing new has lately been diſcovered in the method of fiſhing in theſe caſes, except ſuch as have been already ſuggeſted in regard to the nets, and the manner of uſing them in different ſituations and circumſtances of the rivers, &c.

The opinion that the number of ſalmon on the Tay has, for many years paſt, been on the decreaſe, ſeems to be well founded; for though the numbers taken may vary much in different ſeaſons, without differing greatly in the ſucceeding years, the average of the laſt nineteen, it is contended, will be found far ſhort of the preceding nineteen. This is attempted to be accounted for much in the ſame manner which has been noticed above, in regard to preſerving the fiſh while in their young ſtate.

The lake fiſheries of the northern parts of the kingdom are but of ſmall extent, and only of little conſequence, except where charr abound. They are principally confined to one mountainous diſtrict towards the north, and their improvements hitherto have been few and of a trifling nature.

There are fiſheries, however, of other kinds in ſeveral diſtricts on the more ſouthern borders of the ſea, that are highly valuable and important. Thoſe of Cornwall, Devonſhire, and ſome other parts, furniſh a vaſt quantity of fiſh of different kinds. Brixham, a dependency of the port of Dartmouth, in the latter of the above counties, has not leſs than one hundred ſail of veſſels, of the boat kind, employed in the fiſheries, which are now made larger than formerly, ſo as to contain about eighty quarters of culm of ſixteen upheaped buſhels each. The fiſh-markets of the metropolis, Bath, and Briſtol, are thereby ſupplied to a conſiderable extent. In the ſummer ſeaſon ſometimes, when the overflow is likely to occaſion a glut, the whiting, flounders, thornbacks, gurnet, and others, are ſaid to be firſt cleaned, and then well waſhed in ſalt-water; and afterwards gently ſalted and dried in the ſun. Thus prepared, they are obſerved to make an excellent reliſh, and are called *buckhorn*, being always greatly in demand for the uſe of the navy, during war, and along the French coaſt in the time of peace, moſtly ſelling from 10*s.* to 16*s.* the hundred fiſh, in proportion to the ſize and quality. The herring and pilchard fiſheries of theſe parts are likewiſe extenſive. But both the ſalmon and the herring which uſed to frequent the ſame ſhores and rivers in ſome inſtances, eſpecially in the above diſtrict, have now much forſaken them, though the former are remembered by ſome perſons to have been formerly ſo abundant that farm ſervants demanded to have them only twice a week as food. The chief haunts of the latter ſort of fiſh are now the ſouthern coaſts of this county, of Dorſetſhire, and Cornwall.

The Iriſh ſalmon fiſheries are equally productive and abundant with thoſe of England and Scotland.

By proper regulations in regard to the duties and ſupplies of ſalt, the fiſheries of this kingdom would probably be vaſtly increaſed. See FISHERY.

SALMON *Cove*, in *Geography*, a cove or harbour in Obſervatory inlet, on the W. coaſt of America, ſo called from the abundance of that fiſh found by Capt. Vancouver. N. lat. 55° 20′. E. long. 230° 21′.

SALMON *Creek*, a ſmall ſtream, which riſes near a branch of Fiſh creek, and enters Oneida lake.

SALMON *Creek*, *Big*, a river of Upper Canada, which runs into lake Ontario, between the townſhips of Cramaki and Haldimand.

SALMON *Fall*, a name given to Piſcataqua river from its head to the lower falls of Berwick. See PISCATAQUA.

SALMON *Falls*, a cataract in Saco river, on the line between the ſtates of Maine and New Hampſhire; 20 miles above Saco falls.

Salmon *Point* lies on the E. coaſt of the iſland of Newfoundland, and N.E. of Clarence point, which is the N.E. entrance into Conception bay.

Salmon *River*, a conſiderable ſtream, which, running N., diſcharges its waters into lake Ontario. It is navigable two miles, has abundance of fiſh, and 15 miles from its mouth has a perpendicular fall of 106 feet.—Alſo, a river of New Brunſwick, which runs into the St. John, N. lat. 47°. W. long. 67° 32′.—Alſo, a river of Canada, which runs into the Pickoouagamis, N. lat. 48° 30′. W. long. 73° 30′.

SALMONA, in *Ancient Geography*, a place in the 35th ſtation of the Iſraelites, where they encamped after leaving mount Hor.

Salmona, a river of Gaul, now *Salm*.—Alſo, a town of Triphylia, N. of the river Alpheus and near that of Enipeus. See Virgil, l. vi. v. 581.—Alſo, a city and ſea-port in the iſle of Crete. Acts, xxvii. 7.

SALMOR, in *Geography*, a town of France, in the department of the Stura; 8 miles E. of Savigliano.

SALMULUS, in *Ichthyology*, the name of a ſmall fiſh of the truttaceous kind, called in Engliſh a *ſamlet*. See Salmo.

SALMUNSTER, in *Geography*, a town of Weſtphalia, in the biſhopric of Fulda; 25 miles S.W. of Fulda.

SALMUNTI, in *Ancient Geography*, a maritime town of Aſia, in which Alexander aſſiſted at the games of the theatre. Arrian places it in Caramania, and Diodorus Siculus on the Erythrean ſea.

SALMYDESSUS, a town and port of Thrace, upon the coaſt of the Euxine ſea, in the weſtern part, to the north of Byſantium, and towards the extremity of mount Rhodope. Ptolemy calls it Almydiſſus, and Pliny Halmydeſſus. D'Anville ſuppoſes that it is the preſent Midjah.—Alſo, a river that paſſed by the ſame town.—Alſo, a gulf of the Euxine ſea.

SALO, Xalon, a river of Hiſpania Citerior, which almoſt encompaſſed the town of Bilbilis.

Salo, in *Geography*, a town of Italy, in the department of the Benaco, ſituated at the foot of a mountain, near lake Garda, and containing 5000 inhabitants, who carry on a good trade; 14 miles N.E. of Breſcia.—Alſo, a town of Sweden, in the government of Ulea; 4 miles S. of Braheſtad.—Alſo, a town of Sweden, in the government of Abo; 26 miles S.E. of Abo.—Alſo, a town of South America, in the province of Tucuman; 100 miles S.E. of Rioja.

Salo *Bay*, a bay on the N. coaſt of the iſland of Java. S. lat. 6° 58′. E. long. 112° 36′.

SALOBRENNA, a town of Spain, in the province of Grenada, near the coaſt of the Mediterranean, with a ſtrong caſtle, in which the Mooriſh kings formerly kept their treaſure. The trade of the inhabitants in ſugar and fiſh is conſiderable; four miles W. of Motril.

SALOMBO, a cluſter of ſmall iſlands in the Eaſt Indian ocean. S. lat. 5° 30′. E. long. 113° 15′.

SALOMON Islands. See Solomon *Iſlands*.

SALOMONIA, in *Botany*, named by Loureiro, after king Solomon, whoſe botanical fame reſts on the authority of the Holy Scriptures.—Loureir. Cochinch. 14.—Claſs and order, *Monandria Monogynia*. Nat. Ord. uncertain, but it has been ſuggeſted by ſir J. E. Smith, ſimply from the deſcription of Loureiro, that it ſhould be referred to the *Acanthi* of Juſſieu, near *Juſticia*.

Gen. Ch. *Cal.* Perianth inferior, compreſſed, cloven into five, awl-ſhaped, ſhort, nearly equal, rather ſpreading ſegments. *Cor.* of one petal, its tube cylindrical, ſplit longitudinally on one ſide; limb ſhort, divided into three, rounded, erect ſegments, the middle one longer, hooded. *Stam.* Filament one, thread-ſhaped, ſhort, placed on the middle ſegment of the limb, and about the ſame length; anther ovate, incumbent, covered by the hood of the ſegment. *Piſt.* Germen ſuperior, roundiſh, compreſſed; ſtyle inflexed, ſwelling in the middle, ſhorter than the ſtamen; ſtigma thickiſh. *Peric.* Pouch compreſſed, two-lobed, rough, of two cells. *Seeds* ſolitary, nearly ovate, compreſſed.

Eſſ. Ch. Calyx five-cleft, inferior. Limb of the corolla three-cleft. Capſule of two cells. Seeds ſolitary.

1. S. *cantonenſis*. Loureir.—Found on waſte ground in the neighbourhood of Canton.—"*Stem* herbaceous, annual, ſix inches high, erect, furrowed, much branched. *Leaves* heart-ſhaped, pointed, entire, ſmooth, ſcattered on ſhort ſtalks. *Flowers* violet-coloured, in ſimple, erect, terminal *ſpikes*."

SALON, or Saloon, in *Architecture*, a grand, lofty, ſpacious ſort of hall, vaulted at top, and uſually comprehending two ſtories, with two ranges of windows.

The ſalon is a grand room in the middle of a building, or at the head of the gallery, &c. Its faces, or ſides, are all to have a ſymmetry with each other; and as it uſually takes up the height of two ſtories, its ceiling, Daviler obſerves, ſhould be made with a moderate ſweep.

The ſalon is a ſtate-room; it is much uſed in the palaces in Italy, and from thence the mode came to us. Ambaſſadors and other great viſitors are uſually received in the ſalon.

It is ſometimes built ſquare, ſometimes round or oval, ſometimes octagonal, as at Marly, and ſometimes in other forms.

To find the ſuperficies of a ſalon, find its breadth by applying a ſtring cloſe to it acroſs the ſurface; find alſo its length by meaſuring along the middle of it, quite round the room; and then multiply theſe reſults together for the ſurface. To find its ſolid content, multiply the area of a tranſverſe ſection by the compaſs taken round the middle part; ſubtract this product from the whole vacuity of the room, ſuppoſing the walls to go upright all the height to the flat ceiling: and the difference will be the anſwer. Hutton's Menſuration, p. 626.

Salon, in *Geography*, a town of France, in the department of the Mouths of the Rhone, and chief place of a canton, in the diſtrict of Aix; 18 miles W.N.W. of Aix. The place contains 5300, and the canton 13,450 inhabitants, on a territory of 275 kiliometres, in 8 communes. N. lat. 43° 38′. E. long. 5° 10′.

SALONA, a town of European Turkey, in the province of Livadia, ſituated on a river, which runs into a bay of the gulf of Lepanto. It was anciently called "Amphiſſa." The inhabitants are partly Greeks, and partly Turks, and it is the ſee of a biſhop, ſuffragan of Athens; 22 miles N.W. of Livadia. N. lat. 38° 48′. E. long. 22° 31′. The *gulf of Salona* is a bay N. of the gulf of Lepanto; 20 miles W. of Livadia.

Salona, a ſea-port of Dalmatia, ſituated in a ſmall bay of the Adriatic. This town was deſtroyed by Auguſtus, and rebuilt by Tiberius, who ſent hither a Roman colony, and made it the capital of Illyricum. It was alſo the rendezvous of the Roman fleet, and famous for its purple dye, and for its manufacture of helmets, coats of mail, and other armour. It was the retreat of the emperor Diocletian; but it is now much reduced; 6 miles N. of

Spalatro. So late as the 16th century, the remains of a theatre, and a confuſed proſpect of broken arches and marble columns, continued to atteſt the ancient ſplendour of Salona. About ſix or ſeven miles from the city, Diocletian conſtructed a magnificent palace, with a view of the abdication of the empire; and for this purpoſe he ſelected a ſpot which united all that could contribute either to health or luxury. This palace, though mentioned by Conſtantine with contempt, covered an extent of ground conſiſting of between nine and ten Engliſh acres. The form was quadrangular, flanked with ſixteen towers. Two of the ſides were near ſix hundred, and the other two near ſeven hundred feet in length. The whole was conſtructed of a beautiful free-ſtone, extracted from the neighbouring quarries of Trau or Tragutium, and very little inferior to marble itſelf. Four ſtreets, interſecting each other at right angles, divided the ſeveral parts of this great edifice, and the approach to the principal apartment was from a very ſtately entrance, which is ſtill denominated the *Golden Gate.* The approach was terminated by a periſtylium of granite columns, on one ſide of which we diſcover the ſquare temple of Æſculapius, on the other the octagon temple of Jupiter. The latter of thoſe deities Diocletian revered as the patron of his fortunes, the former as the protector of his health. By comparing the preſent remains with the precepts of Vitruvius, the ſeveral parts of the building, the baths, bed-chamber, the atrium, the baſilica, and the Cyzicene, Corinthian, and Egyptian halls, have been deſcribed with ſome degree of preciſion, or at leaſt of probability. Their forms were various, their proportions juſt, but they were all attended with two imperfections, very repugnant to our modern notions of taſte and conveniency. Theſe ſtately rooms had neither windows nor chimnies. They were lighted from the top (for the building ſeems to have conſiſted of no more than one ſtory), and they received their heat by the help of pipes that were conveyed along the walls. The range of principal apartments was protected towards the ſouth-weſt, by a portico of five hundred and ſeventeen feet long, which muſt have formed a very noble and delightful walk, when the beauties of painting and ſculpture were added to thoſe of the proſpect. Out of the ruins of this magnificent edifice have ſprung the village of Aſpalathus, and long afterwards the provincial town of *Spalatro;* which ſee. N. lat. 43° 26′. E. long. 16° 44′.

SALONI, in *Ancient Geography*, a town of Aſia, in Bithynia.

SALONIKI, in *Geography*, a ſea-port town of European Turkey, and the moſt conſiderable place in the province of Macedonia, is ſituated on a gulf to which it gives name. It was formerly called Halia and Therma; but Caſſander, who rebuilt it, gave it the name of his wife "Theſſalonica," who was the ſiſter of Alexander the Great. Its convenient ſituation for trade has ſecured to it the favourable notice of the ſeveral conquerors of Macedonia. It is alſo diſtinguiſhed by ſeveral curious remains of antiquity, ſuch as triumphal arches, one of which, in honour of the emperor Antoninus, is now almoſt entire, and churches of extraordinary beauty, now converted into Turkiſh moſques, and of theſe that of St. Demetrius conſiſts of one church erected over another, and is ornamented by more than 1000 pillars of jaſper, porphyry, &c. Without the city are many antique fragments with inſcriptions, and here are alſo found many ancient coins. This town is the reſidence of a Turkiſh pacha, and alſo of a Catholic and Greek archbiſhop. In the year 1313 it was ſold to the Venetians, who were about eight years afterwards diſpoſſeſſed of it by Amurath II.; 272 miles W. of Conſtantinople. N. lat. 40° 40′. E. long. 23°. See Thessalonica.

SALOP. See Shrewsbury.

SALOPAR, a town of the iſland of Ceylon; 18 miles N.N.W. of Trincomalee.

SALORANI, a town of Poland, in the palatinate of Braclaw, on the Bog; 12 miles E. of Koniecpole.

SALORI, a town of the iſland of Sardinia; 20 miles W. of Cagliari.

SALORNAY, a town of France, in the department of the Saône and Loire, on the river Guye; 16 miles N.W. of Macon.

SALOUN, a town of Perſia, in the province of Mazanderan, on the Caſpian ſea; 20 miles N.W. of Amol.

SALOWACKI, a ſmall iſland in the Eaſt Indian ſea. N. lat. 3° 50′. E. long. 131° 38′.

SALPA, in *Zoology*, a genus of the Vermes Molluſca claſs and order. The generic character is as follows: the body is looſe, nayant, gelatinous, tubular, and open at each extremity: the inteſtine is placed obliquely. The animals of this genus are of a gregarious nature, and often adhere together; they ſwim with great facility, and have the power of contracting or opening at pleaſure the cavities at the extremities. There are eleven ſpecies, inhabitants, for the moſt part, of the Mediterranean, ſeparated into two diviſions, *viz.* into thoſe which are furniſhed with an appendage; and thoſe which are without the terminal appendage.

The diviſion A, furniſhed with an appendage, contains four

Species.

Maxima. The body of this ſpecies has a ſmall appendage at each extremity. All the ſpecies in this diviſion are inhabitants of the Mediterranean. The colour of the maxima is hyaline, with a blueiſh caſt, about a ſpan long, ſomewhat quadrangular, with a dull teſtaceous ſpot at the lower end; the lower appendage is ſubulate, the upper conic.

Pinnata. The ſpecific character of this is, that it has a terminal mouth; the back is marked with a yellow and white line, and the abdomen has two reddiſh-white lines. The body is about two inches long, nearly triangular, hyaline, with an opaque line on the back; the appendage reſembles a fin, excepting that it is rather triangular.

Democratica. Body faſciate, and prickly behind. It inhabits the Mediterranean in large groups, and ſwimming confuſedly in all directions; about an inch long. The body is oval, truncate before, and ending in about eight ſpines behind, with a blueiſh nucleus at the baſe, or a radiate circle.

Mucronata. Mouth lateral; the front is marked with a hyaline ſpine placed on the right ſide, and another at the tail placed on the left ſide; the nucleus or ſpot behind is oblong and blue. It is about an inch long, rather oblong and ovate, and pointed behind.

The diviſion B, without the terminal appendage, contains ſeven

Species.

Punctata. Mouth nearly terminal; back dotted with red, and mucronate behind; the tail is projecting. This and the two following are natives of the Mediterranean. The body is an inch and half long; hyaline, with bands ſcarcely viſible on the abdomen; it has a nucleus or ſpot near the tail, opaque, and yellowiſh-ferruginous.

Confœderata. The mouth of this ſpecies is terminal;

and the back gibbous. The body is not more than an inch long; it is nearly quadrangular, hyaline, ſoft, with a globular nucleus behind the gibboſity of the back, is opaque, and of a reddiſh-brown, with a pellucid line proceeding from it.

Fasciata. This is ovate-oblong; the mouth is terminal; the abdomen faſciate; inteſtine filiform, incurved above the nucleus or ſpot. The body is an inch and half long, hyaline, with five bands on the abdomen; the ſpot is marginal, opaque, and ferruginous.

Sipho. Subcylindrical, obtuſe, hyaline, with a reddiſh-brown ſpot: in the front are two ſmall tubes, the tips of which are perforated and red. This is a native of the Red ſea. The body is not an inch long; it is affixed by its baſe to ſtones or ſponge; the ſpot is near the baſe, globular and opaque; the inteſtine is blueiſh-brown.

Africana. This ſpecies is ſubtriangular tranſverſely, with ten ſtriæ; the mouth is terminal; the baſe has a gibboſity, and three ſpots. It inhabits the northern ſhores of Africa, and is about an inch and half long. The body is hyaline, the firſt ſpot is opaque, brown, and globular, the reſt whitiſh and almoſt pellucid.

Solitaria. This is hyaline, oval; the mouth is terminal, with a blue tube; the vent is lateral and blue. This is found in the Red ſea, adhering to weeds, graſs, &c. It is leſs than the laſt, and the body depreſſed; the ſpot near the middle at the baſe is globular, and of a pale reddiſh-brown.

Polycratica. Mouth placed beneath the upper extremity; the front and tail truncate. It is found in the Mediterranean. The body is about an inch and half long; the abdomen is marked with five tranſverſe bands; the nucleus is globular and brown.

Salpa, in *Ichthyology*, a ſpecies of *Sparus*, which ſee.

SALPE, in *Geography*, a town of Naples, in Capitanata, near the ſize of the ancient Salapia. It was once the ſee of a biſhop, removed to Trani. In its vicinity are ſome ſalt-works; 13 miles S. of Manfredonia.

SALPHA, a town of Hindooſtan, in Viſiapour; 20 miles N.N.E. of Sattarah.

SALPINGO-PHARYNGEUS, in *Anatomy*, a name given to a ſlender bundle of muſcular fibres in the pharynx. See Deglutition.

SALPINGO-STAPHYLINUS, is a name given by ſome of the older anatomiſts to the levator palati mollis. See Deglutition.

SALPUGA, in *Natural Hiſtory*, a name given by ſome of the Latin writers to the ſolipuga.

SALRICO, in *Geography*, a ſmall iſland in the Pacific ocean; 40 miles W.S.W. of Cape Corrientes. N. lat. 20° 2′.

SALSAFY, in *Botany*. See Tragopogon.

SALSAS, in *Geography*, a town and fortreſs of France, in the department of the Eaſtern Pyrenées, ſituated on the ſide of the lake of Leucate. The fortreſs was built by Charles V. of a ſquare form, with thick walls, and towers at the angles, and good mines; 9 miles N. of Perpignan.

SALSEDA, a town of Spain, in Galicia; 18 miles E.N.E. of Compoſtella.

SALSETTE, a ſmall iſland near the weſt coaſt of Hindooſtan, in the Indian ſea, about 15 miles ſquare. This iſland is fertile in rice, fruit, and ſugar, and was taken by the Britiſh from the Mahrattas in 1773; and they had taken it from the Portugueſe, to whom it belonged, in 1750. It is ſeparated from Bombay by a narrow ſtrait; and to the Eaſt Indian company it was a very valuable acquiſition, as the ſettlement of Bombay poſſeſſed no territory beyond the ſmall iſland on which it is ſituated, and depended upon foreign ſupplies for its ſubſiſtence. Salſette, as well as *Elephanta* (which ſee), another ſmall iſland in its vicinity, has its ſubterraneous temples, cut out of the ſolid rock; all of which appear, as major Rennell ſays, to be monuments of a ſuperſtition anterior to that of the Hindoos. But though ſome of the figures at Elephanta be different from thoſe now exhibited in the pagodas as objects of veneration, and this circumſtance might ſeem to juſtify the conjecture of Rennell and other learned Europeans as to their antiquity, yet the Hindoos themſelves conſider the caverns as hallowed places of their own worſhip, and they ſtill reſort thither to perform their devotion, and honour the figures there in the ſame manner with thoſe in their own pagodas. A ſagacious Brahman, a native of Benares, who, for the firſt time, viſited this ſubterraneous ſanctuary in the year 1782, recognized at once all the figures, was well acquainted with the parentage, education, and life of every deity or human perſonage there repreſented, and explained with fluency the meaning of the various ſymbols by which the images were diſtinguiſhed. This, ſays Dr. Robertſon (Hiſt. Diſq. concerning India), may be conſidered as a clear proof that the ſyſtem of mythology, now prevalent in Benares, is not different from that delineated in the caverns of Elephanta. Mr. Hunter, who viſited Elephanta in the year 1784, ſeems to conſider the figures there as repreſenting deities who are ſtill objects of worſhip among the Hindoos. (Archæol. vol. vii. p. 286, &c.) Another circumſtance ſeems to confirm the juſtneſs of this opinion. Several of the moſt conſpicuous perſonages in the groups at Elephanta are decorated with the "zennar," the ſacred ſtring or cord peculiar to the order of Brahmans; an authentic evidence of the diſtinction of caſts having been eſtabliſhed in India at the time when theſe works were finiſhed. Salſette is 10 miles N. of Bombay. N. lat. 19° 12′. E. long. 72° 50′.

SALSEY, one of the ſmaller Shetland iſlands. N. lat. 59° 53′. W. long. 1° 41′.

SALSIRORA, in *Botany*, a name uſed by ſome authors for the *ros ſolis*, or ſundew.

SALSITZ, in *Geography*, a town of Saxony, in the biſhopric of Naumburg; 2 miles S.W. of Naumburg.

SALSO, a river of Sicily, which runs into the ſea, near Alicata.—Alſo, a village of the duchy of Piacenza, celebrated for its ſalt-works, which are ſaid to produce annually to the value of 50,000 ſcudi; 16 miles S.E. of Piacenza.

SALSOLA, in *Botany*, ſo called from its ſaline properties; hence the Engliſh name Saltwort, moſt of the ſpecies affording foſſile alkali.—Linn. Gen. 122. Schreb. 171. Willd. Sp. Pl. v. 1. 1310. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 279. Brown Prodr. Nov. Holl. v. 1. 411. Ait. Hort. Kew. v. 2. 102. Loureir. Cochinch. 173. Juſſ. 85. Lamarck Dict. v. 7. 283. Illuſtr. t. 181. Gærtn. t. 75. (Kali; Tournef. t. 128.)—Claſs and order, *Pentandria Digynia*. Nat. Ord. *Holeraceæ*, Linn. *Atriplices*, Juſſ. *Chenopodeæ*, Brown.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, deeply cloven into five, ovate, concave, permanent ſegments. *Cor.* none, unleſs the calyx be taken for ſuch. *Stam.* Filaments five, very ſhort, inſerted into the ſegments of the calyx. *Piſt.* Germen ſuperior, globoſe; ſtyle bifid or three-cleft, ſhort; ſtigmas recurved. *Peric.* Capſule of one cell, ovate, incloſed in the calyx. *Seed* ſolitary, very large, ſpiral like a ſhell.

Obſ. M. Richard remarks that ſome ſpecies have three ſtyles.

Eſſ. Ch. Calyx deeply five-cleft. Corolla none. Capſule containing one ſeed, reſembling a ſhell, with ſpiral cotyledons.

1. S. *Kali.* Prickly Saltwort. Linn. Sp. Pl. 322. Engl. Bot. t. 634. Woodv. Med. Bot. t. 143. Fl. Dan. t. 818.—Stem herbaceous, procumbent. Leaves awl-ſhaped, ſpinous, rough. Flowers axillary. Calyx margined.—Common on ſandy ſhores almoſt all over the world, flowering with us in June and July. *Root* annual, fibrous. *Stems* rigid, much branched, decumbent, leafy, downy. *Leaves* alternate, awl-ſhaped, channelled, much ſpreading, rough, ſharp at the tip. *Flowers* ſolitary, white but turning reddiſh, each accompanied by three leafy, ſpinous *bracteas* at the baſe. This ſpecies is frequently ſubſtituted for *Chenopodium maritimum*, in glaſs manufactories, although the Soda obtained from it is not equal to that of ſome other ſpecies of *Salſola*.

2. S. *Tragus.* Linn. Sp. Pl. 322. Amœn. Acad. v. 4. 310. Sims and Kon. Ann. of Bot. v. 2. 415.—Stem herbaceous, erect. Leaves awl-ſhaped, ſpinous, ſmooth. Calyx ovate.—Native of the ſouth of Europe, and Africa. The *ſtem* of this plant is erect and ſmooth, about three feet high. *Leaves* cylindrical, ſmooth, flatter above. In other reſpects it reſembles the laſt, of which it has by many authors been conſidered merely as a variety. Dr. Woodville mentions that the Soda obtained from *S. Tragus* is of an ordinary kind, and that it is uſed in Languedoc and Sicily for adulterating the better ſort.

3. S. *roſacea.* Roſe-coloured Saltwort. Linn. Sp. Pl. 323. Cavan. Ic. v. 3. 44. t. 286. Ann. of Bot. v. 2. 416.—Stem erect, branched. Leaves awl-ſhaped, prickly at the tip. Calyx wide ſpreading.—Native of the northern parts of Aſia. It flowers at Kew in July and Auguſt. *Stem* a foot and half high, covered with alternate, roughiſh *branches*, which are frequently roſe-coloured. *Leaves* alternate, ſeſſile, ſolitary, ſucculent, terminating in a white ſpine. *Flowers* axillary, ſolitary, pink or bluſh-coloured.

4. S. *Soda.* French Saltwort. Linn. Sp. Pl. 323. Jacq. Hort. Vind. v. 1. t. 68.—Stems ſpreading. Leaves ſpineleſs.—Common on the ſhores of the Mediterranean, flowering in Auguſt.—*Root* annual. *Stem* a foot high, round, ſmooth and ſhining, furniſhed with oppoſite, ſpreading *branches*. *Leaves* awl-ſhaped, very long, furrowed, ſucculent. *Flowers* axillary, of a yellowiſh-green colour, like the ſtem and leaves, ſo as to be very inconſpicuous.

5. S. *ſativa.* Spaniſh Saltwort, or Barilla. Linn. Sp. Pl. 323. Cavan. Ic. v. 3. t. 291.—Stem diffuſe. Leaves cylindrical, ſmooth. Flowers many together.—Native of Spain, where it is alſo very extenſively cultivated. It flowers in July and Auguſt. *Root* ſucculent and branched. *Stem* a foot high, round, with ſpreading *branches*, which are often reddiſh. *Leaves* ſeſſile, numerous, ſucculent. *Flowers* axillary, very ſmall, five or ſeven together in a cluſter.

From this and the preceding ſpecies the beſt Soda is extracted, and the utility of this ſubſtance in our ſoap and glaſs manufactories will be ſhewn under the article Soda.

6. S. *ſpicata.* Spiked Saltwort. Willd. n. 6. (S. ſalſa; Cavan. Ic. v. 3. t. 290.)—Stem herbaceous. Leaves oblong, convex above, flat beneath. Flowers axillary, ternate, ſomewhat ſpiked. Native alſo of Spain, where it flowers in July. Whole *plant* extremely ſucculent. *Stems* a foot and half high, erect, much branched, purpliſh. *Leaves* alternate or ſcattered, ſhort, obtuſe. *Flowers* exceedingly ſmall, three together.

7. S. *altiſſima.* Graſs-leaved Saltwort. Linn. Sp. Pl. 324. Forſk. Ic. t. 9.—Stem herbaceous, erect, much branched. Leaves thread-ſhaped, acute, with the flower-ſtalks at their baſe.—Native of Spain, flowering in July. *Stem* three or four feet high, erect, ſmooth, much branched. *Leaves* alternate, ſeſſile, ſucculent. *Flowers* ſmall, globular, three together. Some authors think that this is properly a *Chenopodium*.

8. S. *trigyna.* Trifid-ſtyled Saltwort. Willd. n. 8. (S. altiſſima; Cavan. Ic. v. 3. 46. t. 289, excluding the ſynonyms.)—Stem herbaceous, erect. Leaves thread-ſhaped, obtuſe, fleſhy. Flowers axillary, ſeſſile, three together. Style trifid.—A native alſo of Spain, where it flowers in July. This ſpecies is adopted from Willdenow, who ſays that in habit it greatly reſembles the preceding, but that it is quite diſtinct; having axillary *flowers*, not connected with the *leaves*.

9. S. *ſalſa.* Striped-ſtalked Saltwort. Linn. Sp. Pl. 324. Jacq. Hort. Vind. v. 3. t. 83.—Stem herbaceous, nearly erect. Leaves linear, rather fleſhy, not awned. Calyx ſucculent, tranſparent.—Native of Aſtracan, and introduced at Kew in 1782, by Dr. Brouſſonet, where it flowers in Auguſt and September. *Root* annual, branched, ſmooth. *Stem* rather proſtrate at the baſe, but afterwards erect, a foot high, ſtriated, purpliſh. *Leaves* ſcattered, linear, fleſhy, entire. *Flowers* axillary, ſeſſile, yellowiſh, from three to five in a cluſter.

10. S. *nudiflora.* Naked-flowered Saltwort. Willd. n. 10.—“Stem rather woody, aſcending. Leaves thread-ſhaped, fleſhy. Flowers forming a head, the length of the leaves.”—Native of the Eaſt Indies, on the ſhores of Tranquebar. *Stems* branched, woody at the baſe, panicled above. *Branches* ſimple, covered with heads of *flowers*, which appear naked, but are each accompanied by a ſhort leaf. *Leaves* as in the laſt.

11. S. *flaveſcens.* Yellow Saltwort. Willd. n. 11. Cavan. Ic. v. 3. 45. t. 288.—Stem rather woody, erect. Leaves cylindrical, downy. Flowers in a ſort of head.—Found on mountains in Spain, where it flowers in July. *Stem* ſix inches high, much branched. *Leaves* alternate, hairy, yellowiſh-white, as indeed is the whole plant. *Flowers* axillary, five or ſeven together in ſmall ſpikes.

12. S. *hirſuta.* Hairy Saltwort. Linn. Sp. Pl. 323. Fl. Dan. t. 187.—Stem herbaceous, diffuſe. Leaves cylindrical, obtuſe, downy. Flowers axillary, ſolitary.—Native of Denmark and the ſouth of France. Introduced at Kew by Mr. Hunneman, in 1791, where it flowers in Auguſt. *Stem* a ſpan high, chiefly branched from the baſe, reddiſh, downy as well as the *leaves* and *calyx*; the latter is purpliſh externally, yellow within.

13. S. *laniflora.* Woolly Saltwort. Linn. Suppl. 172. (“S. lanata; Pallas It. v. 1. t. P.”)—Stem herbaceous. Leaves cylindrical, downy. Flowers axillary: anthers coloured.—Native of Siberia. It flowers from June to Auguſt. *Stem* two feet high, woolly when young, but naked when in flower. *Leaves* obtuſe, fleſhy. *Flowers* three together, yellow, differing from all the reſt in having roſe-coloured anthers.

14. S. *hyſſopifolia.* Hyſſop-leaved Saltwort. Willd. n. 14. “Pallas It. v. 1. 491. t. H.”—Stem herbaceous. Leaves linear, flat. Flowers axillary, in woolly heads.—Native of dry, ſalt plains on the coaſts of Siberia, flowering through the ſummer.—*Root* annual, ſlender, fibrous, whitiſh. *Stem* erect, a foot high, purple, branched at the baſe. *Leaves* ſmall, downy. *Flowers* axillary, two or three together in a head, greatly reſembling thoſe of *S. muricata*, n. 25. Dr. Roth thinks that this ſpecies ſhould be referred to Kochia. See that article, as well as Annals of Botany, v. 2. 20.

15. S. *polyclonos.* Many-ſpiked Saltwort. Linn. Mant. 54. (Anthylloides rotundifolia; Bocc. Muſ. t. 34. f. 1.—

Stem rather woody. Leaves oblong. Flowers capitate. Calyx margined, coloured.—Native of the ſhores of Sicily and Spain. *Stems* much branched and ſpreading. *Leaves* oblong, fleſhy, awnleſs. *Flowers* axillary, terminal, forming a ſeſſile head.

16. S. *proſtrata.* Trailing Saltwort. Linn. Sp. Pl. 323. Jacq. Auſtr. v. 3. 52. t. 294.—Stem ſhrubby. Leaves linear, hairy, unarmed.—Native of the ſouth of Europe. Introduced at Kew in 1780, where it flowers from July to September. *Stems* proſtrate but aſcending, branched, round, near two feet high, ſmooth and green below, but downy and red at the upper part. *Leaves* ſeſſile, linear, acute, of a yellowiſh glaucous green, downy. *Flowers* axillary, ſmall, ſeſſile, fleſh-coloured.

17. S. *monandra.* Fleſhy-leaved Saltwort. Willd. n. 17. Pallas It. v. 3. t. M. f. 1.—Stem herbaceous, branched, fleſhy, almoſt leafleſs. Radical leaves cylindrical, fleſhy. Stamen one.—Native of Siberia, by the lake Altan. *Root* annual. *Stem* ſmall, undivided, a ſpan high. *Radical leaves* two, cylindrical, obtuſe. *Flowers* reſembling thoſe of *Salicornia;* indeed the whole plant has great affinity to that genus, in its habit and appearance.

18. S. *vermiculata.* Small-leaved Saltwort. Linn. Sp. Pl. 323. (S. microphylla; Cavan. Ic. v. 3. 45. t. 287.)—Stem ſhrubby. Leaves faſciculate, cylindrical, thread-ſhaped; floral ones ovate, acute, fleſhy.—Native of Spain and Siberia, flowering in May. *Stems* two feet high, hardiſh, branched, decumbent. *Leaves* alternate, very ſmall. *Flowers* yellow, in numerous, denſe, terminal ſpikes.

19. S. *Arbuſcula.* Buſhy Saltwort. Willd. n. 19. “Pallas It. v. 1. t. K.”—“Stem ſhrubby. Leaves in bundles, cylindrical, attenuated at the baſe, incurved. Flowers ſolitary, ſcattered.—Native of maritime plains in Tartary.” Nothing is known of this, but from the authors above quoted.

20. S. *aphylla.* Leafleſs Saltwort. Linn. Suppl. 173. Willd. n. 20.—Stem arboreſcent, jointed. Leaves very ſhort, ovate, acute, ſoon falling off.—Native of the Cape of Good Hope. A very irregular *ſhrub,* five or ſix feet in height, whoſe *branches* are covered with the rudiments of the flowers. *Leaves* falling off when the plant is young; hence its ſpecific name. *Flowers* ſeſſile; their limb expanded, membranaceous.

21. S. *arboreſcens.* Arboreſcent Saltwort. Linn. Suppl. 173. (Kali fruticoſum, incanum, foliis exſuccis; Buxb. Cent. 1. 9. t. 15.)—Stem ſhrubby. Leaves convex on one ſide, flat on the other, the lower ones in pairs.—Native of Siberia. *Stem* ſomewhat more than a foot high, woody, much branched, white. *Leaves* narrow, acute, ſcattered, whitiſh, ſlightly ſucculent. *Flowers* in a terminal ſpike.

22. S. *fruticoſa.* Shrubby Saltwort. Linn. Sp. Pl. 324. Engl. Bot. t. 635.—Erect, ſhrubby. Leaves ſemi-cylindrical, bluntiſh, without ſpines.—Native of Great Britain, and other parts of Europe, flowering in July and Auguſt. It was diſcovered originally in this country, in the time of Ray, by the celebrated ſir Thomas Brown, author of Religio Medici.—This elegant evergreen, not uncommon in our gardens, has a woody, erect, round, much-branched *ſtem.* *Leaves* alternate, fleſhy, obtuſe, ſmooth, rather glaucous. *Flowers* axillary, ſeſſile, ſolitary, green. *Bracteas* ternate, concave. ſcaly, ſmall.—“The leaves have an herbaceous flavour, with a ſlight degree of ſalt, and ſome acrimony.”—Willdenow preſumes, that the *S. fruticoſa* of Cavanilles' Icones, v. 3. t. 285, is a new ſpecies, and it has ſince been called *oppoſitifolia* by Desfontaines.

23. S. *indica.* Indian Saltwort. Willd. n. 23.—Stem ſhrubby. Leaves linear, fleſhy, ſemi-cylindrical; floral ones oblong, obtuſe. Native of the Eaſt Indies.—A ſmall *ſhrub,* ſcarcely more than a foot high. *Leaves* reſembling the laſt, but longer; the floral ones very ſhort. *Flowers* axillary, ſeſſile, three together, found only on the older branches.

24. S. *ſedioides.* Sedum-like Saltwort. Willd. n. 24. “Pallas It. v. 1. t. M. f. 1, 2.”—“Stem rather ſhrubby. Leaves cylindrical, thread-ſhaped, ciliated. Flowers axillary, capitate.”—Found in watery ſalt-marſhes in Siberia.—All that we know of this ſpecies is from Willdenow, who merely ſays that it is diſtinct from the following, in having “cylindrical *leaves* ciliated with long hairs.”

25. S. *muricata.* Egyptian Saltwort. Linn. Mant. 54. (“Baſſia muricata; Allion. Miſc. Taur. v. 3. 177. t. 4. f. 2.”)—Stem ſhrubby, ſpreading. Branches hairy. Calyx ſpinous.—Native of Egypt, and the ſouth of Europe. It flowers in July and Auguſt.—Nearly allied to *S. proſtrata,* but the whole plant is more ſpreading, and the *ſtem* leſs downy. *Branches* ſlender, panicled. *Leaves* alternate, linear, fleſhy, ſoft, aſh-coloured, awnleſs. *Flowers* axillary, ſeſſile, ſmall, covering the branches.

26. S. *didyma.* Twin-fruited Saltwort. Loureir. Cochinch. 173.—“Stem herbaceous, decumbent. Leaves oblong, unarmed. Capſule two-lobed, two-ſeeded.”—Native of Africa. *Stem* two feet high, procumbent, rough. *Leaves* oppoſite, oblong, entire, thick, ſmooth. *Flowers* axillary, nearly ſeſſile, crowded together, without petals.

27. S. *Echinus.* Thorny Saltwort. Billard. Syr. faſc. 2. 10. t. 5.—Stem ſhrubby, ſmooth. Leaves awl-ſhaped, awnleſs. Spines divaricated, bearing the flowers.—Native of the high mountains of Libanus. *Shrub* a foot in height, its *ſtem* much branched, ſmooth, yellowiſh. *Spines* ſolitary, large and ſtrong, an inch in length. *Leaves* alternate, glaucous, rigid. *Flowers* ſeſſile on the ſpines, alternate, ſolitary; ſometimes crowded together.

28. S. *camphoroſmoides.* Camphoroſma-leaved Saltwort. Desfont. Atlant. 218. (Kali orientale fruticoſum ſpinoſum, Camphoratæ foliis; Tourn. Cor. 18.)—“Stem ſhrubby, ſmooth. Leaves thread-ſhaped, in axillary bundles.”—Native of Barbary, in fallow fields. *Stems* ſmooth, erect. *Bark* white, afterwards brown. *Branches* numerous, panicled, furniſhed with numerous, ſharp *ſpines.* *Leaves* alternate, ſmooth. *Flowers* unknown.

29. S. *brevifolia.* Short-leaved Saltwort. Desfont. Atlant. 218. (Kali ſiculum lignoſum, floribus membranaceis; Bocc. Sicc. 59.)—“Stem ſhrubby, much branched. Leaves ovate, crowded, very ſhort, downy.”—Found on the ſands of Barbary, and alſo in Sicily. *Stem* furniſhed with numerous, downy *branches.* *Leaves* alternate, villous, ſhort, obtuſe, reſembling thoſe of *Sedum acre.* *Flowers* axillary, ſolitary, numerous.

30. S. *mollis.* Soft-leaved Saltwort. Desfont. Atlant. 218.—“Stem ſhrubby, with ſpreading branches. Leaves fleſhy, glaucous, obtuſe.”—A native alſo of Barbary. An erect *ſhrub,* whoſe *ſtem* is covered with numerous, ſpreading *branches.* *Leaves* very ſoft, ſmooth, ſucculent, reſembling thoſe of *Sedum album,* but more ſlender and ſhorter.

31. S. *oppoſitifolia.* Oppoſite-leaved Saltwort. Desfont. Atlant. 219. (S. fruticoſa; Cavan. Ic. v. 3. 44. t. 285.)—“Stem ſhrubby. Leaves awl-ſhaped, unarmed, oppoſite.”—Native of Tunis in Africa, and alſo of Spain and Sicily. *Stems* upright, very much branched. *Branches* oppoſite, knotty, ſmooth. *Leaves* oppoſite, fleſhy, awnleſs, depreſſed above. *Flowers* axillary, ſeſſile, one, two or three together.

The laſt five ſpecies are adopted from Desfontaines ; and we cloſe this extenſive genus by ſubjoining from Mr. Brown's Prodromus of the Flora of New Holland, 411, the two following, not knowing preciſely where each ſhould be inſerted.

32. S. *auſtralis*.—" Herbaceous, ſmooth, very much branched. Leaves awl-ſhaped, ſpinous, divaricated. Bracteas longer than the calyx, which is ſolitary ; its ſegments when in fruit veiny and membranous."—Native of Port Jackſon, and the ſouthern parts of New Holland.

33. S. *macrophylla*.—" Rather ſhrubby, erect, ſmooth, glaucous. Leaves awl-ſhaped, ſpinous, divaricated, triangular at the baſe. Bracteas divaricated. Segments of the calyx when in fruit membranous."—Native of the tropical part of New Holland. See Kali and Soda.

Salsola, in *Gardening*, contains a plant of the ſhrubby evergreen kind, of which the ſpecies cultivated is the ſhrubby glaſſwort, ſaltwort, or ſtone-crop tree (S. fruticoſa).

Method of Culture.—This plant may be increaſed by layers or cuttings, though with difficulty in the latter method.

The young branches ſhould be laid down in the ſpring, and when well-rooted, in the following autumn, be taken off and planted out where they are to remain, a warm ſheltered ſituation being provided for the purpoſe.

But though theſe plants are inhabitants of the ſea-ſhores, they may be introduced in the borders and clumps of the ſhrubbery with other evergreens, with good effect.

SALT, Sal, in *Chemiſtry*, is a term ſo variouſly applied as not to admit of an accurate definition. It is obſerved, however, that the general and the moſt ancient idea of a ſalt is, a cryſtallizable ſubſtance, conſiderably ſoluble in water, and highly ſapid ; but for the ſenſe in which the term is at preſent applied, or of acids with alkalies, earths, or metallic oxyds, ſee Salts. See alſo the references under Sal, and Rock-*Salt*.

Salt, in the *Manufactures* and *Domeſtic Economy*, generally ſignifies the common culinary ſalt, which in a ſtate of purity is called muriate of ſoda. See *Muriate of Soda*, under Soda.

Under this head we ſhall give an account of the different varieties of the common culinary ſalt, and deſcribe the different proceſſes by which it is manufactured.

Alimentary or common ſalt may alſo be diſtinguiſhed into various kinds, according to the various ways of preparing it. Hence we have,

1. *Bay*-ſalt, prepared by evaporation, by the heat of the ſun. This ſalt is of two kinds ; the firſt drawn from ſea-water, as is practiſed in France, Spain, and Portugal, and many other hot countries ; the other from the water of ſalt-ſprings, or lakes, as in the Cape Verd iſlands, in the iſland of Tortuga, Turk's iſland, and many parts of America. The firſt kind, in time of peace, is imported into Great Britain in large quantities. America and its fiſheries are commonly ſupplied with the latter.

The ſeveral kinds of bay-ſalt made in the different parts of the world are found to differ greatly from one another in ſeveral particulars ; as, 1. In the ſize of the cryſtals, which is owing to the heat of the ſun, and the time it lies in the pits. The French cream of ſalt, and the blown ſalt of the iſle of May, are fine and ſmall-grained. The Portugal ſalt is larger grained than that of France ; and that of Tortuga is larger than either. 2. In purity : as all bay-ſalt has ſome mud, ſlime, or the like, in the making, and ſome kinds are mixed with the bittern ſalt, or what is called Epſom ſalt. 3. They are all more white while dry, and more pellucid when moiſt ; and they differ in colour, according to the earth which makes the bottoms of the pits. Thus, ſome of the French bay-ſalt is grey, ſome reddiſh, and ſome white, according as a blue clay has lined the pits, or a red or white one. 4. Some kinds of bay-ſalt are more apt to contract a moiſture from the air than others ; an imperfection to which the common ſorts of marine ſalt are much more ſubject : this is ſometimes owing to the ſmallneſs of the grain, and ſometimes to a mixture of a calcareous or alkaline ſalt with it, or to a combination of earth with marine acid. And, 5. Some kinds have an agreeable ſmell in large heaps ; ſuch are the Portugal, and the Hampſhire bay-ſalts ; and this ſeems owing to the ſea-water they were made from having a bituminous matter in it. 6. It differs greatly in taſte, according to the various foreign mixtures it contains ; and it will often alter in taſte, and other qualities, by long keeping. Thus the ſalt of Peccais is ſo bitter, when new made, as not to be eatable, but after keeping a while, it becomes very pleaſant. This is owing to its containing at firſt a large proportion of the bittern ſalt, or Epſom ſalt, which liquefies in keeping, and running off in form of a fluid, leaves the reſt of a good taſte. In general, bay-ſalt is much fitter for uſe after it has been kept ſome time in a dry place, than when it is firſt made.

2. *Marine* ſalt boiled, which is extracted from ſea-water by coction.

3. *Brine* ſalt, or fountain ſalt, prepared by boiling from natural brine, whether of ponds and fountains, or of lakes and rivers.

4. *White* ſalt, prepared from ſea-water, or any other kind of ſalt-water, firſt heightened into a ſtrong brine by the heat of the ſun, and operation of the air.

5. *White* ſalt, prepared from a ſtrong brine, or lixivium drawn from earth, ſtones, or ſands, ſtrongly impregnated with common ſalt.

6. Refined rock-ſalt, which is boiled from a ſolution of foſſile ſalt in ſalt-water, or in freſh. And,

7. *Salt upon ſalt*, which is made from bay-ſalt diſſolved in ſea-water, or other water, and boiled to a white ſalt.

All theſe kinds, except the firſt, are comprehended by Dr. Brownrigg under the general denomination of *white* ſalt.

There is no ſoluble ſalt found in nature ſo abundant as the ſalt under conſideration. We find it in ſome proportion in almoſt every animal and vegetable ſubſtance. In the earth it is found in vaſt maſſes, conſtituting rocks of ſuch extent, as to afford an exhauſtleſs ſource of this valuable ingredient of our food. The moſt remarkable of the ſalt-mines, which are excavations made into theſe rocks, are at Wiliecſka in Poland, Catalonia in Spain, Altemonte in Calabria, Loowur in Hungary, Tunis in Algiers, and Cheſhire, in this country. Sources of a ſimilar kind have alſo been diſcovered in America. Theſe rocks are ſometimes almoſt pure ſalt, requiring merely to be reduced to powder. In others it abounds with earthy matter, and ſometimes with oxyd of iron, giving it various colours. The foſſile ſalt of Cheſhire is of the latter kind, and requires to be diſſolved in water, and evaporated, to obtain it in cryſtals. See Rock-*Salt*.

Salt-ſprings are another ſource of ſalt, and ſome lakes abound with a conſiderable quantity. The ſea itſelf is the principal of this claſs, which would furniſh a ſufficient ſupply for the uſe of man, if no other ſource of it exiſted. Indeed, the circumſtance of the ſea abounding with more of this ingredient than any other, is a ſufficient proof of what we have before aſſerted, that it is the moſt plentiful ſoluble ſubſtance in nature. The water of the ſea, which raiſed in the ſtate of pure water, and afterwards filtering through the earth
and

and mountains, brings to that immenſe reſervoir every thing ſoluble which it finds in its way. Hence we find many other ſubſtances beſides ſalt in ſea-water. This will be exhibited in a tabular form hereafter. The ſalt-works of Wieliſka, in Poland, are upon an immenſe ſcale. The ſubterraneous excavations extend upwards of three miles. Dwellings and chapels are formed in the ſolid rock, having the appearance of enchantment. The number of people employed are from twelve hundred to two thouſand. They are ſaid not to live long, being liable to a complaint in the cheſt. Great quantities of this ſalt require merely to be pulverized.

In Cheſhire, particularly in the neighbourhood of Northwich, the ſalt-works are very extenſive. Great quantities are got in the ſolid form, but not ſufficiently pure for uſe. In this ſtate it is conveyed from the mines to the Cheſhire ſide of the river, nearly oppoſite to Liverpool. It is at this place diſſolved in the ſea-water, from which it is afterwards ſeparated by evaporation and cryſtallization, by a proceſs which we ſhall deſcribe.

There are alſo in the ſame diſtrict ſalt-works, at which the ſalt called Cheſhire ſalt is extracted from brine. Theſe works are deſcribed very intelligibly by Dr. Holland, in the Report of Agriculture for the County of Cheſhire. See Rock-*Salt.*

We ſhall give a brief account of the proceſs employed here for extracting the ſalt, for the facts of which we are indebted to the above author. The different ſtates in which this ſalt is ſold has given it different appellations, which are, *ſtoved* or *lump ſalt*, *common ſalt*, and another variety in the form of large cryſtals, called *fiſhery ſalt.* In making the firſt, the brine is put into pans of great ſurface and little depth, made of wrought iron, after the manner of ſteam-engine boilers. The fire being made to play uniformly over the bottom, the brine, which is fully ſaturated, is raiſed to the temperature of 226°. This high temperature, which is 14° above the boiling point of water, is induced by the preſence of the ſalt. As ſoon as the liquid is hot, a white powder, ſometimes tinged with oxyd of iron, becomes ſeparated. This is partly ſkimmed off, and ſome falls to the bottom of the pan. This is moſtly carbonates of lime and iron, which were diſſolved in an exceſs of carbonic acid, and which is driven off when the heat is applied. It may here be remarked, that the ſtratum of red marle in which the ſalt veins are found, contain carbonate of lime; and it is ſo liable to contain that exceſs of carbonic acid by which it becomes ſoluble, that the ſprings of thoſe countries where the ſame red marle abounds, are highly charged with carbonate of lime, which is precipitated by heat. The removal of the carbonates above-mentioned from the brine, as well from the ſurface as from the bottom, is called clearing the pan. Some brines abound with this impurity more than others, and ſome contain none at all. The liquid now becomes clear, and cryſtals of ſalt form on the ſurface till they fall, by their accumulating gravity, in the ſpace of from eight to twelve hours. The principal part of the water is evaporated; the ſalt is now taken out with wooden ſhovels, and put into conical baſkets, called *barrows*, from which the liquid part may drain. The ſalt is then dried in a ſtove, where it loſes about one-ſeventh of its weight, and aſſumes the lumpy form, from which it takes its name.

After the pan has been uſed for a few weeks, the bottom becomes coated with the precipitates above-mentioned to a conſiderable thickneſs. Theſe require to be removed by mechanical means, being almoſt as compact as ſtone. It would be an advantage to remove this ſubſtance oftener. It not only loſes time by protracting the proceſs, but the bottom of the pan becomes heated ſo hot as ſoon to be deſtroyed by the action of the air.

The *common* ſalt is made by the ſame proceſs, but it is not ſtoved after draining, and the evaporation is conducted more ſlowly, the temperature being from 160° to 170°.

The *fiſhery* ſalt is made by the ſame apparatus, and from the ſame brine, but the evaporation is ſtill ſlower than the laſt, the temperature being only from 100° to 110°, and the proceſs laſts from ſeven to ten days. By this means the cryſtals become much larger and harder, and hence are better adapted for the uſe of fiſheries. All theſe varieties of ſalt, and many others, have been analyſed by Dr. Henry of Mancheſter; an account of which has been publiſhed in the Philoſophical Tranſactions for 1810. We ſhall in the ſequel to this article give a table of the principal facts, with other judicious remarks, given by this celebrated chemiſt.

The ſalt-ſprings of Namptwich, in the ſame county, and Droitwich in Worceſterſhire, are evaporated by a proceſs ſimilar to that above deſcribed. The ſalt which they afford is held in high eſtimation for its great whiteneſs.

Before we quit the ſubject of the Cheſhire ſalt, it will be proper to point out the advantage derived from ſending the rock-ſalt to the ſea-coaſt to be manufactured. The ſea-water, in which it is there diſſolved, being ſaturated with ſalt, 100 tons of this brine afford 23 tons of ſalt; the ſame quantity of ſea-water affording 2 tons 27 cwt. which would require the ſame quantity of fuel to evaporate it. See Salt-*Brine Springs.*

Conſiderable ſalt-works are carried on in Scotland, and in the northern counties of this country on the ſea-coaſt, by the evaporation of ſea-water. At Lymington, in Hampſhire, the ſea-water is evaporated to one-ſixth of the whole by the action of the ſun and air.

The works in which the ſea-water is heightened into brine are called ſun-works, or out-works. Theſe are conſtructed on a flat down or oozy beach: within a mole, which is raiſed, if neceſſary, to keep out the ſea, there is a large reſervoir, or feeding pond, communicating with the ſea by a ſluice, and adjoining to this reſervoir a long trench, parallel to which there are ſeveral ſquare ponds, called brine-pots, nine or ſometimes twelve placed in a row, and parallel to this two other rows of the ſame kind; beyond the third row there is a row of larger ponds, three in number, called ſun-pans, with each of which three or four of the brine-pits in the third row communicate by narrow openings; and theſe often communicate with a larger pond, called the common ſun-pan, from which the brine flows into large covered ciſterns (made very tight of brick and clay) adjoining to the boiling-houſe. The bottoms of the ponds are in ſeveral places formed of an oozy mud, well trodden and laid ſmooth; and in the brine-pits and ſun-pans covered with ſea-ſand. The bottoms of all the pits form an inclined plane, higheſt at the reſervoirs, and loweſt at the common ſun-pan. The partitions between the ponds are of mud and earth, about two feet broad, with little openings, by which the pits communicate with one another. The ſea-water, received at full ſea into the reſervoir, is thence let out, as occaſion requires, into the trench, and from the trench into the firſt row of brine-pits; and when they are duly filled, the openings between them and the trench are cloſed with mud. The water, after ſtanding for ſome time in theſe pits, is let out into the ſecond row; and after a certain time, according to the degree of evaporation, into the third row of pits; thoſe of the firſt row being again filled; and thus they are filled and emptied alternately. When the brine is ſufficiently evaporated in the third row of brine-pits, it is ſuffered to flow into the common ſun-pan, where its weight is examined by glaſs hydrometers; and being found of due ſtrength, it is drawn from thence into the ciſterns, where it remains till they are ready for boiling it. The ſea-water, thus carried through the whole work, is called a courſe of brine; and in hot weather, it acquires its proper ſtrength in twenty-four hours; but, if ſhowers approach, it is drawn into the ciſtern before it is brought to its full ſtrength. In this courſe the ſalt-water ſtands deepeſt in the pits of the firſt row, and is gradually ſhallower in the others, till it arrives at the ſun-pan, where it is ſhalloweſt, and in the common ſun-pan it is ſomewhat deeper, being about ſix or ſeven inches deep. After this manner, if the ſeaſon proves favourable, they make as much brine as keeps them boiling till near Chriſtmas; after which they repair their pans and furnaces; and prepare their Epſom ſalt from the bittern, and begin again to make brine about April.

The next operation is performed by artificial evaporation, in boilers ſimilar to thoſe uſed in other ſalt-works. The pans in which they boil the ſalt at Lymington are of lead, of a ſquare form, and ſmaller than thoſe uſed for boiling ſea-water into ſalt. They have uſually four of theſe in a ſaltern, placed in a row, with a furnace to each of them. The chimnies are carried up by the ſide of the wall, which divides the boiling-houſe from the fire-houſe; and the ſmoke is conveyed from each furnace into theſe chimnies by two flues, one on each ſide of the mouth of the furnace. To each of theſe flues is fitted a regiſter, or plate of iron, placed horizontally, which may be drawn out, or thruſt in over the flue ſo as to cloſe it, and prevent the ſmoke from aſcending through it; and by means of theſe regiſters and vent-holes, and doors to the mouths of the furnaces and aſh-pits, they are able to regulate the fires in the exacteſt manner, and damp them while the ſalt is graining, or ſmother them quite out, if they find occaſion. In the boiling-houſe they have a chimney to convey off the vapours from each pan; which is a ſquare funnel of boards. There is only one long walk in the boiling-houſe, on the ſide of the pans oppoſite to the mouths of the furnaces, and between this walk and the wall are placed large wooden troughs, with ſeveral little holes at their bottoms; into which troughs the ſalt, when drawn out of the pans, is put to be drained from the bittern.

The proceſs varies, in ſome degree, from that uſed in Cheſhire. The ſalt is not removed from the boiler till the whole of the water is evaporated. It is then taken out all at once, and placed in troughs with holes in the bottom. A certain quantity of moiſt uncryſtallizable matter adheres to this ſalt, which drains through the above-mentioned holes into pits below. Immediately under the holes are placed upright ſtakes or pillars, down which the liquid runs, and upon which a portion of ſalt cryſtallizes in maſſes, which in ten or twelve days weigh as much as 60 or 80 lbs. Theſe maſſes are called *ſalt-cats*, and amount to $\frac{1}{100}$th of the whole ſalt manufactured here. The liquid which paſſes into the pit is of a very ſharp bitter taſte, and is called *bittern.* It is reſerved for the winter ſeaſon, when the ſalt-works are ſuſpended, and then undergoes evaporation to a certain extent. A little more common ſalt is ſeparated, which is reſerved to add to the ſalt-brine. The evaporated fluid is placed in wooden coolers, eight feet long, five feet broad, and one foot deep, where it affords cryſtals of Epſom ſalt (ſulphate of magneſia). The remaining liquid is drained off from the cryſtals, and runs away. This is called ſingle Epſom ſalt, to diſtinguiſh it from the ſame article, after a ſecond ſolution and cryſtallization, which is termed double Epſom ſalt. Four or five tons of Epſom ſalt are produced from a quantity of ſea-water which has yielded two of common ſalt and one of cat-ſalt. We are indebted to Dr. Henry's eſſay above alluded to for the account of theſe ſalt-works, who had it from a gentleman reſiding at that place.

The artificial method of promoting the evaporation of ſea-water, and the preſerving the brine in the Engliſh ſalt-pits from being diluted with rain, propoſed by Dr. Brownrigg, is as follows. A number of ſalt-pits ſhould be made in a row in the marſh, from eaſt to weſt, and their bottoms lined with plaiſter, or ſome ſtrong cement that will not eaſily break up; and by this caution, the ſalt may be drawn white and pure like the Portugal kind, not grey like the French. Over each pit covers ſhould be made of thin boards, or rather of canvas painted white, and ſtretched on frames of wood, and theſe ſhould be fixed to ſtrong poſts, erected on the north ſide of the pits, and contrived to be eaſily drawn back to them, in the manner of drawbridges. Theſe covers, thus fixed, may be let down over the pits in the manner of a ſhed or pent-houſe, in rainy weather, to keep the brine from being diluted with freſh water; and in dry weather they may be raiſed almoſt to a perpendicular, but inclining a little towards the ſouth, ſo as to form a wall with the ſouth aſpect; and thus they would ſerve for a double uſe, being a covering to the pits in rainy weather, and reflectors of the ſun's heat in dry weather. The reflection of ſo large a body of the ſun's rays, in the courſe of a bright day, would greatly promote the evaporation of the brine; and the hinges on which the reflectors turn, being placed at ten inches from the ground, when the reflectors ſtand upright, there will be a ſpace under them, through which the air will continually flow in a briſk current, and this will greatly promote the evaporation of the water.

The paſſages of communication between the pits muſt be narrow and winding, and muſt be wholly ſtopped up in wet weather, that no freſh water run into the brine. This channel ſhould be covered alſo with boards, and, at the entrance of the pits, there muſt not be a pond, as is the cuſtom in France, but only a narrow covered trench, running parallel with the ſide of the pits, which is oppoſite to the reflectors; and the pond, which forms the entrance of the pits in the French ſalt-marſhes, muſt in theſe be detached from them, and inſtead of it, there muſt be formed a fourth brine-pond, communicating with the third by a long and narrow channel.

If theſe contrivances ſhould be reduced to practice in England, the ſalt will probably cryſtallize much faſter there than in the French marſhes, and the brine may be kept as deep, and even deeper than in the French pits; and a ſhower of rain will only retard the work for the ſmall time in which it is falling: whereas, in the French works, it throws them back three or four days, as no ſalt can be formed till all the water it brought be evaporated.

Four ciſterns may be dug adjoining to the brine-pits, to admit the brine in the ſalt-ponds, when the weather is very rainy; and as to the ſalt-water in the reſervoir, if it ſhould be found neceſſary to preſerve it from rain in ciſterns, when ſo much rain falls as to make it freſher than ſea-water, it may be let out, and ſea-water admitted in its place. And, in order to promote the evaporation, and to make the ſalt-water in the reſervoir fitter to ſupply the firſt brine-pond with brine of a due ſtrength, it may be proper, by means of a ſmall fire-engine, continually to force up the ſalt-water in the reſervoir, as often as occaſion requires, and, by means of a diverger, fitted to the engine, to make it deſcend again into the reſervoir like a ſhower of rain: by which means, the evaporation of the watery vapours will be greatly promoted after much the ſame manner as is practiſed at ſeveral of the ſalt-works in Germany, where the brine is very weak.

Thus by augmenting the force of the ſun's heat, and of the air, by promoting the evaporation of the watery vapours, and preventing the brine from being diluted with rain, it is very probable that, during the ſummer ſeaſon, double the quantity of ſalt might be prepared at an Engliſh work with theſe contrivances, that is now uſually prepared at a French ſalt-marſh of equal magnitude.

Beſides theſe methods of managing ſea-water, it is certain that very large quantities of bay-ſalt might be prepared in England with great eaſe, from the natural brine of ſalt-ſprings, and from the common foſſile or rock-ſalt of Cheſhire, diſſolved in weak brine, or in ſea-water. Upon the whole, the bay-ſalt might thus be made here at a moderate price, and in ſufficient quantities to ſupply both the nation itſelf, and all our colonies.

Dr. Watſon, in his Chemical Eſſays, vol. ii. p. 58, having found, by experiment, that, in a ſummer-day of ſixteen hours, three gallons of water may be diſperſed into the air, by a warm ſun and a briſk wind, from the ſurface of a linen cloth, equal to one ſquare yard, ſuggeſts a method of manufacturing bay-ſalt, by wetting and drying alternately any number of ſquare yards of coarſe cloth: and he obſerves, that one labourer, aſſiſted by proper mechanical contrivances, might be equal to the daily management of a thouſand yards, or more. By this plan in favourable weather there would be daily evaporated twenty-four thouſand pounds of water, which, ſuppoſing ſea-water to contain one thirty-ſecond part of its weight of ſalt, would give ſeven hundred and fifty pounds of ſalt.

He adds, that thoſe who have ſeen the artifice of ſtrengthening brine, which is practiſed in Franche Comté, and other places, by making it drip through faggots, in order to increaſe the evaporation, by increaſing the ſurface of the water, which is expoſed to the air, will not be ſurprized at this method of evaporating water.

Marine ſalt is prepared by boiling ſea-water. This ſalt is only made in countries where great quantity of fuel can be had at a very low price, or where the ſun has not force enough; and is therefore made in few counties of England, except on thoſe parts of the Britiſh coaſt which moſt abound in pit-coal. This has thence got the name of *Newcaſtle ſalt.*

The ſalt-works in the north are the moſt extenſive, and are wholly carried on by artificial heat.

The moſt convenient works for the manufacture of this ſalt are conſtructed in the following manner. The ſaltern is erected at ſome convenient place near the ſhore; it is a long and low building, conſiſting of two parts, one called the fore-houſe, and the other the pan-houſe, or boiling-houſe. The fore-houſe ſerves to receive the fuel, and cover the workmen; and in the boiling-houſe are placed the furnace, and the pan or boiler in which the ſalt is made. And in ſome places they have two pans, one at each end of the building, and the fuel and place for the workmen are in the middle. The furnace opens into the fore-houſe by two mouths, and from theſe is carried up a wall to prevent the aſhes from flying to the ſalt-pans, and in this is a door of communication between the two houſes. The body of the furnace conſiſts of two chambers, divided from one another by a brick-work, called the *mid-feather*, which from a broad baſe terminates in a high edge nigh the top of the furnace, and by means of ſhort pillars of caſt-iron fixed upon it, ſupports the ſalt-pan. The pans are oblong and ſhallow, the common meaſure being fifteen feet in length, twelve feet in breadth, and ſixteen inches in depth; they are commonly made of plates of wrought iron, joined together with nails, and the joints filled with a ſtrong cement; and the bottom of the pan is prevented from bending down, or changing its figure, by hooks faſtened to ſtrong iron-bars which are placed acroſs it. Sometimes the ſides, which are not always covered with liquid but expoſed to the air, are made of lead, iron being liable to be corroded.

Between the ſides of the pan and the walls of the boiling-houſe there runs a walk, five or ſix feet broad, where the workmen ſtand to draw out the ſalt. The roofs are wood, and are faſtened with pegs of wood, nails mouldering away into ruſt in a few months.

Not far diſtant from the ſaltern on the ſea-ſhore, between full ſea and low-water mark, they make a little pond in the rocks, or with ſtones in the ſand; this they call a *lump;* and from this pond they lay a pipe, through which, when the ſea is in, the water runs into a well adjoining to the ſaltern, and by this well they pump it into troughs, by which it is conveyed into their ſhip or ciſtern, in which it is ſtored up till they have occaſion to uſe it.

The ciſtern is built cloſe to the ſaltern, and may be placed moſt conveniently between the boiling-houſes on the back ſide of the fore-houſe. It is made either of wood, brick, or clay, and ſhould be covered with a ſhed, that the ſalt-water in it may not be weakened by rains, and ſhould be placed ſo high that the water may conveniently run out of it into the pans. When the ſea-water has ſtood in the ciſtern till the mud and ſand are ſettled from it, it is drawn off into the ſalt-pan; and at the four corners of the ſalt-pan, where it is ſupported by the brick-work, and conſequently the flame does not touch its bottom, there are placed four ſmaller leaden pans and ſcratch-pans, which, for a ſalt-pan of fifteen feet, are uſually about a foot and a half long and a foot broad, and three inches deep. Theſe have a bow or circular handle of iron, by which they may be drawn out with a hook when the liquor in the pan is boiling.

The ſalt-pan being filled with ſea-water, a ſtrong fire of pit-coal is lighted in the furnace, and then, for a pan which contains about fourteen hundred gallons, the ſalt-boiler takes the whites of three or four eggs, and incorporates them all with two or three gallons of ſea-water, which he pours into the ſalt-pan, while the water contained in it is only lukewarm, and mixes this with the reſt by ſtirring it about with a rake. In many places they uſe, inſtead of eggs, the blood of ſheep or oxen to clarify the ſea-water, and in Scotland they do not give themſelves the trouble of clarifying it at all. As the water heats, and approaches boiling, there ariſes a black frothy ſcum upon it, which is collected into four ſmall pans at each corner of the boiler, called "ſcratch-pans;" and a great part is alſo taken off with flat wooden ſkimmers. This impurity is earthy matter proceeding from the decompoſition of certain earthy ſalts, and is called by the workmen "ſcratch." After this the water appears perfectly clear, and by boiling it briſkly about four hours, a pan loaded in the common way, that is about fifteen inches deep, will begin to form cryſtals upon its ſurface. The pan is then filled up a ſecond time with freſh ſea-water, applying the eggs or bullock's blood, and the operation of ſkimming as before: about the time when it is half filled, the ſcratch-pans are taken out and emptied of a white powder, ſeeming a kind of calcareous earth, which ſeparates itſelf from the ſea-water during its boiling, before the ſalt begins to ſhoot. When theſe have been emptied they are again put into their places, where they are afterwards filled again. This powder, being violently agitated by the boiling liquor, does not ſubſide till it comes to the corners of the pan, where the motion of the maſs is ſmaller, and it there falls into theſe pans placed on purpoſe to receive it. The ſecond filling of the pan is boiled down after clarifying in the ſame manner as the firſt, and ſo a third, and a fourth; but in the evaporation of the fourth, when the cryſtals begin to form themſelves, they ſlacken the fire, and only keep the liquor ſimmering; in this heat they keep it all the while that the ſalt is granulating, which is ten or twelve hours. The granules or cryſtals all fall to the bottom of the pan; and when the water is almoſt all evaporated, and the ſalt lies nearly dry at the bottom, they rake it all, altogether, into a long heap on one ſide of the pan, or into two heaps, one at each end of the pan, where it lies a-while to drain from the brine, and then is put into barrows and carried to the ſtore-houſe, and delivered into the cuſtody of his majeſty's officers. In this manner the whole proceſs is uſually performed in twenty-four hours, the ſalt being commonly drawn out every morning. This is the method in moſt of our ſalt-works, but in ſome they fill the pan ſeven times before they boil up the ſalt, and ſo take it out but once in two days, or five times in a fortnight. In the common way of four boilings, a pan of the uſual ſize, containing one thouſand three hundred gallons, they draw from fifteen to twenty buſhels of ſalt every day, each buſhel weighing fifty-ſix pounds.

When the ſalt is carried into the ſtore-houſe, it is put into *drabs*, which are partitions, like ſtalls for horſes, lined at three ſides, and the bottom with boards, and having a ſliding-board on the fore-ſide to draw up on occaſion. The bottoms are made ſhelving, being higheſt at the back, and gradually inclining forward; by this means the brine remaining among the ſalt, eaſily ſeparates and runs from it, and the ſalt in three or four days becomes ſufficiently dry. In ſome places they uſe cribs and barrows, which are long and conic wicker baſkets for this purpoſe, and in ſome places wooden troughs with holes in the bottom. The ſaline liquor which remains from the making of ſalt, is what is called *bittern*.

The ſides of the pans in which the ſalt is made, are ſoon cruſted over with the ſame ſort of matter, formed into cakes or cruſts, that falls in powder into the ſcratch-pans; this the workmen call "ſtone ſcratch;" thus diſtinguiſhing it from that ſkimmed from the top, which they call "powder ſcratch:" they are obliged to cleanſe the pans of it once in a week or ten days, otherwiſe they will be burnt. In England they do this with iron picks, but at Halle in Saxony they have a much better method; for they there take out the pans, and turning them bottom upwards, burn ſtraw under them, by which means the matter of the cruſt looſens itſelf, and after this it falls off on being ſtruck with a mallet or hammer.

In Lancaſhire, and ſome other parts of England, ſea-ſalt is made in this manner; they pare off, in dry weather, in ſummer, the ſurface of the flats, which are covered at full ſea, and bare when the tide is out. When they have procured heaps of this they put it into troughs, and pour freſh water on it; this waſhes off the ſalt that hung about the ſand, and is received ſo impregnated into veſſels ſet underneath the troughs. So long as this liquor is ſtrong enough to bear an egg, they put on more water; when an egg ſinks in it they throw the ſand out of the troughs, and put in freſh from the heaps. The water thus impregnated with ſalt they boil in leaden pans, and evaporate to a dryneſs, the ſalt remaining behind.

Brine or *fountain* ſalt is prepared from the water of ſalt wells and ſprings. See SALT-*Brine Springs*.

The ancient methods of boiling brine into ſalt, in Cheſhire and Worceſterſhire, are accurately deſcribed in the Tranſactions of the Royal Society; and the method, formerly uſed in Staffordſhire, is delivered in Dr. Plott's hiſtory of that county; but the method now generally uſed in England is this.

The brine being received from the well into a large ciſtern, is thence received, as occaſion requires, into the ſalt-pan. Theſe pans are of the ſame form with thoſe uſed in the boiling of ſea-ſalt, and uſually hold about eight hundred gallons; in ſome places theſe are made of iron, and in others of lead. When the brine is put into the pan, a little blood is mixed with it, in order to clarify it, and leaden pans are placed at the corners to receive the ſcratch, or calcareous earth, that ſeparates from them in the boiling. An ounce of blood is ſufficient for eight hundred gallons of brine. In ſome places they clarify their brine with whites of eggs. As ſoon as it is boiled, it is carefully ſkimmed, and afterwards it is ſuffered to boil very briſkly for ſome time, till the ſalt is granulated; after this the ſcratch is ſeparated, and the fire ſlackened, till the whole ſalt is formed.

When they have ſeparated the ſcratch, and the ſalt is ready to cryſtallize, they put into the pan ſeveral ſorts of ſeaſoning, as they call them, ſuch as ale, butter, and the like, which they ſuppoſe correct the bad qualities of the brine, and make the ſalt of a ſmaller grain. After this they boil it very gently, and when as much ſalt is formed as will fill two or three of their wicker baſkets, they rake it up to the ſides of the pan, and fill it into the baſkets, placing them over the leach trough, that the brine may drain into it from the ſalt. The ſalt taken out they call a "draught" of ſalt, and the operation, a "clearing" of the pan.

In this manner they draw the ſalt, and clear the pan five or ſix times during each proceſs, leaving at laſt only a few quarts of brine at the bottom of the pan. The baſkets into which they put the ſalt out of the pan are called alſo *barrows;* they uſually contain about a buſhel of ſalt, and are of a conic figure, open at the baſe. The whole proceſs of working a pan of brine uſually laſts about twenty-four hours. After the ſalt has drained an hour or two in the baſkets, it is removed into the hot-houſe over the furnace, where it remains four or five hours to be thoroughly dried, and is then taken out of the baſkets, and laid up for ſale. In all the Engliſh ſalt-works, the leach brine, which is what remains in the pan after the ſalt is cryſtallized, and what drains from the ſalt in the baſkets, is not thrown away, as it is in Germany, but is added to the pan next to be boiled. And beſide the ſalt made in this manner, they have, at moſt of the Engliſh ſalt-works, a different kind, which they call *ſhivery ſalt*. This is of a larger and firmer grain than that prepared in the common way, and is ſtronger, being formed by a milder heat, and therefore more fit for preſerving meat. When they would make this ſalt, they fill the pans on Saturday night, and then, as they draw out no ſalt on Sundays, there is a very moderate fire kept up all that day, and on Monday morning all the ſalt is taken out at one draught, having had time to form itſelf into larger cryſtals than ordinary, as it is eight and forty hours inſtead of four and twenty in forming.

They have alſo another kind of ſalt, made up in form of ſugar-loaves, in ſmall wicker baſkets, which is thence called *loaf-ſalt*, or *baſket-ſalt*. This is the whiteſt, drieſt, and fineſt grained of any ſalt, and is therefore greatly eſteemed at table. In preparing this ſalt they uſe ſome reſin and other additions, to break the grain and render it very ſmall; others alſo, to this purpoſe, boil it the more briſkly, and ſtir it briſkly all the while. But in Cheſhire, where the beſt baſket-ſalt is made, they uſe no particular proceſs about it, but only take the ſecond and third draughts of every pan, which always are the pureſt ſalt; and they do not ſuffer theſe to lie ſo long in the pan, as when they make ſalt of a larger grain, but take it out before it can form large cryſtals; by this means they have it of a fine ſmall grain, and they then preſs it hard down into the wicker baſkets, and when dried in the ſtove, they let it remain in the baſkets for ſale.

Not long ſince, Mr. Lowndes publiſhed a method of greatly improving the Engliſh brine-ſalt, ſo as to make it at leaſt equal to the French bay-ſalt.

The method is this. Let a brine-pan, containing about eight hundred gallons of liquor, be filled with brine to within an inch to the top; then make and light the fire, and, when the brine is juſt luke-warm, put in either an ounce of blood from the butchers, or the whites of two eggs. Let the pan boil with all poſſible violence, and as the ſcum riſes take it off. When the freſh or watery part is pretty well decreaſed, throw into the pan the third part of a pint of new ale, or the ſame quantity of the grounds of any malt liquor. When the brine begins to grain, add to it the quantity of a ſmall nut of freſh butter, and when the liquor has ſtood half an hour longer, draw out the ſalt. By this time the fire will be greatly abated, and ſo will the heat of the liquor; let no more fuel be thrown on the fire, but let the brine gently cool, till a perſon can juſt bear to put his hand into it; keep it in that degree of heat as nearly as poſſible, and when it has worked for ſome time, and is beginning to grain, throw in the quantity of a ſmall nutmeg of freſh butter, and about two minutes after that ſcatter throughout the pan, as equally as may be, an ounce and three quarters of common alum, pulverized very fine; then inſtantly, with the common iron ſcrape-pan, ſtir the brine very briſkly in every part of the pan for about a minute; then let the pan ſettle, and conſtantly feed the fire, ſo that the brine may never be quite ſcalding hot, yet always a great deal more than luke-warm; let the pan ſtand working thus for about three days and nights, and then draw it, or take out the ſalt. The brine remaining will, by this time, be ſo cold, that it will not work at all, therefore freſh coals muſt be thrown upon the fire, and the brine muſt boil for about half an hour, but not near ſo violently as before the firſt drawing; then, with the uſual inſtrument, take out ſuch ſalt as is beginning to fall, and put it apart; then let the pan ſettle and cool. When the brine becomes no hotter than one can juſt put one's hand into it, proceed as before, and let the quantity of alum not exceed an ounce and a quarter, and about eight and forty hours after draw the pan, and take out all the ſalt. Lowndes's Brine Salt improved.

This is Mr. Lowndes's proceſs; except that he afterwards directs cinders to be chiefly uſed in preparing the fires, the better to preſerve an equal heat, and by that means alſo he propoſes ſaving a conſiderable expence, aſſerting that at preſent cinders are ſo little valued in Cheſhire, as to be thrown out into the highways. Mr. Lowndes adds, that in a pan of the ſize before-mentioned, there may be prepared, at each proceſs, ſixteen hundred pounds weight of ſalt from the beſt brine in Cheſhire, and one thouſand and ſixty-ſix pounds from the ordinary brine of that country. This, as the proceſs continues five days, is a little more than five buſhels and a half of ſalt a day from the beſt brine, and a little more than four buſhels a day from the ordinary kind.

The ſalt-boilers, and particularly thoſe that prepare brine-ſalt, have long been accuſtomed to make uſe of various ſubſtances, which they call additions or ſeaſonings, and mix them with the brine while it is boiling; either when they firſt obſerve the ſalt begin to form, or elſe afterwards during the time of granulation. The intention of theſe additions is to make the ſalt grain better, or more quickly form into cryſtals, to make it of a ſmall fine grain, to make it of a large firm and hard grain, and leſs apt to imbibe the moiſture of the air, to render it more pure, and to make it ſtronger and fitter for preſerving proviſions.

The additions commonly uſed for theſe purpoſes are wheat-flour and reſin, in order to give the ſalt a ſmall grain; butter and tallow, to make the brine cryſtallize more readily; new ale, ſtale beer, bottoms or lees of ale and beer, wine lees, and alum. Wine lees, new ale, ſtale ale, and the lees of ale and beer, are now generally rejected by the marine ſalt-boilers; except in the weſt of England, where the briners, who uſe them, affirm that they raiſe a large grain, and make their ſalt more hard and firm, and ſome ſay that they make it cryſtallize more readily.

Hoffman prefers the ſtrongeſt ale; and Plot aſſures us that it makes the ſalt of a larger or ſmaller grain according to the degree of its ſtaleneſs. Dr. Brownrigg apprehends that the only good effects which fermented liquors can have, as an addition, are owing to their acid ſpirit, which may correct the alkaline ſalts of the brine, and thus render the common ſalt more dry and hard, and leſs apt to diſſolve in moiſt air. For correcting the alkaline quality of the brine, if any additions are thought neceſſary, he recommends ſtale ale or Rheniſh wine; or perhaps malt vinegar would anſwer the ſame purpoſe. Alum and butter were long uſed in Cheſhire, but the uſe of the former has been diſcontinued. Mr. Lowndes introduced it, with a view of correcting the flakyneſs and ſoftneſs of brine-ſalt; but Dr. Brownrigg is of opinion, that alum cannot anſwer theſe purpoſes, and that it is not neceſſary; for, he ſays, that the grains of common ſalt will always be ſufficiently hard, and of their natural figure, large ſize, and undeliquiable, if formed by a gentle heat and perfectly free from heterogeneous mixtures; and he imagines, that the goodneſs of Mr. Lowndes's ſalt is not owing to the alum, but to the gentle heat uſed in the preparation of it. The addition recommended by the Dutch will appear in the ſequel of this article.

We may obſerve that bay-ſalt and boiled ſalt have reſpective different qualities, according as they are prepared at different places; and there are two general cauſes of this diverſity; one reſpects the manner of preparing the ſalt, the other reſpects the quality of the water from which the ſalt is prepared. When ſea-water or brine is boiled into ſalt, a portion of the acid, which is one of its conſtituent parts, is diſperſed; and a greater or leſs portion is diſperſed, according as the ſalt has been formed with a greater or leſs degree of heat. We have an inſtance of this, both in bay-ſalt compared with boiled ſalt, and in the different ſorts of the latter, when compared with each other.

Bay-ſalt, which is prepared from ſea-water, by the mild heat of the ſun, is generally eſteemed much ſtronger than the white ſalt, which is prepared likewiſe from ſea-water, by boiling the water. Hence this ſalt is not only weaker, but more diſpoſed to deliquiate in the air; both which imperfections are ſaid to be corrected by a ſmall addition of freſh acid, when the ſalt begins to concrete. Hence alſo diſtilled ſea-water is manifeſtly impregnated with acid, ſo as to be unfit for drinking, or for the common purpoſes of life; unleſs a little chalk, vegetable aſhes, or other like ſubſtances, be added in the diſtillation, to abſorb and keep down the acid extricated by heat; by which means the diſtilled fluid proves perfectly ſweet.

White ſalt is prepared by boiling either the natural brine of ſea-water, or ſalt-ponds and ſprings, whence are obtained the marine ſalt and brine ſalt, or the ſtronger brine produced by artificial means, *viz.* by previous evaporation, or ſolution of foſſile ſalt, or the impregnation of common ſalt drawn from earths, ſands, or ſtones. Of this ſalt two very different kinds are required; the one for the uſe of the table, and the other as a condiment for proviſions. Its whiteneſs, dryneſs, and the ſmallneſs of its grains, are the properties which chiefly recommend the firſt kind, and its ſtrength and purity the latter.

Dr. Brownrigg has propoſed a method of improving the preparation of both kinds, founded on the following principles; *viz.* 1. That in the common proceſſes for making white ſalt, the ſalt is deprived of a conſiderable part of its acid ſpirit, by the violent boiling uſed in its preparation; whence it is rendered leſs fit for preſerving fiſh, fleſh, and other proviſions, than it would be if prepared with a more gentle heat. 2. That moſt kinds of white ſalt are rendered impure by the mixture of various heterogeneous ſubſtances, which render it leſs proper for preſerving proviſions than it would be if ſeparated from them.

In order to obtain a ſalt of this kind, free from all impurities, and in no reſpect weakened by a diſſipation of its acid ſpirit, let the ſea-water (if that be uſed) be heightened into a ſtrong brine by the ſun, after the method practiſed in Hampſhire, and other parts of England, or in a ſalt-marſh conſtructed after the French manner.

For this purpoſe, a ſaltern muſt be erected adjoining to the ſalt-marſh, and a large boiler, or ſalt-pan, made of iron, placed in it. The bottom of the pan may be of a ſquare figure, forty feet on each ſide, and its depth may be eighteen inches; or it may be made of a cylindrical form, forty feet in diameter, and eighteen inches deep, like thoſe uſed in Holland. The furnace over which the pan is erected may have four mouths, made on the oppoſite ſides at equal diſtances, for the convenience of receiving fuel. The fire may be made on a hearth; and within the furnace muſt be erected proper pillars of brick, or mid-feathers; and, if neceſſary, ſtrong poſts and croſs bars of iron, to ſupport the bottom of the ſalt-pan. There muſt be alſo four funnels, for conveying away the ſmoke, at equal diſtances, between the mouths of the furnace. If the pan be ſquare, the funnels may be carried up at its four corners, and the mouths may be under the middle of its four ſides. To the mouths muſt be fitted cloſe doors, and the funnels muſt be furniſhed with regiſters, for regulating the fire. When this apparatus is provided, let the ſalt-pan be filled with ſtrong brine, drawn from the ciſtern, and well cleared from its muddy ſediment. Then kindle a fire, and mix a ſufficient quantity of whites of eggs with the brine, in order to clarify it; let the brine boil gently at firſt, and let it be well ſkimmed. When this is done, diminiſh the fire, and apply a moderate heat, ſufficient to keep the brine of a ſcalding heat.

When the ſalt begins to grain, rake out the ſcratch, which will be found at the bottom of the pan. When the brine is thus fully depurated, in order to correct its alkaline quality, a proper quantity of ſour whey may be added to it; the brine being kept of a ſcalding heat, while the ſalt is graining or forming into cryſtals; and when moſt of it is cryſtallized, and lies in the pan almoſt dry on its ſurface, the fire muſt be damped by ſhutting the doors of the furnace and regiſters; and the ſalt muſt be drawn from the liquor to the ſides of the pan, and put into drabs, or proper veſſels, till the bitter liquor is drained from it, and then it will be fit to be uſed in the ſecond proceſs of refining.

In this way may be prepared a ſea-ſalt ſtronger, and of a much firmer and larger grain, than any kind of common white ſalt made by the ordinary methods; and alſo a ſalt for the table, better in quality and cheaper than that prepared by the common methods. However, it is neceſſary to obſerve, that the ſalt which is required of a fair grain, ſhould be granulated with quicker fires, and drawn out of the pan before it hath lain long enough to form itſelf into large cryſtals, ſo that it may be taken out at five or ſix draughts during the proceſs. The ſecond or third draughts will be the beſt ſalt, being moſt free from ſcratch, and the ſalts of the bittern. After the ſame manner, a good kind of white ſalt may be extracted from natural brine, and likewiſe from a ſolution of rock-ſalt in weak brine or ſea-water.

In the ſecond proceſs of refining, a ſufficient quantity of the white ſalt, prepared as above directed, ſhould be put into a large ciſtern, made of wood, or bricks and clay; and to this ſhould be added as much pure river-water as will be ſufficient to reduce it to ſtrong brine, almoſt fully ſaturated with ſalt; when the ſalt is diſſolved, and the brine has remained unmoved, a ſcum will ariſe which muſt be taken off, and a ſediment will fall to the bottom. Let the clear brine be drawn out of the ciſtern into a ſalt-pan, ſuch as has already been deſcribed in the firſt proceſs, well cleanſed from bittern; let a fire be kindled in the furnace, and the heat be ſo gentle, that the watery part of the brine may be ſlowly evaporated without any of the ſaline ſpirit; for this purpoſe the heat ſhould be regular, and leſs than the heat of boiling water; but the degree which ſalt can endure without any diſſipation of its acid ſpirit, is beſt known by experience, and may be adjuſted by the regiſters, &c. When the evaporation is ſo far advanced, that little ſaline cryſtals begin to appear on the ſurface of the brine, then may be added to it a ſufficient quantity of the acid muriatic ſpirit (in the proportion of about one, two, or three drops of the ſpirit to a gallon of the brine), ſo that neither the acid, nor the alkaline principle of the ſalt, may be predominant. When this is done, the evaporation muſt be continued until the ſurface of the ſalt in the pan is almoſt dry. The doors of the furnace and regiſters muſt then be cloſed, and the fire ſmothered out, and the ſalt, which will be found in large clear cryſtals, muſt be raked to the ſides of the pan, and having drained there a little while, be taken out, and put in proper veſſels to drain farther from the ſuperfluous brine, and it will be then fit for ſale.

The ſtrong brine which remains in the pan after the refined ſalt is drawn out, and the brine that drains from it, ought not to be mixed with the ſolution intended to be made into refined ſalt, but will ſerve to mix with the brine, to be boiled up in the firſt proceſs into common white ſalt. See on the ſubject of this article Brownrigg's Art of making Common Salt, 8vo. 1748, paſſim.

Foreign ſalt, which has undeſervedly been held in great eſtimation in this country, is formed from ſea-water, in hot countries where the natural heat is ſufficient to evaporate the water from the ſalt. The ſea is let into pits or baſins made on purpoſe, and lined with clay, to prevent the water from ſinking into the earth. When one quantity is evaporated more water is let in, till the brine becomes ſaturated.

The white ſalt of Normandy is not made by refining the bay-ſalt, but has this colour naturally when taken out of the pits. To make it they gather a muddy ſand on the flats of the ſhore, which the riſing tide has covered and impregnated with its waters for ſeven or eight days. This ſand being removed into pits for the purpoſe, diſcharges itſelf by degrees of all its water, which filtrates through ſome ſtraw, with which the opening of the pit is filled, and trickles into veſſels ſet on purpoſe to receive it. Of this water it is that they make their ſalt.

Their furnaces are of earth, and their boilers of lead: each furnace boils four leads. When the water with which they have filled the leads begins to boil, they take off the ſcum, which ariſes in abundance; and in proportion as it diminiſhes, throw in freſh water, which they continue to ſkim, as before. When it thickens, they keep it continually ſtirring, with a crooked ſtick or ladle; and when the grain is formed, they take it off the fire to purify it.

The purifying is performed by letting it ſtand in large oſier baſkets; where it drains itſelf of certain humidities that remained. When dry it is laid in heaps, and thence is carried into the magazines.

The commerce of ſalt has brought an immenſe profit to France, though more to the king than to the makers and ſellers; on account of the heavy duty, which uſed to be one-fourth part of the price the ſalt was ſold at. The Engliſh and Dutch, and (when they are at war with France) the Swedes and Danes, have taken off moſt of the ſalt of the Comte Nantois; paying for it, *communibus annis*, from 20 to 35 livres the load. That of Guerande has been preferred, by the Engliſh and Iriſh, to all the reſt, as the beſt. Yet that of Borneuf, though browner, and heavier, is moſt uſed in France, as alſo throughout the Baltic; particularly in Poland, where, beſides the ordinary uſes, it ſerves in tilling the ground; being found to warm it, and prevent little vermin from gnawing the grain.

The Engliſh and Dutch have often ſtriven hard, in times of war, to do without the French ſalt; and to that end have endeavoured to take ſalt from the Spaniards and Portugueſe; but there is a diſagreeable ſharpneſs and ſeroſity natural to this ſalt, which renders it very unfit for the ſalting of fleſh, fiſh, &c. To remove this, they boil it with ſea-water, and a little French ſalt, which they procure by means of neutral nations, which not only ſoftens it, but increaſes its quantity by one-third. But it ſhould ſeem their refining does not ſucceed to their wiſh, by the eagerneſs with which they return to the ſalt of Bretagne, &c. as ſoon as any treaty has opened the commerce. See SALT-*Marſhes*.

In the ſouth of France theſe works are carried to a great extent. The land generally deſtined for this purpoſe is flat, having a clayey ſoil, and not liable to inundations. It is ſurrounded by a wall or bank, having inlets next to the ſea, capable of being opened and ſhut at pleaſure. The land thus allotted is divided into fields or compartments, of from fifty to one hundred acres. When the evaporation is ſo far advanced that the ſalt begins to be depoſited, it is pumped up on a platform elevated above the fields, for the purpoſe of giving free acceſs of air, by which the remaining water is evaporated. As the water evaporates more brine is pumped up, till the ſalt is formed into a cruſt of about three inches in thickneſs. This platform is divided into many compartments, connected with each other by a common gutter. When the ſalt has become hard it is broken into pieces, and laid up in heaps, ſheltered from the rain. It will be obvious, from what has been obſerved of the Engliſh ſalt extracted from ſea-water, that this incruſted maſs muſt contain a certain portion of thoſe earthy ſalts which conſtitute the *bittern*. This bitter fluid drains from the incruſted heaps for a long time, and the ſalt made in this way is not deemed perfectly good till it has been expoſed for three years. In ſome places theſe drainings are collected for the purpoſe of procuring ſulphate of magneſia, and other preparations containing magneſia. When ſalt is not freed from theſe deliqueſcent ſalts, it is apt to become moiſt in the air, and has a diſagreeable bitter taſte.

This ſalt is called *bay-ſalt*, and a prejudice has prevailed in its favour in moſt countries, as poſſeſſing more valuable properties in preſerving animal food. The valuable eſſay by Dr. Henry, to which we have before referred, deſerves the greateſt praiſe, inaſmuch as it clearly proves that the foreign ſalt, ſo far from being ſuperior to the Cheſhire ſalt, is very inferior to it in thoſe points on which its preſerving quality depends. This prejudice has made us dependent upon France, Spain, and Portugal, for an article which we might with as good reaſon export.

The following table is the reſult of Dr. Henry's analyſis, which was conducted with great ſkill, and with his uſual accuracy. It may be obſerved here, that it is the opinion of ſeveral chemiſts, that ſalt, and the bittern in which it is formed, contain ſulphate of ſoda. From Dr. Henry's experiments this appears to be a miſtake.

One Hundred Parts by Weight conſiſt of

Kinds of Salts.			Inſoluble Matter.	Muriate of Lime.	Muriate of Magneſia.	Total earthy Muriates.	Sulphate of Lime.	Sulphate of Magneſia.	Total Sulphates.	Total Impurities.	Pure Muriate of Soda.
Cheſhire Salt from foreign	Bay-water.	St. Ubes -	9	a trace	3	3	23½	4½	28	40	960
		St. Martin's -	12	ditto	3½	3½	19	6	25	40½	959½
		Oleron -	10	ditto	2	2	19½	4¼	23¾	35¾	964¼
	Sea-water.	Scotch (common) -	4	—	28 &c. +	28 &c. +	15	17½	32½	64½	935½
		Scotch (Sunday) -	1	—	11½	11½	12	4½	16½	29	971
		Lymington (common)	2	—	11 &c. +	11 &c. +	15	35	50	63	937
		Ditto (cat) -	1	—	5	5	5	5	6	12	988
	Salt.	Cruſhed rock -	10	0$\frac{1}{16}$	0$\frac{3}{16}$	0¼	6½	—	6½	16¾	983¼
		Fiſhery -	1	0¼	0¾	1	11¼	—	11¼	13¼	986¾
		Common -	1	0¼	0¾	1	14½	—	14½	16½	983½
		Stoved -	1	0¼	0¾	1	15½	—	15½	17½	982½

The three firſt ſpecimens are of the foreign or bay-ſalt. In the column marked total quantity of impurities, it will be ſeen that they are not by any means ſo pure as the four laſt, which are the Cheſhire ſalts. A large portion of their impurities, it will be ſeen by the ſecond column, is inſoluble matter, which is principally clay, derived from the platform on which it was evaporated, which is formed of wood, and plaiſtered with clay to make it water-tight. The ſulphate of lime is doubtleſs an ingredient of the ſea-water. Perhaps the circumſtance of the heaps of ſalt being left ſo long to drain out their deliqueſcent ſalts, may account for their containing ſo ſmall a quantity of the muriates of lime and magneſia, and ſulphate of magneſia.

Dr. Henry gives another reaſon for the deficiency of the latter ſubſtances in bay-ſalt. The evaporation being very ſlow, the cryſtals are much larger than thoſe produced by artificial heat alone, which is the caſe with the Britiſh ſpecimens obtained from ſea-water: and ſince the deliqueſcent ſalts can exiſt only upon the ſurface of the cryſtals, it will be evident that the quantity contained in any ſalt, will be as the ſurface expoſed, which will be as the number of cryſtals in a given maſs, and inverſely as their ſize.

This very clearly ſhews why the bay-ſalt is leſs contaminated with the deliqueſcent ſalts. The reaſon why bay-ſalt contains more ſulphate of lime than the Britiſh, will be explained from the pains taken to remove the matter which is ſeparated while evaporating. The ſulphate of lime, being ſparingly ſoluble, is ſeparated in clearing the pan; and forms alſo a part of the incruſtation at the bottom of the pan, called *ſcratch* in the ſalt-works in the North, and *pan-ſcale* in Cheſhire. The Scotch common ſalt, for reaſons above given, contains a large proportion of the deliqueſcent ſalts, and of ſulphate of magneſia. The evaporation is carried on rapidly; in conſequence of which the cryſtals are ſmall, which gives a greater ſurface for the moiſt ſalt to adhere to.

The Sunday ſalt is ſo called, from the fire being let out from Saturday night till Monday morning. The evaporation, by this means, is ſlower, and the cryſtals larger, and in conſequence preſents a leſs ſurface for the retention of the liquid impurities.

The Lymington common ſalt contains nearly the ſame quantity of impurities with the Scotch common. But the quantity of ſulphate of magneſia much exceeds the muriates. The quantity of impurities in the two varieties depends upon the ſimilarity of their cryſtals, with reſpect to ſurface, the quality of each depending upon the ſea-water from which it is obtained.

The cat-ſalt, of the formation of which we have before ſpoken, is formed by a very ſlow cryſtallization; hence its cryſtals are large and ſmooth on the ſurface; and hence, as will be ſeen in the table, it is the moſt pure of all the varieties.

In the four laſt, which are the Cheſhire ſalts, it will be ſeen that the impurities differ much from thoſe obtained from ſea-water.

The cruſhed rock-ſalt, excluſive of its inſoluble matter, would be nearly pure. This impurity is, doubtleſs, ſimilar to that ſeparated in cleaning the pan, *viz* carbonate of lime and oxyd of iron. The remainder is ſulphate of lime, a ſubſtance generally exiſting plentifully in the ſame ſtratum which contains the rock-ſalt. The other ſpecimens have little inſoluble matter, the impurity conſiſting chiefly of ſulphate of lime, which becomes precipitated with the cryſtals of the ſalt as the evaporation goes on. Dr. Henry, with his uſual ſagacity, conjectured that the ſulphate of lime would be the moſt abundant in the ſalt which firſt falls to the bottom, and the leaſt in the laſt portions. This he found to be the fact.

		Sulphate of Lime.
The common ſalt, drawn out two hours after the heat was applied - -	contained in 1000 parts	16
Salt drawn four hours after - -		11
Salt drawn ſix hours after - -		3½

He alſo properly obſerves, at the ſame time, that the impurities derived from the ſoluble ſalts will be the leaſt in the firſt ſalt which falls down, and the greateſt in the laſt.

Inaſmuch as the ſmallneſs of the cryſtals is favourable to the concealment of the ſoluble impurities, it is alſo the cauſe of this ſalt not being ſo well fitted for ſalting proviſions which require merely to be ſtratified with the ſalt. The fluids which proceed from the animal matter tend to diſſolve the ſalt, and the ſolution will go on more ſlowly as the cryſtals are larger; becauſe the ſurface is leſs. By this means the ſalt is more completely inſinuated, and in conſequence more effective. From this reaſoning Dr. Henry concludes, that ſalt in large grains or cryſtals is beſt fitted for the ſtratifying mode of ſalting, and ſmall ſalt better adapted for making brine or pickle, in which the ſubſtance is immerged.

This view of the ſubject may ſuggeſt ſome reaſon why a preference has been given to the foreign bay-ſalt. For, although it is not ſo pure as the Cheſhire common ſalt; yet, from the ſlow way in which it is evaporated, the cryſtals are larger, and in conſequence poſſeſs the advantage above ſtated. The large-grained fiſhery-ſalt, however, is certainly ſuperior to the bay-ſalt for the ſtratifying method of ſalting. Indeed, its name ſeems to have ariſen out of its own celebrity; and it is no uncommon practice for this ſalt to be ſold as bay-ſalt. In all ſalt-works theſe hints may be turned to ſome account, particularly in the manufacture of fiſhery-ſalt. By a more protracted evaporation, the cryſtals will be larger, which has two advantages in that made from ſea-water:—the ſalt will contain leſs of the ſoluble impurities, which are the muriates of lime and magneſia, and ſulphate of magneſia; and it will be as well fitted for all purpoſes as the foreign ſalt, the importation of which is a national evil, and a diſgrace to thoſe who prefer it to our own large-grained ſalt.

Salt *upon Salt*, a kind of common ſalt prepared by the Dutch, of great uſe in preſerving herrings and other fiſh, and to which they principally owe their advantages in the herring-trade. The Dutch prepare two kinds of refined ſalt, one of a ſmall grain, intended for the uſe of the table, and called butter ſalt. They export large quantities of this to the countries upon the Rhine, and into other parts of Germany. The other kind is a very ſtrong and pure ſalt, and is of the largeſt grain of any boiled ſalt now made: this laſt they call the St. Ubes's or Liſbon ſalt, from its reſemblance to the pure bay-ſalt made in thoſe places.

The ſalt which they refine is altogether marine bay-ſalt, and they chiefly have it from France and Spain; but they find, by experience, that any one kind of bay-ſalt does not anſwer their purpoſes ſo well as two or more kinds; they therefore frequently mix three parts of Cadiz ſalt with one part of that of Souſton, which is of great ſtrength, but very dirty, and of a green colour, and does not coſt above half the price of the Spaniſh ſalt: for diſſolving the bay-ſalt they uſe ſea-water, which they bring in lighters to Dort and Rotterdam from below the Brill or Helvoet; out of theſe lighters it is craned into cellars, and is thus impregnated with bay-ſalt to a certain degree of ſtrength, which they determine by hydrometers made for that purpoſe. After the heavy droſs of the ſalt is ſubſided at the bottom of the cellar, the clear brine is pumped up into the ſalt-pan through a mat, which retains the light ſcum, ſtraws, or other impurities, which floated on the ſurface of it. Theſe ſalt-pans are of iron, of a round figure, and commonly forty feet in diameter, and eighteen inches deep. Theſe pans are placed over a hearth-furnace, and the only fuel they uſe in boiling the ſalt is dry turf. The fire is kept up ſo high, that the liquor boils briſkly all the time, and if any ſcum ariſes, they carefully take it off, but they uſe no clarifying mixtures. A little before the ſalt begins to granulate, they add to the pan a lump of butter, of the bigneſs of a walnut, and half a pint of ſour whey, which has ſtood at leaſt half a year. This acid whey, called *azy*, unites itſelf with the uncombined fixed alkali contained in the ſalt, and thus prevents it from adhering to the common ſalt as it cryſtallizes. Any other mild acid might probably anſwer the ſame purpoſe. When theſe things are perfectly mixed in by a good ſtirring, they ſhut the doors and windows of the houſe, that no air may blow in cold, and the houſe is kept thus hot all the time that the ſalt is forming. This method is not new or peculiar to the Dutch works, for Agricola deſcribes an apparatus of boards to keep the cold air out of the ſalt-pan all the time that the ſalt is forming; and the Germans uſe it, in many places, at this time.

It is out of this ſame brine, and by the ſame proceſs, that they make the table-ſalt and the ſtrong ſalt; only towards the end of the proceſs they make this difference; if the pan is to be wrought into table-ſalt, the brine is kept gently ſimmering during the whole operation, and all is finiſhed in twenty-four hours; but if it be to be made into a ſtrong ſalt, they ſlacken the fire to ſuch a degree, that the operation takes up three days. In both caſes they let the ſalt remain in the pan till the whole is finiſhed; they then rake it out with wooden rakes, and after it has drained a-while in wooden drabs, it is fit for uſe. The mother-brine, of which there always remains a large quantity in the pan after the ſtrong ſalt is made, as alſo the drainings of the drabs where the ſalt is put, is reſerved to be boiled up into table-ſalt; but the mother-brine of table-ſalt becomes more ſharp and bitter after every proceſs, and is finally thrown away.

The principal uſes to which ſalt is applied, are as a ſeaſoning in our food, in the making of butter and cheeſe, the curing of hams, bacon, and fiſh, and the preſervation of animal and other ſubſtances. For the firſt of theſe purpoſes it ſeems almoſt an indiſpenſable neceſſary, ſo inſipid would be moſt kinds of food without it. It is remarked, with ſome truth, that its flavour is agreeable to moſt other animals as well as man. There are places in America where the ſea occaſionally overflows, which, on the water evaporating, leaves the ſalt. Theſe places are called *licks*, and are the reſort of vaſt crowds of different quadrupeds, whoſe object is to lick the ground for the ſake of the ſalt. It is ſaid that hay, ſprinkled with ſalt, is eaten by cattle with greater avidity. Salt has been ſaid to be injurious to health when taken in more than common quantity. It would, however, be difficult to mark out any inconvenience in thoſe who take more than is generally taken. Each perſon acquires the habit of a certain doſe in his food, above or below which he would feel great inconvenience in taking it. Some countries far removed from the ſea, and having no ſupply from the mineral ſalt, are obliged to extract it from the aſhes of certain vegetables. In ſome places it is ſo valued from its ſcarcity, as to become a ſubſtitute for coin. In ſome of the northern countries, where fuel is ſcarce, the ſea-water is let into ditches lined with clay, and the water, on freezing, concentrates the ſalt in the remaining fluid, which, being ſaturated, requires leſs evaporation. The uſe of ſalt in preſerving food is found to have ſome diſadvantages. Although it preſerves the food, it ultimately changes its nature, and deſtroys its nutritious qualities. We have ſtriking inſtances of theſe effects in the ſea-ſcurvy, which is not produced by the ſalt in the meat, but from its being deprived of its nutritive qualities and rendered indigeſtible. Pickles or vats made with ſugar, nitre, and a little ſalt, are ſaid to preſerve meat better, without injuring its quality.

Sir Humphrey Davy ſuppoſes that the power of ſalt in preſerving animal and vegetable ſubſtances is owing to its attraction for water, by which the decompoſing action of that fluid is prevented, as well as to its power of excluding air. And Dr. Holland, who ſeems to have attended much to the ſubject, thinks, that although the different ſorts of this ſubſtance differ little in their nature or purity in conſequence of the manner in which they are made, it may readily be conceived, that their difference in form, as well as compactneſs, may fit them for very various applications in theſe intentions, eſpecially in the preſervation of animal fleſh and proviſions. But in every caſe, the more pure the ſalt is, and the more free from any admixture of foreign alkaline or earthy ſaline matter, the more effectual it will be for the purpoſe it is deſigned. Thus it is ſuppoſed by the writer juſt mentioned, that for table uſe, the ſalting of butter, and various domeſtic purpoſes, a preference ſhould be given to the finer kind of ſalt, or that which is prepared by a boiling heat; as the ſmallneſs of its grain fits it in a better manner for all ſuch applications. It is alſo better for the making and preſerving of cheeſe; and in that proceſs, as well as in the making and preſerving of butter, it is particularly proper, in conſequence of its blending, incorporating, and uniting itſelf in ſo equal and intimate a manner with the different ſubſtances. It may likewiſe be the moſt proper for preſerving different kinds of vegetable ſubſtances on the ſame account.

For the like reaſon of the ſmallneſs of its grain or particles, as well as from its conſequent readineſs of ſolution, the ſame ſort of ſalt may, it is ſaid, be well, or perhaps the beſt adapted of any for making the pickle for *ſtriking* the meat, which, with the rubbing it well on and into the ſubſtance, for which ſuch a ſtate of its parts admirably fits it, is the primary proceeding in the preſerving of animal fleſh, and the firſt part of the proceſs in the curing of fiſh in the fiſheries, or in other ways and intentions.

But it is contended, that for the purpoſe of *packing* fiſh and proviſions of the meat kind, it is by no means ſo proper, or ſo well fitted and efficacious, as the common or large-grained fiſhery-ſalt; for, as might be expected, it is found, when applied to this purpoſe, not to preſerve them in an equally effectual manner from taking on or running into the ſtate of putrefaction. This, however, is ſtated to ariſe, not from any want of purity in the ſalt, or from any admixture of earthy ſalts or other matters with it; but from the ſmallneſs of its grain or particles, and its want of hardneſs and compactneſs, originating from the circumſtance of its containing a larger proportion of the water of cryſtallization than the larger grained ſalt. Therefore, in conſequence of its being ſo ready of ſolution, the whole of it is formed into brine; which, it is thought, by being forced out from betwixt the layers of fleſh or fiſh, by the preſſure of theſe on each other, the different portions of animal matter are allowed to come into cloſe contact, without having any ſalt interpoſed. Whereas, on the contrary, when the ſalt of a larger grain is employed, a conſiderable part of it continues long undiſſolved; ſeparating the different layers or portions of meat; admitting in ſome degree the brine to flow and inſinuate itſelf betwixt them; and furniſhing a conſtant new ſupply of ſaturated brine, from the gradual ſolution of the ſalt in the fluids exuding from the animal matter, to every part of the packed proviſions or other matters.

And it is further ſuggeſted, that the action or operation of bay-ſalt in the ſame intention, is exactly ſimilar to that of the large-grained ſalt; and that neither the one nor the other would ſeem to have any ſuperiority or advantage over the fine ſalt prepared by a boiling heat, except in ſo far as the ſize and compactneſs of its cryſtals are concerned; and in containing a ſomewhat ſmaller proportion of the water of cryſtallization. And that, as the large-grained fiſhery-ſalt, which is prepared by a low degree of heat from natural brine, is, it is thought, more than equal to the bay-ſalt in theſe important points; there can be no doubt, whatever prejudices to the contrary may have exiſted, or have been formed on the matter, that it at leaſt equals the latter in its power of preſerving animal fleſh, or proviſions, and perhaps other ſubſtances.

As experience, however, has much more weight than any theory or opinion on ſuch a ſubject as the preſent, the writer has had recourſe to it in ſupport of his reaſoning on the matter. This ſort of experience is had, it is ſaid, on an extenſive ſcale, at the victualling-office near Deptford, at which, it is ſtated, the large-grained ſalt manufactured in this country from natural ſalt-brine ſprings, has for ſeveral years been the only ſalt uſed for packing proviſions, after they have been firſt ſalted or cured with common ſalt, or that which is prepared by a heat of one hundred and eighty degrees. And it is aſſerted, that though theſe proviſions have been afterwards carried to the hotteſt climates, the ſtrength and purity of the ſalt employed in preſerving them have never been called in queſtion. They have kept perfectly well, and it has never been doubted that the ſalt uſed there, was in every reſpect equal to the St. Ubes' ſalt; or to any other ſalt prepared from ſea-water, by the natural heat of the ſun. It is remarked, that what is ſold in the metropolis as bay-ſalt, is almoſt wholly the large-grained ſalt of home manufacture from natural brine-ſprings or others of the ſame quality.

However, ſtrongly rooted prejudices in favour of bay-ſalt in the preſervation of meat and fiſh ſtill exiſt in Ireland, Scotland, and perhaps in ſome parts of this country, which cannot be removed, except by ſome change in the duties of the foreign or imported ſalt, and that which is made in this country, by which the latter may be ſold at a much lower rate than the former. And ſuch a regulation would ſeem deſirable, as large ſums are now annually paid for bay-ſalt, which might be ſaved to the country without any diſadvantage.

The ſtate and form of ſalt, as the conſequence of the method of preparing it, are therefore conſtantly to be conſidered in the rural and other practices of curing meat and other ſubſtances. See SALT-*Brine Springs*.

It has been ſuggeſted by the firſt of the above writers, that where animal or vegetable food is to be preſerved on a large ſcale, he is diſpoſed to believe that it may be in ſome meaſure effected by forcibly throwing a quantity of carbonic acid, hydrogen, or azote, into the veſſel, by means of a compreſſing pump, ſimilar to that contrived for making artificial Seltzer water. In this way any change in the ſubſtances would, it is thought, be more effectually prevented. And no elaſtic fluid would, in ſuch caſes, have room to form by the decompoſition of ſuch matters; beſides, the tightneſs and ſtrength of the veſſel would be proved by the proceſs. That as no putrefaction or fermentation can go on without the production of elaſtic fluid; preſſure would probably act with as much effect as cold in preſerving theſe ſorts of proviſions.

With regard to alimentary ſalt in general, we may obſerve, that though it appears to us under various forms, it is immediately diſtinguiſhed by applying it to the tongue, and its always aſſuming the ſame figures after a regular cryſtallization. Its cryſtals are cubes, ſeveral of which unite together into the form of hollow truncated pyramids.

Common ſalt diſſolves in water, and cold water diſſolves nearly the ſame quantity as hot boiling water, nor does it concrete again in the cold, like the other neutral ſalts, as long as the evaporation of the fluid is prevented; but writers are not agreed about the proportion of ſalt diſſolved in water. Some ſay, that it diſſolves in leſs than thrice its weight of boiling water; others ſay, that it requires 3⅐th times its own quantity of water; and others again ſay, that four parts of water to one of ſalt are required for a perfect ſolution. Theſe differences may be eaſily accounted for by the different ſalts that may have been uſed. Boerhaave is of opinion, that 16 ounces of water will not diſſolve quite five ounces of rock-ſalt; Spielmann, with whom Neumann agrees, thinks that they will diſſolve 6⅔d ounces; Eller ſays, that ſeven ounces of foſſile ſalt may be diſſolved in 16 ounces of water; and Hoffmann aſſures us, that 16 ounces of water will not diſſolve above ſix ounces of common ſalt. Dr. Watſon's experiments confirm that of Hoffmann; for he obſerves, that he never could diſſolve quite ſix ounces of rock-ſalt in 16 ounces of water. The ſea-water in different parts of the world is very differently ſated with ſalt; that of ſome parts containing twice as much as others. The ſea-water which ſurrounds the coaſts of Great Britain, is ſaid to hold ſeldom more than one-thirtieth, or leſs than one-fiftieth part of common ſalt. When water is impregnated with any ſalt, as much as it can bear, it will ſtill diſſolve a quantity of another ſalt, whoſe particles are of different figures, proper to inſinuate into the remaining vacuities of the water: thus, after common ſalt will no longer diſſolve in it, alum will; and after alum, ſaltpetre; then ſal ammoniac, &c.

Although common ſalt is very cryſtallizable, and exactly neutral, it very readily becomes moiſt when expoſed to humid air, and muſt, therefore, be kept in dry places. This ſalt contracts an union with common ſalt with a calcareous baſis, and, conſequently, all the ſalt obtained either from ſea-water, or ſalt fountains, contains a certain quantity of this ſalt with earthy baſes, the white earth of which will precipitate by adding fixed alkali to a ſolution of common ſalt in pure water. In order to obtain a very pure common ſalt, it is neceſſary to diſſolve it in water, filtrate it, and add a ſolution of cryſtals of ſoda, or marine alkali, till no more white cloud is formed by the addition; then filtrate the liquor again, and evaporate it.

The cryſtals of common ſalt, expoſed to the fire, crackle and burſt, and thus form the *ſal decrepitatum*, ſoon after melt, and when cool, fix in form of a white and almoſt opaque maſs. This ſalt is abſolutely unalterable by fire, even when it has been heated ſtrongly together with inflammable matters; a property which reſults from the ſlight diſpoſition which its acid has to combine with phlogiſton, as the experiments of Meſſrs. Duhamel and Margraaf have demonſtrated. However, though it be fixed in the fire to a certain degree, yet when it is expoſed to a violent fire with free acceſs of air, it exhales in vapours, and attaches itſelf in white flowers to bodies leſs hot than itſelf. Chemiſts know no other acid but vitriolic and nitrous acids, and ſedative ſalt, which can decompoſe common ſalt by diſengaging its acid.

Common ſalt is of all ſaline ſubſtances the moſt neceſſary and uſeful. Its acid and alkali are employed in many chemical operations in the arts; it is an important ingredient in the fuſion of glaſs (ſee GLASS), which it whitens and purifies; it facilitates the fuſion and precipitation of the metallic parts of minerals in aſſays, and perfectly covers them; and its peculiar uſe in preſerving meats, &c. ſeaſoned with it, or ſteeped in ſolutions of it, and in improving the taſte of aliments, is univerſally known, and has been already mentioned. In the application of ſalt to this important purpoſe, it retards and prevents the putrefaction of almoſt all our aliments, without producing any ſuch change upon them, even when preſerved a long time, as to render them altogether unfit for nouriſhment. And though ſalted animal foods are generally accounted one of the principal cauſes of the ſcurvy at ſea, this is owing not to the ſalt itſelf being prejudicial, but to its being incapable of preſerving the animal ſubjects, for a length of time, in a perfectly uncorrupted ſtate. Pure ſea-ſalt, and ſea-water, are rather ſalubrious than hurtful, both in the true *ſcurvy*, (which ſee,) and in impurities of the blood and humours in general.

Hoffmann obſerves, that an ounce of the ſalt, diſſolved in a proper quantity of water, occaſions commonly ſix ſtools or more, without uneaſineſs; that this ſalt checks the operation of emetics, and carries them off by ſtool; that in glyſters it is more effectual, though uſed only in the quantity of a drachm, than any of the purgatives; and that where other glyſters fail of opening the belly, a ſolution of common ſalt produces effect.

With regard to the antiſeptic property of common ſalt, it is proved by the experiments of ſir John Pringle, Dr. Macbride, and M. Gardane, in his Eſſay towards a Hiſtory of Putrefaction, that, though when mixed with animal ſubſtances in a large proportion, it preſerves them from putrefaction, yet when a ſmall quantity of it is employed, it conſiderably accelerates putrefaction. Whence it appears, that ſmall quantities of common ſalt, ſuch as are taken with food, facilitate digeſtion, which is a kind of incipient putrefaction, and ſerve at the ſame time as a mild ſtimulus to the ſtomach itſelf: and, therefore, common ſalt is not only agreeable and uſeful, but alſo ſalutary, at leaſt to all conſtitutions in which the digeſtion is too remote from putrefaction, as in thoſe which are properly called crudities; though different temperaments may differ much in this reſpect. Common ſalt is obſerved to differ from other ſaline ſubſtances, in occaſioning drought, and tending, not to cool, but rather to heat the body. Lewis's Mat. Med. and Macquer's Dict. Chem. Eng. ed. art. *Common* SALT.

SALT, *Common*, *Laws relating to.* By 38 Geo. III. c. 89. the management of the ſalt duties is transferred to the commiſſioners of exciſe; and by 43 Geo. III. c. 69. 45 Geo. III. c. 14. and 47 Geo. III. ſeſſ. 2. c. 30. ſeveral duties are impoſed upon it; and by the laſt act the additional duties charged by that and the preceding are charged upon Glauber and Epſom ſalts. And 65 pounds weight avoirdupois of rock-ſalt ſhall be deemed a buſhel, and 56 pounds of every other kind of ſalt. (38 Geo. III. c. 39. ſ. 4. 45 Geo. III. c. 14. ſ. 4.) The act 47 Geo. III. ſeſſ. 2. c. 30. recites the proviſions previouſly made for impoſing duties on ſalt as follows: By 43 Geo. III. c. 69. a duty of 10*s.* is impoſed for every buſhel of ſalt and rock-ſalt made at any ſalt-work or taken out of any mine in England, and a duty of 4*s.* for every buſhel of the ſame in Scotland; and by 45 Geo. III. c. 14. an additional duty of 5*s.* for every buſhel (as above) in England for home conſumption, and 2*s.* in the ſame manner in Scotland. By the former act an allowance is directed to be made of 10*s.* for every buſhel of ſalt of Engliſh manufacture, uſed by any bleacher of linen or cotton in England, in the making of oxygenated muriatic acid for this purpoſe, and ſo in proportion for any greater or leſs quantity, deducting at the rate of 7½ *per cent.* in conſequence of the increaſe in the weight of the ſalt by the moiſture of the air, and an allowance of 4*s.* for every buſhel of ſalt uſed for the ſame purpoſe in Scotland, with a ſimilar deduction: and by the 47 Geo. III. ſeſſ. 2. c. 30. a farther allowance on ſalt uſed by bleachers in making oxygenated muriatic acid, out of the duties impoſed by 45 Geo. III. c. 14. of 5*s.* for every buſhel of ſalt of Engliſh manufacture, conſumed in England, and with the deduction above ſtated, and 2*s.* on every buſhel conſumed in Scotland for the ſame purpoſe, and ſubject to the ſame deduction.

The act 43 Geo. III. c. 69. impoſes a duty of 13*s.* 4*d.* for every buſhel of ſalt imported into Great Britain, not being Iriſh ſalt imported directly from Ireland; for every ton of rock-ſalt, which ſhall be exported to parts beyond the ſeas, other than Ireland, 1*d.*; for every buſhel of ſalt or rock-ſalt brought from Scotland into England, with a certificate that the duty of 4*s.* has been paid, 6*s.*; and for every buſhel of ſalt employed in curing and ſalting fiſh, exported from Scotland to England, 6*s.*; and for every cwt. of ſalted beef or pork, or bacon, brought by land from Scotland to England, 2*s.* 6*d.* The ſaid act allows drawbacks of 10*s.* for every buſhel of ſalt made in England, rock-ſalt excepted, for which all the duties have been paid, and duly exported; of 4*s.* for every buſhel of ſalt made in Scotland, ſimilarly circumſtanced; and of 10*s.* for every buſhel of Glauber or Epſom ſalts. By 45 Geo. III. c. 14. an additional duty of 6*s.* 8*d.* is impoſed on every buſhel of ſalt imported into Great Britain (not being Iriſh ſalt imported directly from Ireland); for every buſhel of Iriſh ſalt or Iriſh rock-ſalt, or Iriſh Glauber or Epſom ſalt, imported into Great Britain, an additional duty of 5*s.*; and by the ſame act the following drawbacks are allowed, *viz.* for every buſhel of Engliſh ſalt (rock-ſalt excepted) duly exported, 5*s.*; and for every buſhel of Glauber or Epſom ſalt, made in Great Britain, duly exported, for which the duties have been paid, 5*s.*; and for every buſhel of ſalt made in Scotland (rock-ſalt excepted) in the ſame circumſtances, 2*s.*

But the duty impoſed by this act ſhall not extend to any foreign or Britiſh ſalt delivered or received for the ſole purpoſe of curing or preſerving fiſh. By 47 Geo. III. ſeſſ. 2. c. 30. 6*d.* of the duty of 2*s.* 6*d.* *per* cwt. (under 43 Geo. III. c. 69.) on ſalted beef or pork, or bacon, brought by land from Scotland to England, ſhall ceaſe.

Commiſſioners may compound for the duty with the refiners of rock-ſalt, and alſo for the duty on mineral alkali or flux for glaſs. (45 Geo. III. c. 14. ſ. 7.) The importer of foreign ſalt ſhall pay the duty upon entry, and before landing, under the penalty of forfeiture of the ſaid ſalt, and all veſſels, horſes, carriages, &c. employed in removing, landing, or conveying the ſame, which may be ſeized by any officer of exciſe or cuſtoms; and every perſon employed, or to whoſe houſe the ſalt ſhall come after having been unſhipped, knowing the ſame, ſhall forfeit treble its value: ſ. 8. If any ſalt be imported without entry and payment of the duty, within 20 days, ſuch ſalt ſhall be forfeited, and may be ſeized: ſ. 9. Provided nevertheleſs, that ſuch foreign ſalt, not leſs than 50 buſhels, upon entry and before payment of the duty, may be landed in preſence of an officer, weighed and warehouſed upon bond being given in double the amount of the duty, to pay and clear off the duty when ſold, if within 12 months, and if not ſold within that time, then at the end of ſuch 12 months: ſ. 10. The warehouſes are to be ſecured under the joint locks of the officer and proprietor; nor ſhall any ſalt be put into or taken out of ſuch warehouſe in leſs quantity than 50 buſhels, at one time, and after proper notice of 12 hours, and with the attendance of an officer: ſ. 11. No foreign ſalt ſhall be imported in any veſſel of leſs burden than 40 tons, except for the uſe of the ſeamen, not exceeding 5lbs. for each man, upon pain of forfeiting ſuch ſalt and veſſel, &c. ſ. 13. No ſalt ſhall be imported from Ireland, Guernſey, Jerſey, Sark, Alderney or Man, except for the uſe of ſeamen, not exceeding 2lbs. for each man, and is liable to forfeiture with the veſſels, and may be ſeized; but fiſhing veſſels, having a due quantity of ſalt, received from entered warehouſes, or other veſſels employed in fiſhing, are exempted: ſ. 14. By 45 Geo. III. c. 14. ſ. 19. no ſalt ſhall be imported from Ireland into Great Britain in any ſhip of leſs burden than 100 tons, under penalty of the forfeiture of ſalt, veſſel, &c.: and by ſ. 10 and 11, if any perſon ſhall put on board any veſſel in Ireland more than in the proportion of 2lbs. of ſalt for each perſon employed in the ſhip, without notice and bond, he ſhall forfeit all ſuch ſalt, and 100*l.* By ſ. 14. no rock-ſalt ſhall be refined, or made into white ſalt, at any place in Great Britain beyond the diſtance of ten miles from the ſalt-mine or ſalt-pit from which the rock-ſalt has been taken; except at ſuch works as have been duly entered for the purpoſe one year previous to the paſſing of this act: and places for making ſalt in England are to be entered, on pain of forfeiting 100*l.*, the ſalt, and articles uſed in making the ſame, &c. ſ. 17. By 38 Geo. III. c. 89. officers may enter and take an account at any time by day or night. Proprietors are to provide warehouſes and ſtore their rock-ſalt in them, &c. under penalty of 100*l.* ſ. 19. Proprietors are to give notice of their intention to take ſalt out of the mine, under forfeiture for every offence of 20*l.* No rock-ſalt ſhall be taken out of ſuch warehouſe, but in the preſence of an officer, no leſs than four buſhels at a time, and between the hours of five in the morning and ſeven in the evening from March 24th to the 29th of September; and between ſeven in the morning and five in the evening from 28th September to 28th March, in each year, under penalty of forfeiture of ſalt, &c. and 40*s.* for every buſhel of ſuch ſalt, or 50*l.* at the election of the attorney-general, or perſon who ſhall ſue: ſ. 21. Makers and refiners of ſalt ſhall provide ſuitable warehouſes, with proper faſtenings, which ſhall be kept locked, except when the officer attends, under forfeiture of 50*l.* ſ. 22. Such maker ſhall give ſix hours' notice in writing before he begins to charge any pan or boiler, which notice ſhall ſpecify whether he intends to make larger grained, commonly called fiſhery-ſalt, or fine-grained ſalt, under penalty of 20*l.* for each offence: ſ. 23. And he ſhall proceed without delay, on pain of 20*l.* Brine may be added once and no more: ſ. 24. But the whole operation muſt be finiſhed before freſh brine is put in, under penalty of 50*l.* ſ. 25. The ſalt taken from each pan is to be kept ſeparate, and within ten hours after it has been taken out, the maker ſhall ſpecify in writing to the proper officer the quantity made at ſuch boiling; and when the officer has taken account of it, all ſuch ſalt ſhall be removed into the maker's entered warehouſe, on pain of 20*l.* Half the ſalt of one boiling may be warehouſed before the whole is finiſhed, nor is any ſalt to be warehouſed till an account is taken, under forfeiture of 20*s.* for every pound, or 100*l.* at the option of the attorney-general, or the perſon ſuing: ſ. 30. Salt may be removed to warehouſes at Liverpool or Briſtol for the purpoſe of exportation; and bond ſhall be given, which bond ſhall be diſcharged, upon leaving with the proper officer, within three months, a certificate that ſuch ſalt was duly delivered and ſecured at ſuch warehouſe: ſ. 33. 70, 71. The ſalt removed to export warehouſes may be immediately ſhipped, without being warehouſed, and the bond be diſcharged: ſ. 72. Salt ſhall not be removed out of warehouſes, except at ſtipulated times, under penalty of forfeiting the ſame, carriages, horſes, &c. and 100*l.* for every ſuch offence: ſ. 34. Salt ſhall not be removed without a permit, under the penalty of forfeiting as before, and 40*s.* for every pound, or 100*l.* at the pleaſure of the attorney-general, or perſon who ſhall ſue: ſ. 35. Perſons removing ſalt without a permit ſhall on conviction forfeit 50*l.* or be committed to the houſe of correction for any time not exceeding 12 months: ſ. 36. Warehouſes are to be approved by the officer, and repaired or altered according to his directions; and if ſuch warehouſes be opened or entered by any perſon but in the preſence of the officer, he ſhall for every offence forfeit 20*l.* ſ. 37, 38. And if any lock or faſtening provided by the officer at the expence of the proprietor be removed or broken, the delinquent ſhall forfeit for every ſuch offence 100*l.* ſ. 39. And it ſhall be repaired by the proprietor within a reaſonable time, on pain of forfeiting 20*l.* ſ. 40. Notice is to be given when it is propoſed to take ſalt out of the warehouſes, and the officer is to attend. The proprietor ſhall be diſcharged from payment of duty for rock-ſalt taken out for refining, for exportation, or for curing of fiſh: ſ. 41. Rock-ſalt may be made into white ſalt at the appointed place, and no other, under forfeiture of 200*l.* ſ. 15 and 16. (45 Geo. III. c. 14. ſ. 14.) Permits ſhall be granted upon application by a note in writing: ſ. 43. The permit ſhall be returned after the time limited on demand, on pain of forfeiting 50*l.* for every offence; and giving falſe permits incurs a penalty of 500*l.* for every ſuch offence: ſ. 104. ſ. 132. Duties ſhall be cleared off within a week after entry, or bond be given in double value: ſ. 45, 46. Removing rock-ſalt without a permit incurs a forfeiture of the ſame, and carriages, cattle, &c. and perſons concerned in ſo doing incur a penalty of 500*l.* ſ. 48. Scales and weights are to be provided by the proprietor, and his ſervants are required to aſſiſt, on forfeiture of 100*l.* ſ. 50, 51. He that conceals ſalt to evade the duty forfeits the ſalt and 50*l.* ſ. 52. Officers may ſeize ſalt found in veſſels and carriages ſuſpected of being clandeſtinely removed, and perſons offending ſhall forfeit the ſalt and carriages, &c. and 40*s.* for every pound weight: ſ. 54. The proof of payment of duty lies on the owner, and not on the officer who ſeized the ſame: ſ. 56. Previous notice is to be given of ſhipping ſalt for exportation, and bond ſhall be given in treble the value for payment of the duty, for the due exportation, and that it ſhall not be relanded in Great Britain. Salt for curing fiſh may be imported, and muſt be duly entered: ſ. 12. Before ſuch ſalt is delivered duty free, bond in double the amount of the duty ſhall be given that ſuch ſalt ſhall be delivered to the fiſh curer, &c. The rates at which ſalt for curing fiſh ſhall be allowed are as follow:

For every hundred weight of cod, ling, or hake, 50 pounds of ſalt.

For every barrel containing 32 gallons of wet cod, ling, or hake, 56 pounds of ſalt.

For ditto 42 gallons of ſalmon, 36 pounds of ſalt.

For ditto 32 gallons of white herrings, 140 pounds of ſalt.

For every barrel containing 32 gallons of red herrings, 65 pounds of ſalt.

For ditto 32 gallons of clean ſhotten red herrings, 56 pounds of ſalt.

For every laſt conſiſting of 1000 dried red ſprats, 25 pounds of ſalt.

For every caſk containing 50 gallons of pilchards or ſcads, 336 pounds of ſalt. 42 Geo. III. c. 93. ſ. 20.

For 32 gallons of mackarel, 84 pounds of ſalt.

And ſo in proportion for any greater or leſs quantity.

No ſalt ſhall be uſed in curing pilchards or ſcads more than twice; and in taking account of ſalt only once ſo uſed, credit ſhall be given to every fiſh curer for ſuch ſalt, as containing of pure ſalt in the proportion of three parts in four of the whole quantity and no more; and every officer of exciſe ſhall make his computation according to ſuch proportion. 42 Geo. III. c. 93. ſ. 21.

And every barrel, caſk, or veſſel, in which fiſh, beef, or pork, entitled to any bounty ſhall be packed, ſhall be gauged according to the gallon Engliſh wine meaſure. 38 Geo. III. c. 89. ſ. 5.

All ſalt imported from Scotland without a legal permit teſtifying that all the duties payable in Scotland have been paid ſhall be forfeited, together with the packages, ſhips, boats, and other veſſels, waggons, carts, and other carriages, horſes and cattle employed in removing the ſame, which may be ſeized by any ſuch officer; and the perſon in whoſe cuſtody ſuch ſalt ſhall be found, or employed in removing the ſame, ſhall forfeit 50*l.* ſ. 86.

No ſalt ſhall be removed from Scotland to England by land, on pain of forfeiting the ſame, together with the packages, waggons, carts, carriages, horſes and cattle employed in removing thereof, which may be ſeized by any ſuch officer; and every perſon concerned in removing the ſame, contrary to the directions of this act, ſhall forfeit 40*s.* for every pound weight thereof, or 100*l.* at the election of the attorney-general, or perſon who ſhall ſue. ſ. 87.

By 49 Geo. III. c. 81. ſalted beef, pork, or bacon, brought by land from Scotland to England, ſhall immediately on the arrival thereof in England, be entered at the neareſt exciſe-office in England; on pain of forfeiting the ſame.

Every maker of glaſs may take rock-ſalt from any warehouſe belonging to any ſalt-mine, or brine or ſea-water for making mineral alkali, or flux for glaſs, upon bond being given that the ſame ſhall be ſo employed; ſuch bond to be diſcharged upon oath being made before the collector that all ſuch rock-ſalt, brine, or ſea-water, for which the ſame was given, was made uſe of in making ſuch mineral alkali or flux for glaſs, and for no other purpoſe whatſoever. ſ. 116.

Every perſon before he begins to make mineral alkali or flux for glaſs, ſhall make entry in writing of every work-houſe, warehouſe, ſtorehouſe, room, or other place, and alſo of every utenſil or veſſel by him intended to be uſed therein, at the exciſe-office of the diſtrict. And if any ſuch perſon ſhall begin to make any mineral alkali or flux for glaſs, without making ſuch entry, he ſhall forfeit 100*l.* together with the ſame, and all materials proper for making the ſame, together with the utenſils and veſſels uſed therein, found in any unentered place. ſ. 117.

No ſuch rock-ſalt ſhall be delivered out of ſuch entered warehouſe, for the purpoſe of making mineral alkali or flux for glaſs, or ſhall be afterwards delivered at ſuch alkali works, or be depoſited in any warehouſe or place belonging thereto, but in the preſence of an officer, who ſhall make an entry in writing, containing the weight or quantity thereof, and the day when ſo delivered, and the name of the maker of glaſs to whom delivered, and for the uſe of what works. ſ. 119.

In caſe the rock-ſalt ſo brought to be ſtored in any ſuch alkali works, ſhall be leſs in weight or quantity than ſpecified in the permit, the maker for whoſe uſe the ſame was delivered ſhall be anſwerable for the ſame. ſ. 120.

If any ſuch maker, on whoſe account ſuch rock-ſalt ſhall have been delivered as aforeſaid, or if any other perſon ſhall uſe the ſame or any part thereof, or any acid materials to be produced therefrom, after being uſed in making ſuch mineral alkali or flux for glaſs as aforeſaid for any other purpoſe, he ſhall forfeit 100*l.* ſ. 121.

Any officer of exciſe may enter any ſuch work-houſe or place made uſe of by any ſuch manufacturer of mineral alkali or flux for glaſs, and if ſuch manufacturer ſhall upon demand in the day time (and if in the night, in the preſence of a conſtable or other peace officer) refuſe to permit ſuch officer to enter, he ſhall forfeit 50*l.* ſ. 122.

Provided always, that nothing herein ſhall extend to impoſe any duty on ſuch Glauber ſalts as ſhall be made by any glaſs-maker in any of the proceſſes of making mineral alkali or flux for glaſs, and which ſhall be *bonâ fide* expended and conſumed in making ſuch mineral alkali or flux for glaſs: ſ. 123. See however 47 Geo. III. ſeſſ. 2. c. 30. ſ. 2.

And whereas ſalt is an eſſential ingredient in making oxygenated muriatic acid uſed for bleaching linen and cotton, and allowing a drawback on ſalt uſed for that purpoſe would promote the manufacture thereof, it is enacted that the whole duties now payable on ſalt of Britiſh manufacture ſhall be drawn back for all ſalt conſumed in making any ſuch oxygenated muriatic acid as aforeſaid. Provided, that no ſuch drawback ſhall be granted for more or other ſalt than ſhall be mixed with vitriolic acid, manganeſe, and water, in the preſence of an officer, and in the proportion of at leaſt 20 pounds of vitriolic acid, 20 pounds of manganeſe, and 10 pounds of water to every 56 pounds of ſalt. Nor ſhall any ſuch drawback be granted to any perſon not being a bleacher of linen or cotton, nor unleſs he make entry in writing of every work-houſe or place intended to be uſed in making ſuch oxygenated muriatic acid as aforeſaid at the next exciſe-office. Provided alſo, that any officer of exciſe may at all times, by day or night, upon requeſt enter into any ſuch work-houſe or other place uſed by ſuch bleacher, and by weighing, gauging, or otherwiſe, take an account of all ſalt therein, and of the ſtate of operation of ſuch oxygenated muriatic acid. ſ. 89.

By 47 Geo. III. ſeſſ. 2. c. 30. ſ. 1. divers allowances are further made on ſalt uſed by bleachers in making ſuch acid.

In all caſes where it ſhall be neceſſary to aſcertain the value of ſalt, the ſame ſhall be taken at the higheſt price at which the ſame ſhall ſell for in London. ſ. 129.

If any perſon ſhall counterfeit or forge, or cauſe to be done, any certificate or debenture, with intent to defraud his majeſty, he ſhall be guilty of felony, and be tranſported for ſeven years. ſ. 131.

If any perſon ſhall obſtruct any officer in the due execution of his office, or ſhall by force reſcue, or attempt to reſcue, any ſalt, veſſel, boat, horſe, cattle, cart, or carriage, he ſhall for every ſuch offence, for which no penalty is particularly provided by this act, forfeit 200*l.* ſ. 133.

If any perſon ſhall offer or give any bribe to any ſuch officer, in order to corrupt him in the execution of his office, or to connive at or conceal any fraud relating to the duties on ſalt, whether ſuch propoſal be accepted or not, he ſhall forfeit 500*l.* ſ. 134.

And all fines, penalties, and forfeitures hereby impoſed relating to the duties on ſalt, may be ſued for, recovered, levied, and mitigated as by the laws of exciſe, or in the courts of Weſtminſter, and ſhall be applied half to the king (except where otherwiſe expreſſed), and the other half to him who ſhall ſue. ſ. 136.

Provided, that nothing in this act contained ſhall extend to repeal or alter any act in force relating to the duties on ſalt, immediately before the paſſing of this act, except ſo far as the ſame is revoked or altered or repugnant thereto, but all the proviſions, regulations, penalties, and forfeitures thereby impoſed (except as aforeſaid) ſhall remain in full force. ſ. 140.

And all powers of 12 Car. II. c. 24. ſhall extend to this act. ſ. 142.

And the lord mayor and aldermen of London, and the juſtices of the peace, at their reſpective general ſeſſions, may ſet, aſcertain, and publiſh the price of ſalt to be ſold or expoſed to ſale (and not intended for exportation) within their reſpective counties, cities, and places, and may alter the ſame as they may ſee occaſion; and the prices ſo ſet or altered are to be obſerved by every perſon ſelling or expoſing ſalt for ſale. And if any perſon ſhall ſell any ſalt (except for exportation) at any higher price, or refuſe to ſell it at the price ſo fixed as aforeſaid, he ſhall forfeit 20*l.* to be levied by diſtreſs, by warrant of one juſtice; and in default of ſufficient diſtreſs, ſuch juſtice may impriſon ſuch offender until he ſhall pay the ſame, to be applied half to the king, and half to him who ſhall ſue. ſ. 143. Burn's Juſtice, art. *Exciſe.*

There is a cuſtom duty in the city of London, called "granage," payable to the lord mayor, &c. for ſalt brought to the port of London, being the twentieth part.

SALT, *as manure, and for the uſe of animals,* in *Agriculture,* is a ſubſtance which has been ſaid to be found uſeful, when applied in this way to land, and as food or condiment in the ſupport or fattening of domeſtic animals. In the former of theſe applications, there has been much difference of opinion in reſpect to its effects; ſome contending that it is highly beneficial; while others think that it is of little, if any, advantage. There are likewiſe others who have ſuppoſed it to be uſeful, when laid on land in ſmall proportions, while in large ones it has an injurious effect; having, in the former caſe, a tendency to promote putrefaction; while, in the latter, it may retard it by its antiſeptic property, as well as be capable of acting in other ways, in both caſes. It has alſo been ſuppoſed to produce much benefit by the power which it poſſeſſes of deſtroying ſnails, grubs, and other ſimilar animals that may be in the ground. It is obſerved by Dr. Darwin, that as it is a ſtimulus which poſſeſſes no nouriſhment, but may excite the vegetable abſorbent veſſels into greater action than uſual, it may, in a certain quantity, increaſe their growth, by their taking up more nouriſhment in a given time, and performing their circulations and ſecretions with greater energy. In a greater quantity, its ſtimulus may be ſo great as to act as an immediate poiſon on vegetables, and deſtroy the motions of the veſſels, by exhauſting their irritability. And it has been remarked by the Rev. Mr. Cartwright, in an able paper in the fourth volume of the Communications to the Board of Agriculture, that at preſent the uſe of ſalt, as a manure, is a ſubject on which the public opinion is much divided: its advocates, reaſoning from the ſtriking effects of ſalt-water on the marſhes, which are occaſionally irrigated by the ſea at ſpring-tides, conclude that the fertilizing virtue of ſuch irrigation is owing to its ſaline quality, without taking into conſideration the quantity of animal and vegetable matter, which ſea-water (particularly near the coaſt, and where rivers diſembogue themſelves) muſt neceſſarily hold in ſolution. But that thoſe who maintain a contrary opinion, conſidering ſalt merely as an antiſeptic, ſatisfy themſelves that it is impoſſible that any thing can be friendly to vegetation which retards putrefaction, a proceſs indiſpenſable in ſubſtances that are to be the food of plants. To get over this difficulty, it has been conjectured, nay, there have not been wanting thoſe (and of great name too) who have even attempted to prove, that ſalt in ſmall quantities accelerates, as in large quantities it is known to reſiſt, putrefaction; a doctrine to which, however, he ſhall not willingly yield his aſſent, till he can be perſuaded that effects are not, in all caſes, proportionate to their cauſes. The operation of every cauſe is, and muſt, he contends, be uniform; and when, to appearance, it is not ſo, ſome other cauſe obtrudes itſelf, too ſubtile for our obſervation, which operating at the ſame time with the primary cauſe, joins in giving a reſult, which not being able to account for, we conſider as anomalous. He thinks, that theoriſts ſhould be at variance with each other is not to be wondered at; for having the wide field of imagination and conjecture before them to expatiate in, it is reaſonable to conclude, indeed it is unavoidable, that ſome of them muſt loſe their way. But what ſhall we ſay to the diſagreement and inconſiſtency which prevail on the ſubject amongſt practical farmers? Nothing, indeed, can be more contradictory than the different reports that have been made on the effects of ſalt, as a manure, by thoſe who have even brought it to the teſt of actual experiment. As there is no reaſon to queſtion the veracity of the reporters, we muſt look for the grounds of their diſagreement in ſome predominating circumſtance or other, which at the time eſcaped their obſervation. Indeed, the ſucceſs or failure of an agricultural experiment depends ſo frequently on cauſes, which can neither be controlled nor foreſeen, and ſo foreign from thoſe which were expected to operate, that it is not to be wondered at if the repetition of the very ſame experiment gives oftentimes a different reſult to the inquirer. But as it is not the buſineſs of this paper to ſupport a theory, but to detail what has been practiſed; not to contend for an opinion, but to ſtate facts; the few obſervations which may be hazarded, will be ſuch only as are required merely in explanation of occurrences, as they ariſe. He ſhall endeavour to give, therefore, as ſimple a relation as poſſible of the experiments he has tried, to aſcertain the advantages or diſadvantages which may attend the uſe of ſalt as a manure, and alſo when mixed with the food of animals, and employed in that way.

In regard to the firſt of theſe objects, it is ſtated that the ſoil on which his trials were made was a ferruginous ſand, brought to a due texture and conſiſtence by a liberal covering of pond-mud. Of this ſoil, in its improved ſtate, he means by the acceſſion of pond-mud, (for having been uſed merely as a nurſery for raiſing foreſt-trees previous to theſe experiments, the nurſery-man had not thought it neceſſary to make uſe of any other manure), the ſubſequent analyſis is given:

	Grains.
About 400 grains gave of ſiliceous ſand, of different degrees of fineneſs, about - - -	280
Of finely divided matter, which appeared in the form of clay - - - - - - -	104
Loſs in water - - - - - - -	16
	400
The 104 grains of finely divided matter contained of carbonate of lime - - - - -	18
Of oxyd of iron - - - - - - -	7
Loſs by incineration (moſt probably from vegetable decompoſing matter) - - - -	17

The remainder principally ſilex and alumine.

And it is added, that there were no indications of either gypſum or phoſphate of lime. And that from this analyſis it will appear, he thinks, that theſe experiments could not, perhaps, have been tried on a ſoil better adapted to give impartial reſults; for of its component parts, there is no ingredient (the oxyd of iron poſſibly excepted) of ſufficient activity to augment or reſtrain the peculiar energies of the ſubſtances employed in the buſineſs, It is ſtated farther, that on the 14th of April 1804, a certain portion of this ſoil was laid out in beds, one yard wide, and forty long. Of theſe, twenty-five were manured (the firſt excepted) in the following manner:

N° 1. No manure.
2. Salt, a quarter of a peck.
3. Lime, one buſhel.
4. Soot, one peck.
5. Wood-aſhes, two pecks.
6. Saw-duſt, three buſhels.
7. Malt-duſt, two pecks.
8. Peat, three buſhels.
9. Decayed leaves, three buſhels.
10. Freſh dung, three buſhels.
11. Chandlers' graves, nine pounds.
12. Salt, lime.
13. Salt, lime, ſulphuric acid.
14. Salt, lime, peat.
15. Salt, lime, dung.
16. Salt, lime, gypſum, peat.
17. Salt, ſoot.
18. Salt, wood-aſhes.
19. Salt, ſaw-duſt.
20. Salt, malt-duſt.
21. Salt, peat.
22. Salt, peat, bone-duſt.
23. Salt, decayed leaves.
24. Salt, peat-aſhes.
25. Salt, chandlers' graves.

N.B. The quantities of each ingredient the ſame as when uſed ſingly.

And that on the ſame day the whole was planted with potatoes, a ſingle row in each bed; and that the general experiment might be conducted with all poſſible accuracy, each bed received the ſame number of ſets. That on the 14th of May, (a few days after the plants appeared above ground,) the whole was carefully examined, and the comparative excellence of each row (as far, at leaſt, as could be judged of by appearances) was as carefully regiſtered. The beſt row was decidedly N° 7, malt-duſt; after which they followed in order, as below.

N° 11. Chandlers' graves.
16. Salt, lime, gypſum, peat.
25. Salt, graves.
20. Salt, malt-duſt.
9. Decayed leaves.
4. Soot.
2. Salt.
1. No manure.
5. Wood-aſhes.
8. Peat.
13. Salt, lime, ſulphuric acid.
14. Salt, lime, peat.
17. Salt, ſoot.
18. Salt, wood-aſhes.
21. Salt, peat.
22. Salt, peat, bone-duſt.
23. Salt, decayed leaves.
3. Lime.
6. Saw-duſt.
10. Freſh dung.
12. Salt, lime.
15. Salt, lime, dung.
24. Salt, peat-aſhes.
19. Salt, ſaw-duſt.

Further, that on the 28th of May, fourteen days afterwards, the apparent vigour of the plants was in the following order:

N° 7. Malt-duſt.
11. Chandlers' graves.
4. Soot.
8. Peat.
16. Salt, lime, gypſum, peat.
17. Salt, ſoot.
20. Salt, malt-duſt.
21. Salt, peat.
23. Salt, decayed leaves.
25. Salt, graves.
1. No manure.
2. Salt.
5. Wood-aſhes.
9. Decayed leaves.
13. Salt, lime, ſulphuric acid.
14. Salt, lime, peat.
18. Salt, wood-aſhes.
24. Salt, peat-aſhes.
10. Freſh dung.
3. Lime.
22. Salt, peat, bone-duſt.
19. Salt, ſaw-duſt.
15. Salt, lime, dung.
12. Salt, lime.
6. Saw-duſt.

And that on the 21ſt of September, the potatoes were taken up, when the produce of each row was in ſucceſſion, as follows:

N° 17.	Salt and ſoot	produced	240
11.	Chandlers' graves		220
18.	Salt, wood-aſhes		217
16.	Salt, gypſum, peat, lime		201
15.	Salt, lime, dung		199
2.	Salt		198
25.	Salt, graves		195
4.	Soot		192
10.	Freſh dung		192
20.	Salt, malt-duſt		189
5.	Wood-aſhes		187
23.	Salt, decayed leaves		187
24.	Salt, peat-aſhes		185
7.	Malt-duſt		184
14.	Salt, lime, peat		183
19.	Salt, ſaw-duſt		180
22.	Salt, peat, bone-duſt		178
9.	Decayed leaves		175
13.	Salt, lime, ſulphuric acid		175
21.	Salt, peat		171
12.	Salt, lime		167
8.	Peat		159
1.	No manure		157
6.	Saw-duſt		155
3.	Lime		150

It is here ſtated as ſingular, that of ten different manures, moſt of which are of known and acknowledged efficacy, ſalt, a manure hitherto of ambiguous character, is ſuperior to them all, one only excepted! and that when uſed in combination with other ſubſtances, it is only unſucceſsfully applied in union with that one, namely, chandlers' graves, no other manure ſeemingly being injured by it. Poſſibly its deteriorating effects on chandlers' graves may be owing to its antiſeptic property, which reſiſts the putrefactive proceſs, by which animal ſubſtances undergo the changes neceſſary to qualify them to become the food of plants. This, however, he cannot, from any appearance in the ſoil, when the plants were taken up, aſſert to have been the caſe. And the extraordinary effects of ſalt, when combined with ſoot, are, he obſerves, ſtrikingly ſingular. There is no reaſon to ſuppoſe theſe effects were produced by any known chemical agency of ſoot or ſalt on each other. Were he to gueſs at the producing cauſe, he ſhould conjecture it to be that property of ſaline ſubſtances, by which they attract moiſture from the atmoſphere: for he obſerved thoſe beds, where ſalt had been uſed, were viſibly and palpably moiſter than the reſt, even for weeks after the ſalt had been applied; and this appearance continued till rain fell, when, of courſe, the diſtinction ceaſed. This property of attracting moiſture had greater influence, poſſibly, on the ſoot than on any of the other manures; as ſoot, from its acrid and dry nature, may, he thinks, be ſuppoſed to require a greater proportion of water to dilute it than thoſe ſubſtances which contain water already. It may be proper to obſerve, that on thoſe beds where ſalt had been uſed, the plants were obviouſly of a paler green than on the reſt, though not leſs luxuriant; a circumſtance which he thought worth noticing, and which he conſidered, though erroneouſly, (as appeared by the event,) to indicate a want of vigour, which would be felt in the crop. It was obſervable alſo, that where ſalt was applied, whether by itſelf or in combination, the roots were free from that ſcabbineſs which oftentimes infects potatoes, and from which none of the other beds (and there were in the field nearly forty more than what made part of theſe experiments) were altogether exempt. This circumſtance deſerves the notice of the practical farmer. And it is further noticed by the ſame writer, that two ſets of experiments, and with the ſame proportions of manures, were tried with turnips and buck-wheat, on a ſoil the pooreſt he could meet with, which produced only a dwarf heath and lichen, and which he had pared off. The poverty of this ſoil will appear by the following analyſis:

	Grains.
400 grains gave of ſiliceous ſand - - -	320
Of finely divided matter, which appeared as brown mould - - - - - - - -	68
Loſs in water - - - - - - - -	12
	400

And that the finely divided matter loſt by incineration nearly half its weight, which ſhews it contained a great deal of vegetable matter. The reſiduum, principally a mixture of aluminous and ſiliceous earths, coloured red by oxyd of iron, and containing very little calcareous matter. There were no indications of either gypſum or phoſphate of lime in it.

On July 6, 1804, the pieces ſet apart for each ſet of experiments were reſpectively ſown with turnips and buck-wheat. On the 26th, Nos. 1, 2, 4, 5, 6, 7, 19, 20, 21, 22, 24, 25, ſhewed little or no marks of vegetation. Thoſe that remained were merely in the ſeed leaf. And that on the 16th of Auguſt, four only were alive and in rough leaf, namely,

No. 12. Salt and lime.
13. Salt, lime, and ſulphuric acid.
14. Salt, lime, peat.
16. Salt, lime, gypſum, peat.

And it is added, that theſe four maintained a ſickly exiſtence till the middle of September, ſhortly after which they all diſappeared. And it is remarked, that the appearances of the turnips and buck-wheat were ſo nearly uniform, that he has not thought it neceſſary to notice the trifling variations between them, which could not have been done without entering into a minute detail, equally tedious and unintereſting to the inquirer. It is, however, ſuggeſted, that though no deciſive concluſion can be drawn from theſe two ſets of experiments reſpecting the advantages or diſadvantages of ſalt as a manure, on ſuch a ſoil as he has deſcribed, becauſe other manures of acknowledged efficacy ſhared the ſame fate with the ſalt, yet this inference may, he thinks, be drawn from them, (and that not an unimportant one,) namely, that a due texture and conſiſtence in the ſoil is as neceſſary to the exiſtence and health of vegetables as the pabulum they are ſuſtained by; and this appears evidently by the ſuperiority (ſuch as it was) of thoſe plants where the manure contributed, in any degree, to improve that texture and conſiſtence. This is, he contends, fully ſhewn by an adjoining field, which within theſe few years was in a great part in a ſtate of uncultivated nature, equally barren as the ſpot he has been ſpeaking of; it is, however, now brought into cultivation, and into a decent ſtate of fertility, chiefly from its texture having been improved by a thick coating of marley clay.

But theſe facts and experiments ſhew the effects of ſalt in a more favourable light as a manure, than it has been hitherto generally conſidered in; and the intelligent writer ſuggeſts, that if its beneficial properties were more perfectly demonſtrated, the attention of the legiſlature would deviſe ſome meaſure, without prejudice to the revenue, by which it might be employed for the purpoſes of huſbandry.

There are, in a communication from Davies Giddy, eſq. preſident of the Penzance Agricultural Society, inſerted in the twenty-ſeventh volume of the Annals of Agriculture, ſome intereſting experiments on the uſe of ſea-ſalt in the culture of turnips detailed. They are enabled to make uſe of this ſubſtance as a manure, from the extenſive pilchard-fiſhery eſtabliſhed on the coaſt. Salt is frequently imported for curing fiſh at 9*d.* or 9½*d.* the buſhel of eighty-four pounds, and what remains after it has been once, or ſometimes twice uſed in preſerving the pilchards, is uſually ſold at about the ſame price to the neighbouring farms. Though ſome animal oil is united to the ſalt, that which has been the leaſt uſed is univerſally preferred, and found the moſt effectual. It is ſuppoſed perhaps difficult to determine whether the whole efficacy of the ſalt in producing plentiful, and, as it would ſeem, certain crops of turnips, can be imputed to its virtues as a manure, or whether part of the effect may not be owing to the deſtruction of ſlugs.

The Report is thus ſtated by the Rev. John Allen, and Mr. Sickler, two members of the ſociety: at Michaelmas 1790, Mr. Sickler entered on an eſtate ſo much impoveriſhed by the former tenant, as ſcarcely to return the ſeed.

In the ſpring of 1791, Mr. Sickler prepared two acres for turnips, which had borne ſeven crops of oats in ſucceſſion. The laſt crop did not produce nine buſhels on an acre.

In the firſt week of April the earth from the ditches was carried into the field, and laid in four piles; each received three cart-loads of ſea-ſhell ſand, and five buſhels of ſalt. The earth from another ditch, chiefly conſiſting of the decayed ſoil, which had been taken off the ground in former tillage, was placed in three more piles, and each of theſe received alſo three cart-loads of ſand, but no ſalt, on account of the apparent richneſs of the earth. Half the field was manured with the four firſt piles, but the three laſt not being ſufficient for the other half, what remained was ſown with ſalt, at the rate of ten buſhels to an acre.

The part of the field where ſalt had been uſed, either mixed with earth, or alone, produced about half a crop of turnips, but the crop totally failed where there was no ſalt.

In the ſpring following, white oats were ſown, and produced a crop of forty-five buſhels to an acre.

In 1792, three acres, which in 1791 had borne a crop of wheat, not exceeding twelve buſhels on an acre, were ploughed before Chriſtmas, and brought into fine tilth by Midſummer following. On each acre were ſown twenty buſhels of ſalt, excepting that two ridges towards the middle of the field were purpoſely left without any manure; on theſe two ridges the turnips totally failed, but the remainder of the field produced a plentiful crop.

In 1793, four acres of land, completely worn out by ſucceſſive tillage, were ploughed before Chriſtmas; three acres were ſown with ſalt, at the rate of twenty-five buſhels, and the remaining acre with eighteen buſhels, without any other manure: the crop was in general a good one, but viſibly beſt where the greateſt quantity of ſalt had been uſed. Crops of turnips have been raiſed with equal ſucceſs by the uſe of ſalt, ſince that time, and in the ſevere winter of 1794—5, it was obſerved that theſe turnips were much leſs injured by the froſt than others ſimilarly treated, and cultivated in the common way. When ſalt is uſed in the quantity of twenty or twenty-five buſhels to an acre, the turnips ſhould not be ſown till at leaſt three weeks after the ſalt. Clover ſown with barley after turnips raiſed by the uſe of ſalt, has never failed to produce an abundant crop of hay the year following. It is ſuggeſted in the Report, that if the obſervation can be depended on of turnips being leſs injured by froſt when they are manured with ſalt, than when they are cultivated in the uſual manner, it muſt indicate an extraordinary degree of health and vigour in the plant; but a ſingle obſervation is obviouſly inſufficient to eſtabliſh ſuch a fact. It is alſo ſuggeſted by Mr. Jay, after obſerving that the nature of the ſoil, and perhaps the ſeaſon ſhould be regarded, as that may poſſibly account for certain proportions of ſalt ſucceeding much better in ſome inſtances than in others;—that a gentleman in New England, in America, has publiſhed ſome facts, from which it appears that the ſubject merits attention.

It is noticed, that in June 1786, he ſalted one bed of his onions, one bed of his carrots, and one bed of his early turnips: laying the ſalt under the ſurface, in the centre of the intervals between the rows, at ſome diſtance from the roots, that the ſalt might have time to be diſſolved and altered before the fibrous roots ſhould reach it. The carrots of the ſalted bed evidently grew much larger and better than the reſt, but he could not perceive that the ſalt was at all beneficial to the onions or to the turnips. And further, that according to Mr. Ford's experiments in ſalting flax ground, ſalt ſeems to be highly beneficial to that crop. He ſpreads the ſalt at the time of ſowing the ſeed, and thinks that the quantity ſhould be *double* to that of the ſeed: from three acres of flax ſalted he had fifty buſhels of ſeed, and an excellent crop of flax. Mr. Elliot tells us of *five* buſhels of ſalt being applied to one acre of flax, which is a much larger proportion, and that it had an extraordinary effect: and alſo of a crop of wheat increaſed by ſalt.

But the trials of Mr. Fenna in Cheſhire, with this ſubſtance as a manure in various modes of application, do not however appear to have been ſo ſucceſsful, though they ſeem to have been made with much care and attention.

On Fallow.—July 1, 1797. Experiments on a fallow for wheat being once ploughed, and that before Chriſtmas laſt, full of graſs and weeds, owing to the continual wet weather.

	A.	R.	P.		lbs.		Buſh.	lbs.	
3 butts	0	2	4	ſown with	85½	of ſalt, that is,	2	50	*per* acre.
2 ditto adjoining	0	1	26	unſown.					
3 next ditto	0	2	35	ſown with	89	ditto,	2	11	
2 — ditto	0	1	35	unſown.					
3 — ditto	0	2	5	ſown with	130	ditto,	4	20	
2 — ditto	0	1	13	unſown.					
3 — ditto	0	3	74	ſown with	193	ditto,	7	25	
3 — ditto	0	1	7	unſown.					
3 — ditto	0	1	34	ſown with	175	ditto,	6	42	
3 — ditto	0	1	17	unſown.					
3 — ditto	0	1	13	ſown with	195	ditto,	10	25	

Obſervations.—July 12, 1797. Some few of the weeds have periſhed, but no other evident alteration, compared with thoſe unſown, and none at all upon thoſe ſown with ſmall quantities. Ploughed under between the 7th and 14th of July, the weather being rather drying, but ſtill ſhowery.

July 12. Salt ſown on the ſame fallow being twice ploughed, the weather drying.

	A.	R.	P.		lbs.		Buſh.	lbs.	
1 butt	0	0	22	ſown with	76½	of ſalt, that is,	9	49	*per* acre.
1 ditto	0	0	18	ſown with	78¼	ditto,	12	21	
1 ditto	0	0	33	ſown with	109	ditto,	9	34	

Additional Obſervations.—It is ſtated that ſome few ſnails periſhed by the application the day following. No other perceptible alteration has yet taken place.—Auguſt 28; has been harrowed and ploughed a third time. It is ſuggeſted, that a man ſowing from a ſeed-hopper, common ſtride and full hand, twice over the ſame ground, will ſow from ten to twelve buſhels *per* acre.

Oct. 1, 1797. Sowed another butt in the ſame fallow with ſalt, immediately before its being ſown with wheat, and ploughed in therewith, being after the rate of ten buſhels *per* acre. No viſible advantage has been ſeen in any of the above, through the winter, or at ſpring, nor any perceptible advantage as the crop advanced to maturity; neither could the reapers, nor any other viewers, diſtinguiſh the leaſt appearance in favour of ſalt compared with the butts unſalted.

On Paſtures.—June 30. Sowed 0 *a.* 0 *r.* 17 *p.* of paſture with 4 lbs. 4 oz. of ſalt (being rye-graſs and clover of the ſecond year's growth, ſoil pretty good upon marle).

Sowed 0 *a.* 0 *r.* 13 *p.* with ſalt (2 lbs. 12 oz.) being paſture of ſeveral years' growth, full of wild or natural clover; ſoil deeper and warmer than the former.

July 1. Sowed 0 *a.* 0 *r.* 35 *p.* with 17¼lbs. of ſalt, being paſture of the third year's growth; ſoil open, upon ſand productive of fern.

December 1, 1797. Sowed part of a butt with ſalt, after the rate of 15 buſhels *per* acre.

December 1. Sowed 8 lbs. of ſalt on part of a rough meadow, having nearly its whole ſummer's growth of ſour graſs, which the cattle would not eat, and has been uſually burnt off at ſpring.

Obſervations.—July 12. No evident alteration compared with the adjoining land. Auguſt 28, continues unaltered.

In ſpring 1798, not forwarder, nor any wiſe preferable to the adjoining butts of ground which were not ſalted.

Some thiſtles and ſome little of the fern damaged, but not deſtroyed. The rough or ſour graſs being in a withered or dead ſtate, though ſown with fine ſalt when dewy, was not affected thereby, neither did the cattle prefer it to the other not ſalted.

On Mowing.—July 17. Sowed 39½lbs. of ſalt upon 0 *a.* 0 *r.* 14 *p.* a cold peaty meadow (herbage indifferent, intermixed with ruſhes) immediately after the hay being carried off, the weather dry. N.B. Eight buſhels *per* acre.

Obſervations.—July 25. The weather broke, and much rain has ſince followed, but no viſible alteration has yet taken place.—Auguſt 27. This is not a ſufficient quantity to deſtroy the herbage, nor has any advantage yet appeared. Neither has the ſpring nor the crop of hay-graſs ſhewn any thing preferable to the unſalted parts adjoining.

On Hay.—Auguſt 13. Scattered 3lbs. of ſalt in a ton of new hay at the time of houſing, being a little weathered. This hay appeared leſs mouldy, and on that account was better than the ſame unſalted, but would not compare with the like hay which had not been weathered, and not ſalted.

On Weeds and Brambles.—June 30, 1797. Applied 4 oz. of ſalt to 4 oz. of weed-wiſs (in Gerrard's Hiſtory of Plants called *geniſtella tinctoris*, dyer's weed, or baſtard broom), tufts, or roots, occupying a ſpace twelve inches in diameter, in equal quantities. The ground being wet with almoſt continual rains for a month paſt.

Obſervations.—July 1. Began to droop.—July 12. Dead.—Auguſt 28. Three of them are rotted away, and their place growing over with graſs; the other has its woody ſubſtance yet ſtanding, though dead. Theſe ſprang up from the old roots this ſpring, 1798, and have continued in the ſame flouriſhing ſtate as they were before the application of ſalt, July 1797.

July 1, 1797. Applied 7lbs. of ſalt to a number of the hard kind of ruſh-tufts, or bogs in the paſture.

Obſervations.—The cows found it the next day, and collected as much as they could, together with every blade of graſs growing amongſt the ruſhes. Some few of the ruſhes were bit off in conſequence of their ſearch; the remainder did not die; nor ſuffer any apparent damage from the application, Auguſt 28. It has been found, by ſubſequent trials, that the cows take this, in the act of licking the grains of ſalt with their tongues, and that where the grains have been diſſolved, the herbage is not preferable, on account of its having been ſalted.

July 12, 1797. Ten pounds, uſed upon a poor furze, or gorſey bank, chiefly clay ſoil, being then almoſt totally overgrown about twelve or ſixteen inches high; in quantity about eighty ſquare yards; the weather dry.

Obſervations.—The cows found this, and ſtole all that they could get at, together with any decent herbage with which it was intermixed. Some little of the gorſe has periſhed, but it is far from being deſtroyed.

Auguſt 28. The whole recovered at the return of ſpring (1798), and ſo continues.

July 12, 1797. Uſed ſeveral pounds of ſalt upon a number of weed-wiſs, or baſtard-broom, tufts, or roots (the four ſalted the 30th ult. being dead); the weather dry.

Obſervations.—July 27. They are in part deſtroyed. The cows found this, and collected as much as they poſſibly could, without eating the weed, which is very bitter. It is alſo obſerved, that theſe retained their verdure much longer than thoſe ſalted in wet weather.—Auguſt 28, and not yet deſtroyed, but much hurt. Theſe, like the former, recovered in the ſpring of 1798, and ſo continue (July 1798).

July 12, 1797. Uſed 10lbs. of ſalt upon more ruſh-tufts or roots in the paſture, a greater quantity to each.

Obſervations.—The cows found it in a ſhort time, and ſelected every graſs from amongſt the ruſhes, together with as much of the ſalt as they could. Some of the ruſhes ſuffered in the purſuit, being bitten off and thinned.—Auguſt 28. The ruſh-roots are too deep to be deſtroyed. Graſs, and other herbage near, has ſuffered. Theſe, in 1798, are not to be diſtinguiſhed from the others not ſalted.

Auguſt 25, 1797. Uſed 6lbs. upon 15 ſquare yards of ground almoſt totally overgrown with hen-gorſe (in Gerrard's Hiſtory of Plants called *ononis ſive reſta bovis*, cammock, or reſt-harrow), a pernicious woody ſhrub infeſting clay ſoils, being then in full flower, and beginning to ſet its ſeed-pods; the weather ſhowery.—Auguſt 28. The leaves and flowers are dying. The branches died ſoon after; but the roots ſent out freſh ones at the return of ſpring, which ſtill continue. This being upwards of thirty buſhels to the acre, deſtroyed the intermixed graſs, which became brown and lifeleſs till the approach of winter, when it began to recover, and the whole was covered by the ſpring; but no better herbage than the adjoining; nor has it any time ſince been preferable, July 1798. This quantity was not ſufficient to leave the ground quite bare. Though the herbage was killed, it never totally diſappeared. If a leſſer quantity would have done ſo, it might have been ſerviceable for deſtroying the ſward previous to the making of a lay fallow. Salt has been uſed from fifteen to twenty buſhels *per* acre, upon ſmall patches of nettles in deep-ſoiled paſture, which were fretted awhile; but afterwards recovered, without any viſible alteration in their growth.

It is further obſerved, that it has likewiſe been tried (1798) in various proportions, and at different times, upon a turnip fallow, without any good effect. It was ſown upon a weedy part of the turnips, to the amount of ten buſhels *per* acre; after they were up in three or four rough leaves, theſe were fretted; but the greateſt part of both weeds and turnips recovered with little variation from the other (rather worſe if either). How ſalt would act upon worms, or what is called the fly, is not known, as the crops were not plagued with them this laſt year; probably it would have a good effect; for ſalt-water was tried upon worms on a gooſeberry-buſh, without fretting the tree much, the worms ſoon after died; but, as this was only one inſtance, perhaps a change of weather, or ſome other cauſe, might occaſion their death. This experiment is intended to be repeated both on turnips and on gooſeberries in future. And it is added by the writer, that *with cut ſtraw* ſalt has been tried, mixed and immediately given, put together and left to ferment, and ſprinkled with ſalt and water; in every caſe it is refuſed by the cattle.

And that *in manure*, ſalt mixed with dung, in various proportions, and in different ſorts, is not diſcoverable from the ſame ſort, ſet on without ſalt.

On the 3d of January, 1798, 67lbs. of ſalt were mixed in two ſquare yards of tough peaty parings, cut from the ſides and bottoms of an open peaty drain, and made in a heap of that ſize. The remainder of the ſame parings were made in another heap, and mixed up with a quantity of horſe-dung of proportionate value, allowing the ſalt to be 2*s. per* ſquare yard. Both ſorts were examined by ſir Robert S. Cotton, the beginning of Auguſt laſt, at which time the admixture with ſalt remained in a dead tough ſtate, without any rotten or ſaponaceous particles in it; the blades of graſs in the middle of the heap, though dead, had not loſt their colour. No weed or any vegetable had grown upon this heap; but the other mixed with dung was covered with weeds, and on opening was found much reduced and pulverized; and after one good turning and mixing, was ſet upon the ground in good condition, in November laſt; the other has ſince been twice turned, and remains in the heap unrotted at this day, March 1799. From hence it may be concluded, that ſalt acts not as a ſeptic on vegetable ſubſtances, but, on the contrary, preſerves them in a dead ſtate, and acts as a preventative to putrefaction: this is perhaps more fully proved by the common method of preſerving kidney or French beans, when ripe enough for the table, which are kept the year round for culinary purpoſes in pots, between layers of dry ſalt. The writer alſo ſtates, that from the foregoing experiments it may be concluded, that ſalt may be of ſervice to agriculture in the preparation of fallows, in rainy ſeaſons unfavourable to the plough; but in this caſe great quantities muſt be uſed to have the deſired effect; perhaps leſs than fifty buſhels to each acre would be inſufficient: this quantity would not deſtroy vegetation for more than two months, as appears from the firſt experiment with weed-wiſs, where ſomething more than that quantity was uſed: this quantity might deſtroy the weeds, but would not reduce it, if in a tough or ſoddy ſtate, as appears from the laſt experiment in manures, where the quantity uſed is equal to 240 buſhels *per* acre, allowing it to penetrate the ſurface of the fallow, in an equal degree, only three inches deep. And that perhaps it would be more beneficially uſed in ſmall quantities with hay at the time of houſing or ſtacking, which, if weathered or damp, might prevent it in ſome degree from becoming mouldy, and, if green and in large quantities, might act as a preventative to overheating and firing. But that as an aſſiſtant, or ſtimulus, to the vegetable ſyſtem, it appears, through all the foregoing experiments, to be quite deſtitute of every good property, and unworthy of notice as a manure in any kind of proceſs. And that ſuch is the opinion of ſeveral of the neighbouring farmers who have viewed the different applications, and who have, without exception, concurred in the report which is here made.

It is, however, adviſed by Dr. Darwin, that, becauſe ſalt, when made uſe of as a manure, has a tendency to induce diſeaſe by its exceſſive ſtimulant power, it ſhould be employed a little before the time that the plant would acquire that part of its growth which is wanted. But though this may be done in the garden, it cannot be well extended to the field.

Notwithſtanding theſe reſults, other trials made in the ſame diſtrict, as well as in others, lead to different concluſions. It was found, in one attempt, on four ruſhy land after draining, by ſpreading on one part in the autumn refuſe ſalt, at the rate of eight buſhels to the acre, and on another part ſixteen buſhels to the ſame extent; that in a ſhort time the vegetation wholly diſappeared, not a blade of glaſs being to be ſeen during the early part of the ſucceeding ſpring, but towards the end of May a moſt flouriſhing crop of rich graſs appeared on the eight-buſhel portion. After the middle of ſummer, the other portion too produced a crop ſtill ſtronger; the cattle were remarkably fond of it, and during the whole enſuing winter, and to this time, which is ten or twelve years ſince, the land has retained, and ſtill exhibits, a ſuperior verdure to the neighbouring cloſes. In another trial, in a meadow, the after-graſs of which was of ſo coarſe and rank a nature as to be refuſed by the cattle, on ſalt being laid upon one part of it, they have ever ſince preferred the graſs growing on that part to every other, and eaten up every blade. It has alſo, it is ſaid, good effects in mixture or compoſt with other coarſe manures, producing ſtrong crops of barley and hay-graſs. On ſome foul ſalt being laid upon a court pavement to deſtroy the growth of graſſy matters, though in the firſt ſummer afterwards not any thing appeared, in that which ſucceeded it the vegetation was greatly more abundant than before the ſalt was uſed. It has equally beneficial effects, it is ſaid, on fallow land: by uſing it at the time of breaking up the land, its ſtrong ſaline properties deſtroy vegetation and all noxious inſects; and mixing intimately with the mould before the grain is put in, it ſtrongly ſupports and inſures the beſt crops.

In other experiments, when employed in compoſt with earth, in compariſon with lime in mixture with the ſame earth, on ſuch being laid on different parts of the ſame field, that part which had the lime compoſt vegetated ſtrongly, but bore no ſort of compariſon to the health and vigour of growth in the crop of that which had the ſalt compoſt. The latter is ſtill capable of being marked out and traced by the ſtronger growth of graſs on it, notwithſtanding the time that has ſince elapſed.

In uſing it pretty thickly, without being mixed with the earth on a portion of land, the expected benefit was not only not received, but the vegetation was deſtroyed, and the ground left almoſt bare, which was attributed to the manner of application, as being unfavourable and improper.

The water of ſalt-brine ſprings, where they break out and ſpread upon the ſurface, is however ſtated to have the effect of deſtroying all vegetation for the ſpace of ſeveral yards about them in particular caſes: while in the natural application on the marſh-lands, it appears to produce effects ſomewhat of a contrary kind; as where the ſalt-water of the ſea overflows them, the vegetation is by no means deficient in vigour.

The difference in the effect of ſalt, applied as a manure, is attempted to be accounted for by the writer of the corrected Cheſhire Agricultural Report, by referring it principally to two cauſes; namely, a variation in the manner and degree of its application, and a difference in the nature of the ſoils or lands on which the trials with it have been made. The firſt of theſe cauſes muſt, it is thought, have a great influence on its action upon vegetable matter as that of a ſtimulus, and conſequently that its effects muſt be greatly varied by the proportion applied. When employed in a large quantity, it may, like every other exceſſive ſtimulus, tend to diſorganize and deſtroy the vegetable ſubſtances with which it comes into contact. When uſed in a ſmaller proportion, or in mixture as a compoſt, it may be regarded, by the moderate ſtimulus it gives to the action of the veſſels in the plants, as a promoter of vegetation, and, of courſe, as a valuable manure. The writer is aware that this is not perfectly conformable to the opinion of ſome, but he thinks it the moſt conſiſtent with the general analogy of nature, as well as with particular experiments on the ſubject. In fallows it would ſeem that it might be beneficial in large quantity, by the deſtruction of all uſeleſs vegetable and animal matter; which, at the ſame time, would be ſo much reduced and ſpent by the time the ſeed was put into the ground, as to fit it for producing that degree of ſtimulus, which is moſt adapted to healthy vegetation. The differences of the nature of ſoils muſt obviouſly produce great variety in the reſults of the different trials which are made to aſcertain its particular nature.

Sir Humphrey Davy, in his "Agricultural Chemiſtry," ſeems, however, to think it probable that common ſalt acts as a manure, by entering into the compoſitions of the plants ſomewhat in the ſame manner as gypſum, phoſphate of lime, and alkalies. See theſe heads, SALINE *Manure*, and SULPHATE *of Lime*.

And that as it has been ſtated, from good authority, that ſalt, in ſmall quantities, promotes the decompoſition of animal and vegetable matter; that circumſtance may alſo render it uſeful in certain ſoils and kinds of land. Common ſalt is likewiſe offenſive to inſects. In ſhort, that in ſmall quantities, it is ſometimes beneficial in the intention of manure, he thinks, is now fully proved; and that it is probable that its efficacy may depend upon many combined cauſes. The reaſonings againſt the uſe of it urged by ſome, on the grounds, that when applied in large proportions it either does no good, or renders the land ſterile, are conſidered as very unfair and improper; as the circumſtance that ſalt in large proportions rendered land barren, was well known long before any records of agricultural ſcience exiſted, from the ſcite of a city having been ſtated in the Scriptures to have been ſown with ſalt, that the ground might for ever remain unproductive. And that though Virgil reprobated a ſalt ſoil; and Pliny, who adviſed it for cattle, affirmed, that when diſperſed over land it cauſed it to be barren, theſe are not by any means reaſons againſt the proper uſe of it. The refuſe ſalt of the fiſheries of Cornwall have been ſeen above, and long known to be an excellent manure, but they contain, as well as the ſalt, ſome oil and exuviæ derived from the animals.

Upon the whole, it is thought not unlikely, that the ſame cauſes may influence the effects of ſalt, as thoſe which have a power in modifying the action of ſulphate of lime, as already noticed.

Moſt lands in this country, eſpecially thoſe near the ſea, it is ſuppoſed, probably contain a ſufficient quantity of ſalt already for all the purpoſes of vegetation; and that in ſuch caſes the ſupply of it to the ſoil will not only be uſeleſs, but may be prejudicial. It is noticed, that in great ſtorms the ſpray of the ſea has been carried more than fifty miles from the ſhore; ſo that from this ſource ſalt muſt often be ſupplied to the ſoil. Salt has alſo been found in all the ſand-ſtone rocks that the above writer has examined, and it muſt, it is ſaid, exiſt in the ſoil, or the mould that is derived and formed from them. It is a conſtituent, likewiſe, of almoſt every kind of animal and vegetable manure, therefore it muſt prevail very conſiderably.

Salt has been employed upon fallows, in ſome caſes, with good effects, and the refuſe of it would probably be found beneficial in many circumſtances of land, if it was allowed to be taken from works of this nature, free of duty, and which would not unfrequently be a material convenience to the proprietors.

Many additional facts, experiments, and obſervations will, however, probably be neceſſary, in order fully to aſcertain the nature and utility of ſalt as a manure.

Uſe of Salt for domeſtic Animals.—And it is conceived by Dr. Anderſon, that there is no ſubſtance yet known which is ſo much reliſhed by the whole order of graminivorous animals, as common ſalt. The wild creatures of the deſart are ſo fond of it, that wherever they diſcover a bank of earth impregnated with a ſmall proportion of ſalt, they come to it ever after regularly to lick the ſaline earth, as they would to a pool of water to drink, were there none other near; ſo that when a hunter in America diſcovers ſuch a *lick*, as ſuch places are there called, he reckons himſelf ſure of obtaining plenty of game, by lying in wait near it, and ſhooting them as they approach, until the whole beaſts that have diſcovered it are killed. And it is alſo admitted by all thoſe who have tried the experiment, that ſalt, given along with the food of domeſtic animals, (except fowls, to which ſalt is a certain poiſon,) tends very much to promote their health and accelerate their feeding; and although ſome perſons, who have been at a loſs to account for the manner in which this ſtimulant could act as a nutritious ſubſtance have affected to diſregard this fact, yet no one has been able to bring the ſlighteſt ſhow of evidence, to invalidate the ſtrong proofs that have been adduced in ſupport of it; though, unfortunately for this country, few experiments of this kind have been tried in it. In fact, we have no reaſon to ſuppoſe that ſalt acts in the ſmalleſt degree as a nutritious ſubſtance, or of *itſelf* tends to fatten any animal; but that merely by acting as a condiment, it whets the appetite, and gives the creature to which it is probably adminiſtered a ſtrong reliſh for its proper food, ſo as to induce it to eat in a *given* time a greater quantity than it would have done, and thus greatly to augment, as has been above explained, its feeding quality beyond what it otherwiſe could have had. In this way it is not, perhaps, an extravagant poſition to ſay, that by a proper uſe of common ſalt, the ſame quantity of forage might, on many occaſions, be made to go twice as far as it could have gone in feeding animals, had the ſalt been withheld from them. If ſo, and let thoſe who are inclined to withhold their aſſent to this poſition, prove, by a ſet of experiments fairly conducted, that it is erroneous; till then, the unvarying teſtimony of the few who have tried it, confirming the poſition, ought to be relied on. If ſo, then we have here laid open to our view an eaſy mode of augmenting the produce of our fields to an amazing extent; for, if the ſame quantity of forage can be made to go, not twice as far, but one-twentieth part only farther than it now does, it would be the ſame thing as adding one-twentieth part to the aggregate produce of meat for beaſts, throughout the whole kingdom.

It has alſo been ſuggeſted by a writer in the firſt volume of the Memoirs of the Royal Academy of Sciences at Paris, which is inſerted in the 24th volume of Young's Annals, that vaſt advantage may be derived from the uſe of ſalt, in promoting improvements in land as well as in increaſing the number of cattle. The farmer, it is obſerved, who has more than an ordinary ſtock of working cattle, reaps a double advantage, the one by having his work done in ſeaſon, the other by enriching a greater proportion of his land by means of their additional manure. The only difficulty is how to maintain an increaſed number without increaſing the expence; this, he aſſerts, may be done by the uſe of ſalt, and advances the three following propoſitions.

1. That ſalt, given with the food of cattle, augments the nouriſhment of that food.

2. That in proportion to the quantity of ſalt eaten by cattle, the effects of that augmentation will be perceivable.

3. That no ill conſequence will follow from an exceſs of ſalt eaten by cattle, even though it ſhould be given them without ſtint. And theſe propoſitions he endeavours to

ſupport by unqueſtionable facts. In the juriſdiction of Arle, in the county of Provence, there is a diſtrict called the Craw, extending in length about ſix leagues, and in breadth about three, the whole ſurface of which is covered with ſmall rough ſtones, and not a tree or buſh to be ſeen in the whole diſtrict, except here and there upon the borders; yet on this ſpot, ſo ſeemingly ſterile, by the free uſe of ſalt, more numerous flocks of ſheep are bred and reared than upon any other common, of equal extent, throughout the whole kingdom. And what is no leſs remarkable, the ſheep are healthier, hardier, and endure the ſeverity of winter with leſs loſs, though they have fewer ſheep-cots for covering them, than thoſe bred and fed on more copious paſtures, and beſides they have not the advantage of more convenient ſhelter. Add to this, that the wool of the flocks bred and brought up in the Craw is not only the fineſt in the whole country, but bears the higheſt price of any in France. From hence he concludes that it is to the unlimited uſe of ſalt that theſe ſurpriſing effects are to be aſcribed, for it frequently happens that the Craw is ſo burnt up in the ſummer that the poor animals are forced to turn up the very ſtones to come at the few blades of graſs that grow round them, and yet none periſh for want of food; let every excellence therefore, that can reaſonably be ſuppoſed inherent in the herbage, be allowed to it, yet the quantity of it is ſo ſmall, that without the abundant uſe of ſalt, a fourth part of the ſheep kept in the Craw could not ſubſiſt in it.

But as a ſtill farther demonſtration that this aſtoniſhing effect is ſolely to be attributed to ſalt, we have, ſays the writer, in Languedoc, on the borders of the Rhone, a ſpot of the ſame kind of ſtony land, in every reſpect ſimilar to that of the Craw, yet for want of the free uſe of ſalt, that in Languedoc does not maintain the tenth part of the number of ſheep that are brought up in the Craw, though in other reſpects it is no ways inferior, their wines and other fruits produced in the borders of both being in their goodneſs and other eſſential qualities, equal.

Having thus proved his firſt propoſition incontrovertibly, he proceeds to prove the ſecond, and to recommend an eaſy experiment, which it is in every farmer's power to make, and that is, to give one half of his cattle ſalt, and the other half none. By this ſimple trial, in leſs than a month the difference will be diſcernible; the cattle to which the ſalt is given will ſhew it in their looks, in the ſleekneſs of their coats, in their growth, and in their ſtrength and firmneſs of labour. He adds, that with little more than half their uſual food all theſe effects will be produced.

In order to eſtabliſh his third propoſition, he appeals to the practice about Arles, where the cattle have as much ſalt as they will eat, and none are ſo healthy or thrive ſo faſt as thoſe that eat moſt of it. It is of courſe ſuppoſed that there can be no doubt of the good effects of ſalt, in the feeding or fattening cattle; but the manner in giving it to the labouring cattle is not clearly explained. It is ſtated, that in eight days a ſtock of three hundred ate fifteen pounds of ſalt, being one pound to every ſcore; and it would ſeem that the whole quantity was given in one day, as the farmer is cautioned againſt letting the ſheep drink on the day the ſalt is given, ſuggeſting at the ſame time how much it ſharpens their appetites.

But the experiments of Mr. Cartwright in reſpect to the effects of ſalt, when mixed with the food of animals, have not been extended to ſheep, as he did not apprehend that a few limited experiments would either throw new light upon a ſubject which has already been ſufficiently diſcuſſed, as applied to thoſe animals, or furniſh the public with facts of which it is not already in poſſeſſion. His experiments have, therefore, been confined to hogs and cows. It is ſtated that on July 23d, 1804, three hogs of the ſame litter, about eight months old, were put up to fatten. Their reſpective weights were as follow:

No. 1.	44 lbs.
2.	47 lbs.
3.	40 lbs.

And that from the 23d of July till the 7th of Auguſt, they were fed with barley-meal mixed up with water, during which time they conſumed three buſhels and a half of barley, and gained in weight as follows:

No. 1.	12 lbs.
2.	10 lbs.
3.	5 lbs.

But that from the 3d of Auguſt to the 21ſt, they had ſalt mixed with their food, of which they conſumed a quarter of a pound *per* day. The food conſumed was four buſhels, they had gained upon the laſt weighing as under:

No. 1.	18 lbs.
2.	22 lbs.
3.	14 lbs.

However, that from the 21ſt of Auguſt to the 3d of September, the ſalt was diſcontinued, in which time they eat four buſhels and a half of barley-meal, and their increaſe of weight was:

No. 1.	24 lbs.
2.	21 lbs.
3.	21 lbs.

But from the 3d of September to the 17th, they had ſalt as before, and their conſumption of food was the ſame as during the laſt fortnight, namely, four buſhels and a half of barley-meal. Their gain of weight was,

No. 1.	31 lbs.
2.	19 lbs.
3.	19 lbs.

They were then ſlaughtered.

And it is remarked that it did not appear that the ſalt had any operation either in promoting thirſt, or ſtimulating their appetites, the conſumption of food being nearly the ſame whether ſalted or not; neither does it appear that the ſalt had any influence on their fattening; perhaps the quantity allowed them was too little, and yet he ſhould think not, as there was enough to make their whole maſs of food ſufficiently ſavory to the human taſte. But in trying this experiment he did not confine one parcel of hogs to ſalt, and another to unſalted food. This mode of trying experiments is always uncertain, as there will be frequently habits and tendencies in the individual animals which will vary the reſults, and prevent their being uniform. The faireſt way, and that which is the leaſt liable to error, is to compare each animal with himſelf, by feeding him at one period with one kind of food, and then for an equal period with another. If this principle, which he has proceeded upon, be right, there is nothing in theſe experiments to encourage the practice of adminiſtering ſalt to hogs with a view, at leaſt, to increaſe their tendency to fatten: how far it may contribute to keep them in health, is a different queſtion, and on which years of experience may probably be neceſſary to decide.

It is alſo ſtated that on the 9th of October 1804, his experiments on cows commenced. On that day two Welſh heifers, one of which had calved about five months, the other three, were confined to the houſe, and fed with hay for the ſpace of one fortnight. The hay they conſumed during that time was four hundred weight nineteen pounds, and the milk they produced was thirty-ſix gallons three quarts. They had then for the next fortnight ſalt mixed with their hay, the hay being firſt ſlightly moiſtened with water, and the ſalt ſprinkled over it; in which time they conſumed four hundred weight forty-two pounds of hay, and ſeven pounds of ſalt. The milk produced was thirty-ſeven gallons. For the next fortnight, namely, from the ſixth to the twentieth of November, the ſalt was omitted, and their food was four hundred weight and one quarter of hay, and two hundred weight and a half of cabbages. The produce of milk in that ſpace of time was fifty-four gallons three quarts. From the twentieth of November, their food was the ſame as before, with the addition of half a pound of ſalt *per* day. The produce of milk was fifty-ſeven gallons one quart. It is here noticed that it will be recollected that ſalt ſeemed to have no tendency to promote thirſt, or to increaſe appetite in the hogs; yet on the cows its effects in one reſpect was very perceptible, for during the period they had ſalt they drank three gallons a day each more than at other times. It is therefore ſuppoſed that ſalt may poſſibly promote digeſtion, (notwithſtanding its antiſeptic quality,) by ſtimulating the ſalival glands, and the glands yielding the gaſtric juice, and by introducing an increaſed diſcharge of their reſpective fluids, ſo neceſſary to the ſolubility of the different ſubſtances received into the ſtomach, before they can be admitted into the lacteals. And it is ſuggeſted that though there may be nothing in the foregoing experiments to lead us to ſuppoſe that ſalt has any other tendency to promote a diſpoſition in animals to fatten than as it may contribute to their health, by aiding their digeſtion; yet it is probable that, when adminiſtered to animals yielding milk, it may contribute in ſome ſmall degree to increaſe that ſecretion; and this it may do by promoting thirſt, which induces the animal to drink copiouſly, in conſequence of which the ſecretion of milk, as well as all other ſecretions of the fluids, may be augmented. Perhaps, alſo, it may have a ſtimulating influence on the lacteals themſelves. But that after all, admitting theſe experiments to prove that ſalt increaſes, in ſome ſmall degree, the production of milk, when that increaſed quantity is balanced againſt the price of the ſalt, the dairy-man will find himſelf no gainer by ſuch means.

Thus, notwithſtanding there does not ſeem any thing in theſe experiments, either with hogs or cows, to encourage the practice of giving ſalt to animals, with a view to increaſe their diſpoſition to fatten; yet it would be temerity to affirm that it is entirely uſeleſs. From the avidity with which moſt, if not all, kinds of graminivorous animals, whether in a ſtate of domeſtication or otherwiſe, are known to eat ſalt, whenever it comes in their way, it is reaſonable to conclude that the propenſity has not been implanted in them in vain. But from whatever cauſe its ſalutary effects may be ſuppoſed to proceed, whether (as was hinted at before) from its promoting digeſtion, and an increaſed ſecretion of fluids, or from any other action it may have on the animal economy, it muſt be left to an experimenter more ſucceſsful than he has been, to aſcertain the matter in a more perfect manner.

But with regard to ſheep, it is well known that ſalt has long been made uſe of with advantage in preſerving the health and condition of the animal; and that the inconvenience of wet, moiſt, and otherwiſe unfavourable land for ſheep, may in a great meaſure be obviated, by having recourſe to the giving of ſalt to the animals. It is indeed the common management, in almoſt every country but this. The proper mode of giving it is in ſhallow troughs, being allowed as much as they will take, which is in common but very little, though they are extremely fond of it. Under unfavourable ſeaſons, and where the ſoil, food, and climate, are not well ſuited to them, the uſe of this material has been found of great ſervice. However, in Mr. Fenna's different trials with this material for ſheep, whether ſcattered in different parts of their paſture, or ſprinkled upon other portions, the animals do not ſeem to have been much attracted by it; as they ſcarce did any thing more than ſmell to it, and quit the place where it had been depoſited. This might, however, ariſe from their natural timidity, or their want of being accuſtomed to it; as many animals are ſhy in taking new ſorts of food, till they get a ſort of taſte for them. This is the caſe with oil-cake, and ſome others.

But it has been ſuggeſted by baron Schultz, in the firſt volume of Communications to the Board of Agriculture, that it deſtroys the faſciola hepatica, or fluke-worm, in ſheep. And for this purpoſe ſome have recommended, according to Dr. Darwin, one ounce of ſalt to be given every day, diſſolved in water; but that it is probable that it might be uſed with greater advantage, if hay was moiſtened with the ſolution, which would thus, at the ſame time, ſupply them with better nouriſhment than generally falls to the lot of thoſe diſeaſed ſheep, on the ſuppoſition that they would eat it. But as they take it readily in the manner that has been mentioned above, it may anſwer the intention in that very convenient method very well.

This ſubſtance, on the whole, beſides its effects in other ways, as ſeen above, has the property of moderating the heat in hay-ſtacks, preſerving the green colour, and improving the quality of it. See HAY, &c.

In the early ages of the world ſalt was regarded as a ſymbol of extreme ſterility. And we read of princes, who, in token of their indignation, ſowed grounds with ſalt to render them barren. See Judges, ix. 45. Deut. xxix. 23. Zephan. ii. 9.

Virgil, Georg. lib. ii. reprobates a ſalt ſoil as occaſioning the degeneration of fruit-trees, and admitting no melioration from ploughing.

Pliny, ſpeaking of foſſile ſalt, affirms, that every place in which it is found is barren, and unfit for vegetation. And Plutarch obſerves, that the Egyptians believed ſalt to be the ſpittle or foam of the giant Typhon, the great enemy of their gods; and hence, he adds, they held it in the greateſt abhorrence.

In later times, however, ſalt has been frequently uſed as a manure with great ſucceſs. It has been the cuſtom, ever ſince the time of Henry III. at leaſt, for the farmers on the Corniſh coaſt to manure their land with ſea-ſand, in which ſea-ſalt is ſo copiouſly mixed, that in many places it is uſed to be extracted from a ley made of ſand. When the ſand has been long expoſed to the air, it proves leſs uſeful and enriching, which ſome have attributed to its having been deprived of a good part of its ſalt by the dews and rains. This practice of manuring lands with ſea-ſand has, within theſe few years, been introduced with advantage, in other parts of Great Britain. The Cheſhire farmers purchaſe no inconſiderable quantity of refuſe ſalt from the ſalt-boilers: they mix it with dung, and it makes an excellent manure. At Northwich alone, there were ſold, a few years ago, near 3000 tons of it in one year, for the uſe of the farmers in that and other counties.

In Cheſhire, and other counties, they make a great uſe of the water of their ſalt-ſprings, as a manure for their lands. They let out the water of theſe ſprings for a certain time upon the lands, after there has been rain, and by this means the quantity of ſalt they contain is ſo blended with the rain-water, that it is too weak to hurt the corn or graſs, and yet ſtrong enough to kill worms and other vermin, and to improve vegetation.

On the other hand, when the ſoil abounds with ruſhes and weeds, it is cuſtomary in Cheſhire to lay a quantity of rock-ſalt upon it, as it is found utterly to deſtroy every vegetable. And Mr. Tull, obſerving that common ſea-ſalt is deſtructive to almoſt all plants, except thoſe which naturally grow in the ſea-water, or on the ſhores, invented a method of determining how far the horizontal roots of plants run, by burying ſalt at a diſtance from them.

From the above obſervation it ſhould ſeem, that ſalt, when uſed in ſmall quantities, is a good manure, and, when in large ones, a real poiſon to vegetables.

Some of the African and Arabian deſarts are thought to be barren by their having too much ſalt in them; whilſt many parts of Barbary are reckoned to be peculiarly fruitful, from their containing a leſs quantity of it. As ſalt, in ſmall quantities, is known to accelerate the putrefaction of animal ſubſtances, and when in larger, to retard it, and thus is uſeful in aſſiſting the organs of digeſtion in men and other carnivorous animals, as we have already obſerved, ſalt applied in like manner, as a manure, may be found very beneficial; not from its entering as an aliment into the ſubſtance of vegetables, ſince there are many experiments tending to prove that no kind of ſalt can of itſelf become the food of plants; but from its efficacy in reducing weeds, dried herbage, dead roots, &c. into a putrid oily maſs; the fructifying virtue of oily compoſts being now generally acknowledged: but when it is uſed in a large proportion, by preſerving theſe matters from corruption, and drying up or hardening the fibrous capillaries of the roots, ſo that they become unfit for ſucking in nutriment, the fertility of the ground is diminiſhed, or wholly deſtroyed. As to the fertility of lands overflowed by ſea-water, it may be partly owing to the ſlime and mud left by it, and partly to the ſalt contained in it, which, being in a ſmall quantity, may contribute to the putrefaction of the effete vegetable roots, and the conſequent production of an oily compoſt.

There are no lands that fatten cattle ſooner than thoſe paſture grounds which are thus, at times, overflowed by ſalt-water: ſuch, *e. g.* are the paſtures at Erith, near the Thames, which are ſometimes overflowed at ſpring-tides. Some farmers have tried the ſcattering of ſalt over their corn-fields, as ſoon as ſown, in the quantity of two buſhels to an acre, with good ſucceſs: and this quantity may be productive of all the advantages which ariſe from the occaſional overflowing of high tides, or natural ſalt-ſprings.

Salt is uſed *ſymbolically* and *metaphorically*, by ſacred and profane writers, in a variety of reſpects. Accordingly we find it uſed as the ſymbol of wiſdom, Mark, ix. 50. Col. iv. 1.; and hence we read of Attic ſalt, denoting wit or mental intelligence. Salt is alſo uſed as a ſymbol of incorruption and perpetuity, Numb. xviii. 19. 2 Chron. xiii. 5. It is alſo metaphorically uſed to ſignify barrenneſs or ſterility, Judg. iv. 15. Zephaniah, ii. 9. Jer. xvii. 6. Salt is likewiſe the ſymbol of hoſpitality, and alſo of that fidelity which is due from ſervants, friends, gueſts, and domeſtics, to thoſe who maintain them. Thus the governors of the provinces beyond the Euphrates, writing to king Artaxerxes, tell him, "becauſe we have maintenance from the king's palace, &c.;" which in the Chaldee is thus expreſſed, "becauſe we are ſalted with the ſalt of the palace." (See Ezra, iv. 14.) Among the nations of the Eaſt Indies it is ſaid to be a common expreſſion, "I eat ſuch an one's ſalt," for "I am fed or maintained by him."

Salt, in *Chemiſtry*, &c. See Sal and Salts.

Salt-*Brine Springs*, in *Rural Economy*, ſuch ſprings, openings, or pits, as afford a watery fluid, ſtrongly impregnated with ſalt or ſaline matter. The ſalt obtained from the water of ſalt-wells and ſprings, is denominated *brine* or *ſpring* ſalt. Great quantities of this ſalt are made in moſt of the inland countries, as in Germany, Switzerland, Hungary, and in ſome parts of France and England.

In Somerſetſhire, Cumberland, Weſtmoreland, Durham, and Yorkſhire, there are many ſalt-ſprings, but they are either too weakly impregnated, or ſituated where fuel is ſcarce, and for theſe and other reaſons are not worked; but in other parts of England there are many rich and valuable ſalt-ſprings, which are worked to great advantage. Of theſe, ſome are ſituated in Staffordſhire, a great many in Lancaſhire, but the chief are thoſe at Droitwich in Worceſterſhire, and Northwich in Cheſhire; about which laſt place there are many rich mines of foſſile ſalt, above and beneath the beds of which the ſalt-ſprings are uſually found.

At Namptwich, in the laſt county, there are alſo ſome ſalt-wells, which have been of very long ſtanding, being ſuppoſed by many to have been worked in the time of the Romans. The brine of theſe ſprings is found to differ very greatly in its ſtrength and qualities; ſome yielding much more ſalt than others, and the ſalt extracted from ſome of them being found improper for many uſes, for which that of others ſerves very well.

The brine of Barton and Northwich is almoſt fully ſaturated with ſalt, a pound of it yielding, as ſome have ſaid, ſix ounces of ſalt; but this cannot be ſtrictly true; for, allowing that 16 ounces of water can diſſolve ſix ounces of ſalt, and no more, it muſt follow that no brine-ſpring can yield ſix ounces of ſalt from a pint of brine; becauſe 16 ounces of water impregnated with ſix ounces of ſalt, conſtitute a ſaturated brine, weighing 22 ounces; and, therefore, by the rule of proportion, if 22 ounces of brine contain ſix ounces of ſalt, 16 ounces of brine will contain $4\frac{4}{11}$ ounces of ſalt. Hence we may infer, that the ſtrongeſt brine-ſprings will not yield above one quarter of their weight of ſalt. Accordingly, Dr. Leigh (Hiſt. of Lancaſhire, p. 43.) informs us, that ſome of the ſtrongeſt ſprings at Northwich yielded ſeven or eight ounces of ſalt from a quart of brine; but a quart of brine weighs conſiderably more than 32 ounces, the weight of a quart of water: ſo that the Northwich ſprings, from this account, do not yield a quarter of their weight.

The brine of Droitwich, Upwich, and Middlewich, contains about one-fourth of ſalt: ſome of the ſprings at Namptwich yield a ſixth part of ſalt; and thoſe of Weſton, in Staffordſhire, afford only one-ninth part. In England, we ſeldom boil weaker brine than the laſt; but in Germany, and ſome other places, where ſalt is ſcarce, they work ſprings, whoſe water is not impregnated more highly than the common ſea-water, containing about $\frac{4}{30}$ ſalt.

Here we may obſerve, that ſea-water, brine-ſprings, and rock-ſalt, generally contain, beſides common ſalt, various other earthy and ſaline ingredients, ſuch as calcareous earth, magneſia, Epſom ſalts, ſelenites, Glauber's ſalt, fixed alkali uncombined with any acid, &c. Theſe ſubſtances are foreign to the nature of the ſalt, and injure its quality; and hence it muſt appear, that common ſalt may have very different properties, according to the quality of the water from which it is made, or ſkill of the ſalt-maker in ſeparating theſe heterogeneous ſubſtances from it.

Although ſprings of the kind above-mentioned exiſt in ſeveral different parts of our own country, in different degrees of ſtrength, and of different qualities, yet they are perhaps at preſent no where wrought for the purpoſe of obtaining ſalt from them, in any quantity, except in the county of Cheſter. They are, however, highly intereſting and important to that diſtrict in ſeveral different points of view.

The intelligent author of the corrected account of the agricultural ſtate of that diſtrict, ſays that the principal brine-ſprings in it are found in the valleys through which the river Weaver, and the ſmall rivulet the Wheelock, have their courſe; and, for the moſt part, near the banks of them. If a weak ſpring of this nature at Dunham, near the Bollin river, be excepted; and the ſprings at Dirtwich, in the moſt ſouthern part of the county; no others, it is ſaid, have ever been worked. By their means, it is ſuppoſed, an importance is given to the firſt mentioned river, that it would not otherwiſe poſſeſs; and that there is probably a greater bulk of carriage on that ſtream, than on any other river in the iſland, which is of itſelf ſo little conſiderable. Tracing the courſe of this river from its ſource, at the Peck-ſerton hills, no ſprings ſtrongly impregnated with ſalt are ſaid to be found near it, until the town of Namptwich is approached. But that brine does exiſt as high up as Brickley, though it has not been aſcertained at what depth, or of what ſtrength, ſeems probable, it is ſaid, from a ſinking of the ground, and the conſequent filling of the cavity with this ſort of fluid, which took place in its vicinity in the year 1657; accounts of which are given by Dr. Jackſon, in the Philoſophical Tranſactions, and more minutely by Childrey, in his Britannica Baconica. Leland has alſo, it is obſerved, given the hiſtory of a very ſimilar occurrence at a ſtill earlier period, a few miles ſouth of this. It is related by him, that "about a mile from Combermere abbey, part of a hill, with trees upon it, ſuddenly ſunk down, and was covered with ſalt-water, of which the abbot being informed, cauſed it to be wrought; but the proprietors of the wiches compounding with him, he left off working." It is likewiſe added, "that this ſalt-pool ſtill continued in his time, but that no care was taken of it."

It is further ſtated, that a few miles lower down the Weaver than Brickley, in Baddiley, and one or two adjoining townſhips, ſprings are met with variouſly impregnated with ſalt. Brinefield is, it is ſaid, the name given to different incloſures in Baddiley. And where the river takes a northerly direction at Audlem, brine is, it is ſaid, met with on each ſide of it, and may be found, on ſinking near its banks, all the way from thence to the town of Namptwich. About the midway between the former place and Namptwich there is a farm, it is remarked, which ſtill retains the name of Brine-pits farm, where ſalt was formerly manufactured. Alſo a little further down, brine was found, and ſalt made, on each ſide of the river, at Auſtaſton and Baddington, as ſtated in King's Vale Royal. However, at the preſent time, it is aſſerted that none is manufactured until the town of Namptwich is reached, where a great many ſalt-brine ſprings preſent themſelves. Continuing the ſame courſe down the river, brine is again found at Winsford. And betwixt Winsford and Northwich, attempts have been made to get down to it; but theſe have hitherto, it is ſaid, been rendered unſucceſsful by the quantity of freſh water which has been met with. It is ſtated to be again found at Lettwich, in the angle between the Dane and the Weaver rivers; at Northwich; at Witton, half a mile north of the former of theſe places, on a ſmall brook of the ſame name, which falls into the Weaver at Anderton, a townſhip about a mile below Northwich. Alſo at Barnton, a mile ſtill lower down the river, a weaker brine has been found; and again at Saltersford, about a mile below the above place. Two miles ſtill lower, in Weverham, brine has likewiſe been found, which was worked, it is ſaid, as early as the time of William the Conqueror; but it does not appear, it is remarked, that any has been diſcovered below this place.

And in following the courſe of the little ſtream, the Wheelock, brine is, it is ſaid, firſt met with at Lawton, on the very confines of the county; then three or four miles lower, at Roughwood, in the townſhip of Bechton; again at Wheelock; and, laſtly, at Middlewich, where the Wheelock falls into the Dane. It is remarked that no brine has been found in the valley through which the Dane flows from Middlewich to Northwich: however, higher up this ſtream, in the vicinity of Congleton, ſome of the incloſures have, it is ſaid, the name of Brine-field, Brine-hill, &c. whence it may be concluded, that brine has ſome time or other been diſcovered there in ſuch places.

But though the places which have been noticed are the only ones where brine has been found, and works for its evaporation erected, there is little doubt, it is ſuppoſed, but that it might be met with in almoſt every part of the valleys through which the Weaver and the Wheelock rivers take their courſe, did not the freſh-water ſprings prevent the acceſs to or the coming at it.

It is ſtated that the depth from the ſurface at which the ſalt-brine ſprings are found; the level they take when the ſtratum which immediately confines them is penetrated; and the abundance of the brine which they contain or afford, are extremely various. About the town of Namptwich, the brine is met with, it is ſaid, about ten or twelve yards from the ſurface; and that in ſinking for freſh water, it is neceſſary to do it with caution, in order that the brine may be avoided. It is noticed, that in ſinking for the foundation of a bridge, ſome few years ago, juſt above this town, a very copious ſalt-brine ſpring was found about eight yards from the ſurface; and that the workmen were much incommoded by it. The brine-ſprings moſtly riſe near to the ſurface. When Winsford is reached, to which place the river Weaver is made navigable, the brine is found, it is ſaid, at a much greater depth from the ſurface; and that it is generally neceſſary to ſink from fifty-five to ſixty yards before it is met with, when it is uſually found in great abundance. It has its level twelve yards from the ſurface. Near Northwich it is ſtated to be found at a depth from thirty to forty yards, the ſprings being very fluent; and its level is about twenty yards from the ſurface. At Witton it is met with at about the ſame depth, and riſes much to the ſame level, the ſprings being equally copious. However, through the whole of Anderton, the quantity of brine is ſaid to be the moſt abundant; at the higher end of that townſhip it is obſerved to be found about forty yards from the ſurface, and that the level is nearly the ſame as that at Witton. Somewhat lower down, it is ſaid to be neceſſary to ſink from fifty to fifty-five yards before it is met with. Still keeping the courſe of the river, at Barnton, about a mile below Anderton, on ſinking ſixty yards, and boring fifty yards below this, it is noticed, that a very weak brine was diſcovered, and that in ſmall quantities only.

In tracing the different ſalt-brine ſprings along the little ſtream of the Wheelock, it is ſaid to be found, that at Lawton they are met with about eighty-five yards from the ſurface, and have their level at ſeventy yards. The ſprings here, it is remarked, are much leſs copious than many of thoſe on the Weaver. At Roughwood, the brine is fifty yards from the ſurface, and riſes fifteen yards; the ſpring is by no means abundant, and it is often pumped dry. At Wheelock it is noticed to be found at the depth of ſeventy yards, and that it riſes within thirty yards of the ſurface; the ſprings being very copious. At Middlewich, however, the brine is, it is ſaid, at different depths, as from thirty-five to eighty-four yards; in one pit, in which it is found at ſeventy yards depth, it riſes, it is ſaid, to the ſurface. But, it is remarked, that the ſprings here are by no means ſo fluent, and are occaſionally pumped until they are quite dry.

In regard to the *diſcovery* of the ſalt-brine ſprings in this diſtrict, and the time when they were firſt worked, it is ſaid that we are without any certain accounts. It is thought, however, that there can be little doubt, but that at a very early period ſalt muſt have been procured from the brine-ſprings which found their way to the ſurface. This, as has been ſeen above, is particularly the caſe with the ſprings in the vicinity of the towns of Namptwich and Middlewich; and it is known from Doomſday-book, it is ſaid, that, at the time of Edward the Confeſſor, brine-pits were wrought at all the wiches in this diſtrict. It would appear, however, it is obſerved, that, even ſeveral centuries afterwards, the art of making ſalt was very imperfectly underſtood in any part of this country; and that the quantity manufactured was very inconſiderable. And it is further ſtated, that Henry VI., having been informed that a new method of making ſalt had been invented in the Low Countries, by which it might be made more abundantly in this country than had hitherto been the caſe, invited John de Sheidame, a gentleman of Zealand, with ſixty perſons in his company, to come into this country, and inſtruct his ſubjects in the new method of making ſalt, promiſing them protection and encouragement. But whether they came, or what their improvements were, does not appear: however, it is probable that theſe were not of much importance, or that they were loſt, as we find the Royal Society, ſoon after its inſtitution, very intent upon improving the art of manufacturing white ſalt, and publiſhing, towards the cloſe of the ſeventeenth century, the accounts or hiſtories of ſeveral modes of making it; particularly Dr. William Jackſon's account of the brine-ſprings, and the method of making white ſalt at Namptwich, in this country; and Dr. Thomas Raſtel's account of the manufacture of it at Droitwich, in Worceſterſhire. However, theſe are conceived to be rather reports of the methods of manufactures then uſed, than ſuggeſtions of improvements. The ſalt made in this country was ſtill, it is ſaid, conſidered inferior to that made abroad; and what was manufactured in Cheſhire was confined to the ſupply of its own conſumption, and that of a few neighbouring counties or diſtricts.

But the want of knowledge in the manufacture, and the ſuppoſed ſuperiority of foreign over Engliſh ſalt, it is obſerved, attracted, in the beginning of the laſt century, the attention of the houſe of commons; and Mr. Lowndes, a Cheſhire gentleman, received a reward from parliament, in conſideration of his making known ſome improvements he was thought to have made in the manufacture of ſalt. Soon after which the late Dr. Brownrigg publiſhed his ingenious and philoſophical work on "the art of making common ſalt," in which, in addition to a full and detailed account of the proceſſes in the manufacture of it, at that time uſed, he ſuggeſted, it is ſaid, a variety of alterations and improvements. Some of theſe were, it is obſerved, adopted, though not to the extent which was admitted of by the ſtate of the manufacture. In conſequence, however, it is thought, of theſe and various ſubſequent improvements, joined to the increaſed commercial ſpirit of the country, and the facility of communication with the port of Liverpool, by rendering the river Weaver navigable for veſſels of conſiderable burthen from Northwich and Winsford, the manufacture of white ſalt in Cheſhire, as well for home conſumption as for exportation, has exceedingly increaſed in the courſe of the laſt century, more particularly towards the cloſe of it; and the ſupport of it is now become, it is thought, an object and matter of the firſt conſequence, not only to the county itſelf, but to the whole nation.

Therefore ſalt-brine ſprings appear to have exiſted, and to have been wrought in this diſtrict, from the earlieſt periods of the hiſtory of this country, while the diſcovery of the beds of foſſile ſalt in it are only of late date. See Rock-*Salt.*

In regard to the origin and ſtrength of theſe ſalt-brine ſprings, it may be obſerved, that the notions concerning the former were, it is ſaid, extremely erroneous and abſurd until the diſcovery of the beds of foſſile ſalt; but that ſince that period, no doubt has been entertained that their ſaline contents are derived from the water of ſprings, or rain-water, coming upon, or penetrating down to the ſurface of theſe rocky beds, or the heads of the rock, as they are commonly termed, and thus effecting the ſolution of a certain portion of them with which they come in contact. With reſpect to the latter, the quantum of ſuch ſolution, or the ſtrength of the brine, various circumſtances will, of courſe, it is obſerved, influence it; but moſt particularly, the extent of ſurface of the rocky ſaline bed, which is expoſed to the action of the water; as the greater this is, the more completely the water and the rocky bed are brought into contact, the longer and more perfect the ſolution which takes place, and the ſtronger the brine or ſalt-ſpring. But, independently of ſuch an immediate operation, the ſtrength of the brine will, it is ſaid, be varied by the manner in which any pit is worked, and the circumſtances attending the raiſing of the brine; for if it be pumped up ſeldom, it will be found to be weaker than it would be, were it drawn up more frequently. Dr. Jackſon found, that a quart of brine, when the pit had been drawn off three or four days, to ſupply five or ſix wich-houſes, yielded an ounce and a half more ſalt than at any other time, when it had a reſt of ſomewhere about a week. And it is ſaid, that it has been noticed at ſeveral ſalt-ſprings, by Dr. Brownrigg, that the brine is much ſtronger at the bottom of the pits than near the ſurface; alſo in dry weather, than in wet; and when the pits are conſtantly drawn, than when little brine is taken out of them. The explanation of which is conſidered to be this, that the water which finds its way to the layer or bed of foſſile ſalt, probably remains, in a great degree, at reſt, until put in motion by raiſing the brine; while in this ſtate, the portion of it which is in immediate contact with the rock becomes ſaturated; but acquiring at the ſame time a greater degree of ſpecific gravity than it had as pure water, it thereby prevents the water above from ſinking down ſo as to act upon the rock; and the ſum of ſolution is conſequently leſs than where the pit is frequently worked, and the rocky ſaline ſubſtance expoſed to a more conſtant action of the water. This, it is obſerved, is particularly the caſe in ſuch brine-pits as are not immediately connected with any others; and that the ſame obſervations will be applicable to thoſe pits which have a communication; with this difference only, that the mode of working in one pit is to be taken into conſideration in the effect produced on the ſtrength of the brine in another, independently of its own particular operations. It is ſtated, that moſt of the pits in the vicinity of Northwich and Winſford in the above diſtrict, have ſuch a communication at the rock-head, as is rendered ſufficiently apparent by the brine in one pit having its level lowered, when another pit is at work at ſome diſtance. At the former place this has been further evinced, it is ſaid, when the brine has found its way into the cavity of a rock-ſalt pit, an accident which has not unfrequently occurred. In ſuch caſes, it is obſerved, ſix or eight brine-pits, at the diſtance of nearly a mile from each other, have often been laid dry, and have continued ſo until the rock-pit has been filled, and the brine has again found its level. Even on ſome occaſions, where the cavity of the rock-pit has been large, it is remarked, that four or five weeks have elapſed before this has been fully accompliſhed. The ſtrength of the brine will alſo, it is ſaid, be further materially affected by the quantity of freſh water which finds acceſs to it, either directly through the ſides of the ſhaft out of which the brine is drawn, or by any fiſſures, cracks, or openings in the earth with which theſe are nearly connected. The proportion of ſalt which is held in ſolution, in ſuch caſes will, it is ſaid, bear a ratio to the freſh water thus introduced, and to the ſubſequent opportunity this has of acting upon the rocky ſubſtance. Theſe circumſtances are therefore all highly neceſſary to be conſidered in the working of ſalt-brine ſprings.

In reſpect to the quantity of ſalt which a given portion of water, fully ſaturated, will hold in ſolution, very different eſtimates have been formed; which are ſuppoſed to have been cauſed by confounding given quantities of brine with the ſame meaſures of water, and the want of proper diſcrimination between the quantities of ſalt contained in the one, and that capable of being diſſolved by the other; as well as from the different ſtate of the ſalt uſed in making the trials, in which there may have been variations in dryneſs, and more or leſs of the water of cryſtallization. But the reſult of the moſt correct trials ſhews it to be not quite ſix ounces in ſixteen of water, avoirdupois weight. In the forming of eſtabliſhments for the making of ſalt from brine-ſprings, this is, of courſe, of material importance, as the firſt points to be conſidered are unqueſtionably the ſtrength and purity of the brine which is to be employed. However, notwithſtanding theſe circumſtances, the advantages derived from ſeveral other adventitious ones may, it is ſaid, render it better worth while to prepare the article from a weaker brine in one ſituation, than from a ſtronger one in another. The chief and moſt material point which has any influence in this buſineſs, after thoſe of the ſtrength and purity of the brine, is ſaid to be the convenience which is afforded of water-carriage for ſending away the manufactured material, and for the ready conveyance of fuel to the works. The expence and capability of ſupply of this laſt article are alſo neceſſary to be conſidered. And the fluency of the ſpring is another conſideration which, it is noticed, Dr. Jackſon has obſerved, "may be rich or poor, in a double ſenſe; for a ſpring may be rich in ſalt, but poor in the quantity of brine it affords." The opportunity of ſtrengthening a weaker brine with rock-ſalt, may likewiſe, it is ſaid, render it more advantageous to work this, than a ſtronger brine differently circumſtanced.

In reſpect to ſtrength and purity, the greater proportion of the brines of the above diſtrict are concluded, from different trials, to poſſeſs them in a very ſuperior degree; and that many of thoſe which are leſs impregnated with ſalt, have rock-ſalt at no great diſtance from them, for affording the ready means of ſtrengthening them; while the ſprings are in general copious, and fuel, eſpecially coals, readily procured, though of late at a much more increaſed rate than formerly, notwithſtanding the more extended navigation of the principal river, and every convenience of water-carriage furniſhed by a neighbouring canal.

It is further noticed that the workmen, or the *wallers*, as they are denominated from the bank or wall they raiſe by the ſalt rubbiſh round the pits, commonly make their eſtimate of the ſtrength of brine from its ſpecific gravity; a new-laid egg being their uſual hydrometer, which ſinks in pure water, but is ſuſpended when the water holds a ſmall portion of diſſolved ſalt in it; and has a larger or ſmaller extent of its ſurface expoſed, as the brine contains more or leſs ſalt in ſolution. They have alſo an inſtrument of the above kind graduated upward, like that for ſpirits, which is occaſionally employed, the zero point of which is completely ſaturated or *leach* brine; however, by this, it is ſaid, they only know the comparative ſtrength of the different brines, and are not enabled to aſcertain the exact proportion of ſalt contained in any given quantity of liquor.

It is however ſtated, that, from the table in Watſon's Chemical Eſſays containing the ſpecific gravity of water impregnated with different quantities of ſalt, from the one-third down to the one thouſand and twenty-fourth part of the weight of the water, by knowing the ſame ſort of gravity in any brine, a pretty exact eſtimate may be formed of the amount of the ſalt it contains. The French, it is obſerved, employ Baumé's inſtrument for this purpoſe, as being, from its ready application, the moſt uſeful and convenient. And with the ſame hydrometer, nicely adjuſted and regulated with every poſſible care in other reſpects, the writer found by his trials that the ſtrength of ſeveral of the Cheſhire brines was from 21.250 to 25.625 *per cent.* of pure ſalt, and in one inſtance from 25 to 26.566 *per cent.*; or that in an ale-pint there was contained from 4 oz. 15 dr. to 6 oz. 2 dr.; and in one caſe from 6 oz. to 6 oz. 6 dr.; and the proportion of earthy ſalts contained were from 6.25 to 2.500 *per cent.* Some of the brine-ſprings are noticed to have a greater ſpecific gravity than that of a ſaturated ſolution of muriate of ſoda in pure water; which was found by the above hydrometer to be, when cold, 27.812 *per cent.* of the ſalt; an ale-pint of the London ſtandard braſs meaſure, containing 6 oz. 12 dr. By referring to the work the quantities will be ſeen minutely put down, with the names of the different brine-ſprings to which they relate, and many other intereſting particulars.

And a compariſon of the ſtrength of the brine-ſprings in the above diſtrict, with that of ſimilar ſprings in France, may be formed by the account given by citizen Nicholas, an aſſociate of the National Inſtitute, in a memoir on the national ſalt-works in the departments of La Meurthe, Jura, Daubs, and Mont Blanc; who was required, by a decree of the committee of public ſafety in Auguſt 1795, to viſit ſuch works, and collect all the neceſſary information concerning their actual ſituation, and the means of their improvement. It would appear, it is ſaid, that there are three of theſe eſtabliſhments in the firſt, as at Chateau Salins, at Moxenvie, and at Dieuze; two in the ſecond, as at Salins, and Mont Morot; one in the third, at Arc; and two in the laſt, as at Montiers, or Mont Salin, and at Conflans. At the three firſt places, the brine pretty regularly contains, it is obſerved, from 13 to 14 *per cent.* of muriate of ſoda, though, after long pumping, it comes up ſtronger. At the two ſecond places, the average degree of ſaltneſs in the former is 11.86 of the hydrometer; and that of the latter from $1\frac{1}{3}$ to $8\frac{1}{2}$ of it. At the third place, the brine contains from $3\frac{2}{7}$ to $7\frac{1}{8}$ *per cent.* of the ſame ſalt. And in a particular trial with the brine at Chateau Salins, the reſult was, that one pound of water gave 1 oz. 7 gr. of pure ſalt; 25 grains of ſelenite; 75 grains of Glauber's ſalts; and $81\frac{1}{2}$ grains of muriated lime and magneſia.

In reſpect to the *rent* of brine-ſprings, from Doomſday-book, it is ſaid to appear that the king had formerly a claim on all thoſe in the above county. That, in the time of Edward the Confeſſor, there was a brine-ſpring at Namptwich, and eight ſalterns betwixt the king and earl Edwin; of which the king bore two-thirds of the expences, and received two-thirds of the returns; the earl the other third. Beſides, the earl had a ſaltern for the particular uſe of his own family: if, however, he ſold any ſalt from it, the king had two-thirds of the receipts, the earl one-third. Several private individuals had alſo, it is ſaid, ſalterns for the uſe of their own families; but if they ſold any ſalt, a certain ſum was paid to the king.

However, no right over theſe ſprings is now, it is ſaid, claimed by the crown; they being ſolely the property of the owners of the land in which they are found. Few of them, however, are occupied by the land owners; they being commonly let out to tenants, either at fixed annual rents, without any reſtrictions as to the working of them, or at rents proportioned to the extent of the manufacture, and the quantity of ſalt produced.

In order to prepare the ſalt, the brine is raiſed from the pits in which it is found, by being pumped up into ciſterns, or reſervoirs formed near the works. In ſuch ſituations as admit of the aid of a ſtream of water, it ſometimes is raiſed by that means, as is the caſe at different places. Where ſuch aſſiſtance could not be had, it was formerly the cuſtom to draw it up by horſes. However, in Camden's time horſes were not had recourſe to for this purpoſe, as he obſerves, that "at Northwich there is a deep and plentiful brine-pit, with ſtairs about it, by which, when they have drawn the water in their leathern buckets, they aſcend half naked to their troughs, and fill them, from whence it is conveyed to the wich-houſes." The demand for ſalt increaſing, ſmall wind-mills were in addition employed for this uſe; and as the conſumption became ſtill larger, a variety of inconveniencies were experienced from truſting to ſo uncertain a machine, which ultimately led to the uſe of ſteam-engines, and conſequently, at almoſt all the newly-erected works the brine is raiſed in this way.

It is noticed that the *reſervoirs*, into which the brine is pumped up, are either large ponds, formed in clay, and moſtly lined with brick, being capable of containing the conſumption of ſeveral weeks; or they are wooden ciſterns, pitched within, fit for holding the ſupply of it for the conſumption of only a few days.

Though it has been ſeen that many of the brines contain very large proportions of ſalt, ſo as to be nearly ſaturated in ſome caſes, they will all diſſolve an increaſed portion of ſalt to ſome extent; and as it is of great importance in regard to the economy of fuel, to have the ſmalleſt poſſible quantity of ſuperfluous water to evaporate, it is conſtantly an object with the manufacturer to have a fully ſaturated brine. In caſes, therefore, where the brine is weak, or where there is the convenience of ſaturating a brine already ſtrongly impregnated with ſalt, this is done by putting rock-ſalt in the ciſtern into which the brine is pumped, and permitting the liquor to act upon it until it becomes completely ſaturated. For this purpoſe a ſtrong wooden frame is fixed in the ciſtern, at about half its depth, upon which the rock-ſalt is thrown; and the earthy reſiduum is occaſionally removed from it, after the whole of the ſalt has been diſſolved. Water ſlightly impregnated with ſalt, in other works, is alſo improved and brought to a perfect ſtate of ſaturation in the ſame way.

From theſe reſervoirs the brine is, it is ſaid, drawn, as it is wanted, through wooden pipes, or by troughs, into the *evaporating* pans, which are now made of wrought iron; the dimenſions of which vary conſiderably, but they are moſtly in new works a great deal larger than thoſe which were in uſe a few years ago; uſually containing from 600 to 800 ſuperficial feet, and in one or two inſtances nearly 1000 feet. Their form is uſually that of an oblong ſquare, having the depth of from 12 to 16 inches. Thoſe of the firſt ſizes have commonly three furnaces, of from ſix and a half to ſeven feet long, and from 20 to 24 inches wide. The grates from two and a half to three feet from the bottoms of the pans. The furnace-doors ſingle; and none to the aſh-pits. Each pan is moſtly partitioned out, and has a ſeparate *pan-houſe*, on the ſides of which are long wooden benches, more than a yard wide, for placing the ſalt upon in conical baſkets to drain, after it is taken from the pan; theſe houſes being covered with wooden or ſlated roofs, with *eœuvres* to let the ſteam paſs freely away. See the work alluded to above, and the article SALT.

The very great difference in the dimenſions of the reſervoirs, the pans, and other things uſed at preſent, and thoſe which were employed two centuries ago; ſtrongly denote the vaſt increaſe and improvement of this manufacture.

The ſalt is prepared from the ſalt-brine ſprings, in the above diſtricts, into *ſtoved* or *lump* ſalt, *large-grained flaky* ſalt, and *large-grained* or *fiſhery* ſalt, by ſeveral different ways, or rather by the application of different degrees of heat in the proceſs; the firſt ſort being produced by the higheſt, or that of two hundred and twenty-ſix degrees, and the laſt ſort by the loweſt, or that of from one hundred to one hundred and ten. The intermediate degrees furniſhing the other two ſorts of ſalt, as thoſe of from one hundred and ſixty to one hundred and ſeventy; and of one hundred and thirty to one hundred and forty degrees of Fahrenheit's ſcale. See MURIATE *of Soda*, and SALT.

Though the white ſalt made in the above diſtrict was, little more than a century ago, ſcarcely more than ſufficient to ſupply its own conſumption, as has been ſeen, the increaſe which has taken place ſince that time has been ſo great, on different accounts, that the quantity diſpoſed of for home conſumption in different places is ſtated to have been, from ſix of the works, from the 24th of May 1805 to the ſame date in 1806, no leſs than 663,637 buſhels, or 16,590 tons 77 buſhels, which paid a duty to government of 475,728*l.* 15*s.* And though the increaſe has lately been ſo very large, there is reaſon to believe, it is ſaid, that it is ſtill capable of conſiderable extenſion. See ROCK-*Salt*.

SALT-*Brine Pits*, the ſhafts, pits, or openings from which the ſalt-brine is taken or raiſed. See the preceding article.

SALT-*Marſh*, in *Agriculture*, ſuch paſture-land as lies near the ſea, and is ſometimes overflowed by the water of it. It has been obſerved that horſes and black cattle thrive better, and get fleſh and fat ſooner, in ſalt-marſhes than in freſh-water meadows or upland paſtures; though the reaſon of it has not been fully aſſigned. But according to ſome, it is ſuppoſed that the air of the ſea whets their appetites; and that the herbs produced by the lands near the ſea are more conducive to the health of herbaceous animals, than ſuch as grow on upland paſtures, whether natural or artificial. But may we not rather attribute the thriving of cattle on theſe marſhes to the ſaline particles with which the earth as well as its produce is, when near the ſea, ſtrongly impregnated? Perhaps even the dews have their portion of ſalt; but of this the writer (now cited) has made no experiment, therefore mentions it only as a probable conjecture. He is fully of opinion, that the ſaline particles only with which the graſs is impregnated in the above-mentioned ſort of marſhes cauſe cattle to thrive in them in the manner they are known to do. Theſe ſalts purge away the foul humours which the beaſts have contracted, either by inactivity, or by being overheated in labour, by which means they are better diſpoſed to be nouriſhed by the aliment they receive. But it may perhaps be objected, that if the graſs of theſe marſhes is apt to purge cattle, this very purging, by being long continued, will be a means of preventing their growing fat. To this it is anſwered, that the cattle take with their food every day nearly the ſame quantity of theſe purgative particles; but that the quantity of ſalt, which at their being firſt put into the marſh will have that effect, will ceaſe producing it when they are by cuſtom habituated to take a daily portion of it, as is evident in many caſes. The writer ſuggeſts, that as it is not convenient to every one to ſend their cattle to a ſalt-marſh, that it would be happy if a method could be ſubſtituted that would nearly anſwer the ſame purpoſe. He does not think this impoſſible: perhaps if common ſalt-water was to be laid in the fields for the horſes to lick as often as they pleaſed, they would thrive much better; were he to ſay he knew it would have that effect, it would, however, be no preſumption. Cattle, he adds, are naturally fond of ſalt, and if let at their liberty will take no more of it than what does them good. With this help, our freſh-water meadows and uplands, natural and artificial paſtures, would yield us a greater profit, and of courſe be worth more both to the land-owner and farmer. And in ſupport of this practice the writer aſſerts, that in the inland parts of Switzerland, when their horſes and cattle have endured the hardſhips of a long and ſevere winter, they turn them in the ſpring looſe into the mountains, laying ſalt here and there upon the rocks, for them to reſort to when they pleaſe; and of this they are ſo fond, that when the farmers want to catch their horſes, they take ſome ſalt in their hats, as we do oats in a ſieve, to allure them. And experience has long convinced them, that the ſalt thus laid in their way anſwers a very good purpoſe: their cattle are more healthy in general than ours, and they attribute it almoſt to this alone. And he ſtates, that in the provinces of Munſter and Connaught, in Ireland, they very frequently lay ſalt on ſlates, for the benefit of their horſes when at graſs, which they find does the cattle great ſervice. It is likewiſe ſuggeſted, that the uſe of this ſubſtance is extremely proper, when cattle are turned into clover, lucern, or cole-ſeed, to feed: it is well known, that on theſe occaſions they are very apt, unleſs great care is taken, to be ſurfeited, which the ſalt would prevent, and thereby greatly accelerate the fattening of the cattle, and make it much ſafer to the farmer. And the writer concludes by obſerving that lucern, cut green and given to horſes, has the ſame effect upon them as a ſalt-marſh. The lucern at firſt, and for ſeveral days, is in a great degree diuretic to them; after which they thrive upon it ſurpriſingly, and in a very ſhort time they get into high order.

And it is ſtated by Mr. Curtis of Lynn, Norfolk, in the fourth volume of Communications to the Board of Agriculture, that he had a neighbour, who by embankment converted about four hundred acres of ſalt-marſh into a more profitable courſe. After the ſea was excluded from its accuſtomed depredations, the land was immediately ploughed up and ſown with oats, but ſcarcely a ſingle grain was ſeen to vegetate. In the ſame ſummer it was afterwards ſown with cole-ſeed; but here one diſappointment trod on the heels of another, though rather in a leſs degree; particular ſpots here and there produced a very decent crop, but the quantity was inſufficient to defray the expence. In the month of Auguſt following, the whole of it was again ſown with the ſame ſeed. This ſecond crop, in a great meaſure, not only compenſated for the former failures, but was a happy preſage of enſuing profit. In the following autumn, after the crop was reaped, the whole of the land was ſown with wheat, and in the enſuing ſpring, when it might be about four inches high, it was all laid down with graſs-ſeeds; but whether the defect proceeded from the greatneſs of the crop, or from the ſeeds themſelves falling into the interſtices of the graſs of the wheat, which prevented its arrival at the ſoil, cannot now be known; it is only certain that ſcarcely one-fourth of the land proved fit for paſturage. That portion of it was, and continues, extremely fine; but the other has ever ſince been coarſe and unproductive. The proprietor being an old man, with a tolerable ſhare of the characteriſtic obſtinacy of declining life, has ever ſince (a period of about eighteen years) conſigned its produce ſolely to nature's operations. It has conſtantly been fed with ſheep and bullocks, and from the fine and prolific ſtate of that portion that ſucceeded, there is not the ſlighteſt doubt but that the whole might be converted into the beſt of paſture. It has lately become the property of another, who will probably profit by the errors of his predeceſſor. The ſoil is a ſilt; and the graſs-ſeeds with which it was ſown, were a compoſition of hay-ſeeds, cow-graſs, narrow-leafed plantain, and white clover. When land is freſh recovered from the ſea, he conceives (provided flooding is not practicable) that it ought to remain a whole year before it is conſigned to tillage; as it will take that period at leaſt to expel the ſalts ſufficiently for corn to vegetate. He knew a gentleman who ſowed a piece of arable land with turnips, and in the ploughing preceding the ſowing of the ſeed, he dreſſed the land with refuſe ſalt. The conſequence was, that on thirty-ſix acres of land he had not twenty turnips, though the ſame ſeed ſown on the reſt of the farm evinced not the ſmalleſt failure. Some, however, have ſuppoſed the uſe of ſalt as manure favourable to the growth of turnips, as may be ſeen in the preceding article of ſalt. It is probable that too large a quantity was applied at one time.

Theſe ſorts of land have been long celebrated for the power which they poſſeſs in reſtoring ſuch horſes as have been prematurely worn out and reduced by hard labour or improper management. And it has been remarked that horſes often grow fat on the beſt ſalt-marſhes, when they are eaten ſo bare, or burnt up in dry weather, that ſcarcely any graſs is to be ſeen on them. In winter ſome never houſe them, but let them run abroad and take their chance in the open fields, where there are neither trees nor hedges to cover them, and yet they ſeldom or ever ſuffer any thing from the extremity of the weather; nor, unleſs the ground be covered deep with ſnow, do they allow them any dry forage. Yet theſe for the moſt part appear in good condition even in the months of December and January, when they have nothing to feed on but the roots. Beſides all the water they have to drink is for the moſt part brackiſh, which at firſt is not very agreeable to horſes that have not been uſed to it, but afterwards they come to reliſh it as well as any other. The greateſt danger on the marſh grounds is from the deep ditches made to take off the ſpring tides, ſome of which have their bottoms full of a kind of loam engendered by the weed which comes into them in great plenty at high water. And if a horſe that is a ſtranger to theſe grounds happen, in leaping, or in any other way, to ſtep into one of them, he may run the hazard of being loſt unleſs he be diſcovered in time. Horſes, however, have moſtly ſagacity enough to avoid this danger, and that of being waſhed away by ſpring tides.

The writer of the corrected account of the ſtate of the agriculture of the county of Devon remarks, that in all the experience which he has had of the nature and formation, as well as of the mode of embanking or ſecuring, cultivating, and appropriating ſalt-marſh in this country, Ireland, Holland, and America, no inſtance has occurred or come within his knowledge, of any improvement being made on ſuch tracts as conſiſt of a crude, tough, black ſea-mud. This ſubſtance, or compoſition of land, when ripe and ready for embankment, or being ſecured againſt the ſea, is the mildeſt, moſt temperate, and permanently fruitful ſoil of any that prevails; and which, before its embankment or ſecuring, is, or ſhould be, raiſed to nearly, if not quite the height of the ordinary flow of the ſpring tides. The ſea-mud land, on the other hand, is covered every twelve hours with a depth of twelve or fifteen feet of pure, or nearly ſo, ſea-water, and when embanked and ſecured, lies perhaps a little above the line of low-water mark. It is contended, that in proportion as the embankments of land of this ſort from the ſea have been made between theſe points of high and low-water mark, they have anſwered or diſappointed the views of the undertakers or proprietors. It is noticed, that throughout all the ſeven townſhips of marſh-land in the county of Norfolk, the whole of which at different periods have been reſcued from the ſea, the earlieſt embankments, and thoſe in the interior of the diſtrict, are uniformly lower in their general level, and of an inferior quality, to the level of country incloſed by a line of embankments made at a ſubſequent period. In the ſame manner, the later embankments continue on more high plains to the preſent line of ſea-coaſt, where the laſt of any material conſequence that has been made, was accompliſhed by captain Bentinck a few years ago, by the incloſure and ſecuring of a very large tract of perhaps twelve hundred acres. This lies, it is ſaid, upon a higher level than the interior incloſures, and ſoon after its being finiſhed was eſteemed by far the beſt of all.

It is alſo ſtated, that throughout the whole of the embanked marſhes of the counties of Cambridge and Lincoln, a premature incloſure and protection from the ſea has never failed to diſappoint the expectations of thoſe engaged in the enterprize. And near Dublin, had the lots, near the ſituation of the new cuſtom-houſe, been left open, it is ſaid, to the waters of the tide, which are there very turbid, and highly charged with ſediment, from the end of the north ſea-wall towards the ſheds of Clontarff, and the money paid for incloſing mounds and walls been uſed for continuing the north wall in a line nearly parallel to the ſouth one, the waters of the Liffey, thus confined in their deſcent, would have been not only of great uſe in ſcouring out and deepening the channel of that river, for their diſcharge into the bay of the above city, and the removal of obſtructions dangerous and prejudicial to the ſhipping there, but highly beneficial to the navigation and acceſs of the port; and at this time, or perhaps a few years hence, ſuch a depoſition of ſediment have been made by the unreſtrained flowing of the tides over what are now the old incloſed lots, as to have rendered them equally rich and fruitful with ſome of the moſt favoured ſpots in the neighbourhood of that metropolis. The above is given in explanation and for illuſtrating the writer's idea of the difference between ſalt-marſh, ripe and fit for excluſion from the ſea, from that which may be permanently incloſed, and alſo of embankments made with the view of incloſing portions of invincibly ſterile and ſhear ſea-mud, which are ſometimes very improperly formed.

It is further conceived, that the tender hazel-coloured loam, which forms the ſoil of all ſalt-marſh ready for embankment or ſecuring from the ſea, being conſtituted of animal and vegetable exuviæ, combined with the fineſt particles of terrene matter the waters of the tide could hold in ſuſpenſion, can never fail yielding the moſt ample returns from all ſuch tracts reſcued from the ocean. Where an accumulation of ſuch ſoil, as ſometimes happens, is not found of ſufficient extent for embanking, and where it is convenient for removal to the adjacent uplands, no pains, it is thought, ſhould be ſpared in applying it, not only as a valuable alterative to ſuch lands, but from its containing, as before implied, the principle of an immediate and direct manure. In its application great care is adviſed to be taken to caſt aſide, as is the uſual practice at Auze Caſt, all along the coaſt of Norfolk, every ſpit of blue or black ſea-clay that may be met with in its digging, this being conſtantly found ſteadily to reſiſt incorporation with any ſoil to which the hazel-coloured ſalt-marſh ouze is applicable. This ſort of ouze ſhould be ſpread upon the lay-ground, it is ſaid, at from 1000 to 1200 buſhels the acre; and the marſh green ſward or ſpine chopped fine, and left gradually to incorporate with the ſurface-mould for two or three years. In the firſt ploughing of this lay afterwards, it will occur to the intelligent farmer, that this ſurface is not to be turned under at a full pitch; but, on all occaſions, firſt ſkirted or wriſt-balked, and that as fine as poſſible. Should the marſh-ouze be required for ploughed ground, it will be adviſeable to rot its green ſward in heaps, and to pulverize the whole maſs, by turning it once or twice over before it is ſpread upon the broken or fallow ground, at which time it ſhould not be ploughed under, but harrowed in with the ſeed.

In the above diſtrict there ſeem to be ſome thouſands of acres of ſalt-marſh on the coaſts and the banks or ſides of the mouths and other parts of the large rivers which have arrived, by the regular depoſitions of the ſediment of the waters of the tides, at the ſtage of height and accumulation of ſtrength, fertility, and ripeneſs, which fit them for a final excluſion from the ſea. Some of them conſiſt of rich ſoapy loam of the above caſt, and may be ſecured from the ſea with great propriety, and vaſt advantage to individuals as well as the nation at large.

The ſalt-marſhes in the county of Eſſex are likewiſe numerous and extenſive, being ſome time managed under the plough, as well as in the ſtate of graſs. Of late, in ſome parts, a conſiderable portion of them have been brought into tillage. In theſe caſes the practice of exhauſting them before they are returned to the ſtate of graſs, as paſture or grazing ground, ſhould always be carefully avoided; yet in all caſes where rough, old, and uncultivated ſalt-marſhes have been previouſly chalked, they ſhould be kept in occaſional motion by the plough for three or four years, to open and reduce their parts, and then be well laid down for permanent paſture. The ſtate of paſturage is, however, undoubtedly the beſt ſuited to this ſort of land, particularly after it has been properly improved and brought to a good herbage. In this condition it would probably be the moſt profitably employed in grazing ſheep and cattle, if it were not for the want of a conſtant ſupply of wholeſome freſh water, an inconvenience which moſt ſalt-marſhes labour under.

In the ſalt-marſh iſlands of this diſtrict, about two acres and a half of the feeding ſort are commonly allowed for the ſix ſummer months, to the grazing of a runt of thirty ſcore; the ſame marſhes being afterwards cloſely eaten by mixed live-ſtock till after the end of the year, and then ſhut up for ſpring and early ſummer growth.

The cuſtom of alternate mowing and grazing on theſe lands is too often practiſed, but it is bad on uplands and ruinous on marſhes.

The ſalt-marſhes on the banks of the Thames are greatly ſuperior to thoſe in other parts, as they are not allowed to be mown; for it is juſtly ſuppoſed to be very hurtful to ſuch valuable bullock lands.

In ſome places the ſalt-marſhes are ſaid to enrich the uplands, but that the latter impoveriſh the former, as the crops are carried to them and the dung never returned.

There are large tracts of ſalt-marſh in many other counties which have extenſive ſea-coaſts, where the appropriation and management of them is much the ſame. See Fen and Marsh.

Salt-*Marſhes*, or *Salinæ*, for the manufacture of ſalt, are found in ſeveral parts of the world, where ſalt is produced without any art or labour of man. Pliny, Alonſo Barba, Shaw, and other writers, give accounts of large briny lakes, which are evaporated to a perfect dryneſs in ſummer time; when the inhabitants cut and carry away as much ſalt as they have occaſion for. Lakes of this kind are found in the Podolian deſart, near the river Boryſthenes, on the Ruſſian frontiers towards Crim Tartary, in the kingdom of Algiers, and in other countries.

Mr. Maſſon, in his botanical travels from the Cape of Good Hope (Philoſ. Tranſ. vol. lxvi. part i. p. 297.), met with ſuch a lake, called Zwart Kop's Salt-pan, ſeveral miles diſtant from the ſea, and ſituated upon an eminence. In the rainy ſeaſon it is filled with freſh water, which, by the ſaltneſs of the ground, ſoon becomes ſtrongly impregnated with ſaline particles; and when the ſummer's heat exhales the freſh water, the bottom of the lake is covered with a cruſt of pure ſalt, two or three feet thick. The lake is about three miles round, and ſurrounded by a riſing ground.

In thoſe countries, however, where this manufacture of ſalt is not naturally performed, it may be effected by art; and ſalinæ or ſalt-marſhes may be conſtructed for this purpoſe. This is annually done to great advantage in France, where the chief coaſts for bay-ſalt are thoſe of Bretagne, Saintonge, and the Pays d'Aunis.

In order to make a ſaline or ſalt-marſh, a low plat of ground muſt be choſen adjoining to the ſea, and diſtant from the mouths of large rivers, and this muſt be near ſome convenient harbour for veſſels. The ground muſt be free from freſh-water ſprings, and out of the reach of land floods, and, if poſſible, ſhould have a clayey bottom; and, finally, it muſt be well defended from the ſea, either by natural or artificial banks of earth of a proper ſtrength and thickneſs.

The ground thus choſen muſt be hollowed out to three ponds or receptacles. The firſt, into which the ſea-water is uſually admitted, may be called the reſervoir; the ſecond receptacle, which is to be divided into three diſtinct ponds, communicating with each other by narrow paſſages, and containing brine of different degrees of ſtrength, may be called the brine-ponds; and the third receptacle is to be furniſhed with an entrance, between which and the brine-ponds there is to run a long, narrow, and winding channel. The reſt of it is to be divided into ſmall and ſhallow pits, containing a very ſtrongly ſaturated brine, which in them is to be converted into ſalt; and they may, therefore, very properly be called the ſalt-pits.

The firſt receptacle or reſervoir muſt have a communication with the ſea by a ditch, defended on each ſide by walls of brick or ſtone, and made of ſuch a depth, that by it all the water of the reſervoir and other parts of the ſalt-marſhes may be able to run out at low water, and by it alſo the ſea may be admitted into it at high tide. So that at neap tides, the marſh may be filled with ſea-water to the depth of ten inches in the reſervoir; and, conſequently, at higher tides, to the depth of two feet, when there is occaſion to overflow the marſh, as is always to be done in the winter ſeaſon, when there is no ſalt to be made; for by this means, the wood-work is kept from decay, and the clay bottom from injuries by froſt. The ditch between the reſervoir and ſea muſt have a flood-gate, by which the ſea-water may be admitted, retained, or let out, as occaſion may require.

The ſeveral ponds or receptacles muſt not have all their bottoms upon the ſame level, but muſt be made of unequal depths, ſo that the firſt receptacle or reſervoir may be eight inches and a half deeper than the ſalt-pits in the third receptacle. The three brine-ponds alſo ſituated between the reſervoir and the ſalt-pits muſt be of unequal depths. The next adjoining to the reſervoir muſt be the deepeſt, and that which is the nigheſt the ſalt-pits the ſhalloweſt, but all of them muſt be ſhallower than the reſervoir; and the three receptacles being thus conſtructed, the water ſtanding at the ſame height in them all, and forming with its ſurface one continued plain, will be ten inches deep in the reſervoir, when only an inch and a half in the ſalt-pits.

The length and breadth of the brine-ponds and reſervoirs are to be at diſcretion; but it is beſt to err in making them too large; and in general they ought to be ſo large, as to furniſh the ſalt-pits with a conſtant ſupply of brine, fully ſaturated with ſalt; and for this purpoſe, it is neceſſary to have them of different dimenſions, in different countries, according to the degree of heat.

The bottoms of the reſervoir or brine-ponds are to be lined with any kind of lean and tough clay, or earth, that will hold water; and the French uſe a red, or blue clay, to be had in the neighbouring grounds. With them the blue always ſucceeds better than the red, which colours the ſalt much more; but in order to have a perfectly pure ſalt from this kind of manufacture, the bottom ſhould be lined with ſome clean cement, which will hold water perfectly, and will not be eaſily broken up.

The ſaline or marſh being thus conſtructed, the ſaltmen, at the proper ſeaſon of the year, which is from the middle of May to the end of Auguſt, open the flood-gate when the tide is out, and drain off all the ſtagnating water. When this is done, they repair the bottom of the marſh in ſeveral places, where it is found neceſſary, and cleanſe the ſeveral receptacles from mud and dirt: after this they admit the ſea-water at the next high tide, till it floats the whole marſh, and ſtands at about ten inches high in the reſervoir. In a day or two moſt of the water in the ſalt-pits is exhaled, and what remains is a very ſtrong brine: they then let in more ſea-water at the two or three following tides; and ſo take care to admit as much freſh water into the marſh, as has been waſted in vapour by the heat, conſtantly raiſing it to the height of ten inches in the reſervoir, and conſtantly to an inch and half in the ſalt-pits; and when the weather is extremely hot, or there are ſharp drying winds, they fill them ſomething higher than this.

All the parts of the marſh are thus ſupplied with water out of the reſervoir; but the ſea-water which is let into the reſervoir, is not confuſedly let into the other water or brine of the ponds and ſalt-pits; for as the ſeveral parts of the work communicate only by narrow channels, it is provided, that the ſalt-water flowing out of the reſervoir never returns to it again, but gently flows along till it arrives at the ſecond brine-pond, and from that to the third, being forced forward by the ſea-water received from time to time in the reſervoir. During this ſlow courſe, the watery fluid always flies off in great quantity by exhalation, and the brine is continually preparing for cryſtallization as it flows along gently, becoming all the way ſtronger and ſtronger, as it approaches the ſalt-pits; ſo that when it at length enters theſe pits, it is fully ſaturated with ſalt; and particular care is taken to guard the entrance of the ſalt-pits by a long and narrow channel, by which means the ſtrong brine contained in theſe pits is prevented from returning back, and mixing with the weaker brine in the brine-ponds: care is alſo taken, that the ſtrong brine in the ſalt-pits is ſpread out very thin, and expoſed to the ſun and air with a large ſurface, by which means the water more quickly exhales from it, and the ſalt is left concreted in the cryſtals. Theſe cryſtals, or ſalt, the workmen in France draw out every day; and diſpoſe them at length together in a pyramidal heap, which they cover over at the top with thatch or ſtraw, and ſo preſerve them from the injuries of weather. Thus at a ſmall expence and trouble a ſalt is prepared, which is found very fit for all domeſtic uſes; and France is furniſhed with a very profitable article for exportation into other countries.

The ſalt thus made is of different colours, according to the colour of the clay employed in making the pits. That of the French is brown, whence the denomination of *bay*-ſalt, and it is uſually ſold without farther preparation; though in ſome places they make it into *white* ſalt, by refining it in large flat cauldrons. In a favourable ſeaſon, the French are ſaid to be able to make enough of bay-ſalt in a fortnight, to ſupply their home conſumption for a year, and the wants of other nations, who purchaſe from them much more than is conſumed in France. The greateſt difficulty which attends the making of bay-ſalt in Great Britain, ariſes from the heat of our ſummer not being ſufficiently ſtrong to evaporate a great quantity of ſea-water in a ſmall portion of time. But Dr. Brownrigg has ſufficiently evinced the practicability of our imitating the French in their manner of procuring bay-ſalt. It is well known, that in Hampſhire, and ſome other counties, they have a method of heightening the ſea-water into a ſtrong brine, by expoſing it to the ſun in large pits, much after the manner in which bay-ſalt is made; and ſo much of the ſea-water is, by this means, naturally evaporated, that though they boil the remainder with Newcaſtle coal, yet they can afford their ſalt at a leſs price than the Newcaſtle ſalt-boilers can afford theirs; though the ſea-water is, probably, equally impregnated with ſalt at both places.

SALT-*Marſh Ouze*, the rich ouzy browniſh earthy matter, which forms the ſurface of ſalt-marſh lands, in ſome caſes. See the article SALT-*Marſh*.

SALT-*Water*, that which naturally contains this ſubſtance, the effects of which on land have not yet been aſcertained in any very ſatisfactory manner. It would ſeem, however, that where it runs over, or remains only a ſhort time upon it, that great benefit is afforded; but where it ſtagnates, or reſts upon it for a length of time, great injury and miſchief are often done by it. It is ſtated in the Eſſex corrected Report on Agriculture, that if ſalt-water be on the land only a few hours, its utility is conſiderable, and that it is the continuance only that is hurtful. The writer has had land under ſalt-water twenty-four hours at leaſt, which, after one fallow, would bear a crop, and in the third year appeared benefited by it. On a piece of wheat-land the water remained about two hours in January: the crop was eleven coombs the acre, landlord's meaſure. It effectually deſtroys all the inſects in the land.

SALT *Creek*, in *Geography*, a river of Mexico, in Yucatan, which runs into the bay of Honduras, N. lat. 18° 10'. W. long. 89° 24'.

SALT *Iſland*, one of the ſmaller Virgin iſlands, weſt of Cooper's iſland. N. lat. 18° 5'. W. long. 64° 6'.

SALT *Iſland, Little*, an iſland near the ſouth coaſt of Jamaica, one mile north of "Great Salt Iſland," in N. lat. 17° 50'. W. long. 76° 57'.

SALT *Key*, a ſmall iſland in the Weſt Indies. N. lat. 21° 30'. W. long. 71° 3'.

SALT *Lake*. See ONONDAGO.

SALT *Lick*, a town of North Carolina; 15 miles S.E. of Cayahoga.

SALT-*Lick Town*, a town of America, in Pennſylvania; 70 miles N.N.E. of Pittſburg.

SALT *River*, a river of Kentucky, which runs into the Ohio, five miles N.E. of Ohichiawingo. It is formed by three principal branches, and diſcharges itſelf into the Ohio through the ſouth-eaſt bank, by a wide mouth, 20 miles below the Rapids. It is navigable for boats about 60 miles. The land on its head-waters is good, but low and unhealthy; and for 25 miles from its mouth, on each ſide, it is level and poor, and abounds with ponds. Between Salt and Green rivers there are two ſprings of bitumen, which, when analyſed, is found to be amber.—Alſo, a river of Jamaica, which runs into the ſea, oppoſite to Great Salt Iſland.—Alſo, an arm of the ſea, which divides Guadaloupe into two parts, and communicates with the ſea on both ſides of the iſland, two leagues long and fifteen paces broad, with a dangerous navigation even for ſmall veſſels, none being admiſſible above 25 tons.—Alſo, a river of Louiſiana, which runs into the Miſſiſippi, N. lat. 37° 34'. W. long. 90° 44'.

SALT *Sea*. See ASPHALTITE *Lake* and DEAD *Sea*.

SALT *Spring River*, a river of the Indiana territory, which riſes near the eaſt line of the New Jerſey Company's lands, and runs ſouth-eaſt into the Ohio river, ten miles below the mouth of the Wabaſh, after a courſe of 56 miles. The ſalt-ſpring which gives it name is ten miles from its mouth.

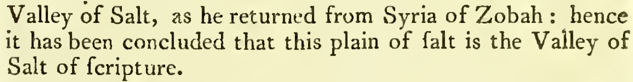
SALT *Town*, a town of Africa, in the country of Calabar, ſo called from the ſalt manufacture which employs its inhabitants.

SALT, *Valley of*, a valley of Syria, which produces ſalt. In the winter it is ſaid to be a lake, but in ſummer the ſun evaporates the water, and leaves beds of dry ſalt, about an inch thick, which is refined for uſe; 18 miles E. of Aleppo. Dr. Halifax, in his account of Palmyra, mentions a large plain covered with ſalt, which ſupplies the adjacent country. This plain is about a league from Palmyra, and extends towards the eaſtern parts of Idumea, whoſe capital city was formerly Bozra. David defeated the Idumeans in the Valley of Salt, as he returned from Syria of Zobah: hence it has been concluded that this plain of ſalt is the Valley of Salt of ſcripture.

SALTA, a town of Arabia, in the province of Hedsjas; 25 miles S. of Serrain.—Alſo, a town of South America, in the province of Tucuman, ſituated on a ſmall river, which ſoon after paſſing the town falls into a lake. The town is inhabited chiefly by Spaniards, and contains about four hundred houſes, two churches, and four monaſteries. It has no walls, nor ditch, nor any other defence againſt the hoſtilities of the Indians, with whom the inhabitants have frequent wars, and who, from this circumſtance, are all expert ſoldiers. Of theſe about 500 bear arms, and ſlaves of the ſame deſcription are about twice that number. Salta is a conſiderable mart of commerce for corn, meal, wine, cattle, ſalt meat, fat, hides, and other commodities, which are ſent from this place to moſt parts of Peru; 50 miles S. of St. Salvador. S. lat. 24° 40'. W. long. 66° 30'.

SALTAIM, a lake of Ruſſia, in the government of Tobolſk, 48 miles in circumference. N. lat. 56°. E. long. 66° 30'.

SALTARELLA, or SALTARELLO, in the *Italian Muſic*, is applied to triple time, the firſt note of which is pointed thus:



Airs in this kind of movement are ſaid to be in ſaltarello. Such are the Venetian orlanos, ſicilianas, ſome jigs, and other gay dances.

SALTASH, in *Geography*, a borough and market-town in the pariſh of St. Stephen's, ſouth diviſion of the hundred of Eaſt, and county of Cornwall, England, is ſituated at the diſtance of 21 miles S.S.E. from Launceſton, and 220 miles W.S.W. from London. It is a town of conſiderable antiquity, and was originally denominated Eſſe or Aſsheburgh. Reginald de Valletort, lord of the manor of Trematon, firſt obtained for it the privileges of a free borough, either in the reign of king John, or in that of his ſucceſſor, king Henry III. The ſame individual likewiſe confirmed to the inhabitants the rights and immunities which had been conferred upon them by his predeceſſors. Richard II. executed a charter confirming all theſe privileges; and under that deed the town was governed till the year 1682, when king Charles II. granted the burgeſſes a new charter, in which the corporation was declared to conſiſt of a mayor and ſix aldermen, ſtyled the council of the borough, who were empowered to nominate a recorder. The laſt charter bears date the 7th of June, 1774, and is ſimilar in principle to the former one, but the crown reſerves to itſelf the right of diſplacing any member of the body-corporate at pleaſure. Saltaſh ſends two repreſentatives to parliament, and has done ſo regularly ſince the reign of Edward VI. The elective franchiſe is veſted in the mayor, aldermen, and the holders of burgage tenements, who are computed at about 120 in number. Several names of eminence occur in the liſt of repreſentatives for this borough, as ſir Francis, afterwards lord Cottington; Edward Hyde, afterwards earl of Clarendon; and Edmund Waller, the celebrated poet.

Saltaſh is mentioned by Leland "as a praty quik market toun;" and Norden ſays of it, that it "increaſeth daily in merchandiſe and wealth; there belong unto the towne ſome 8 ſhips, beſydes ſmall boates. The haven is capable of anie burden. The great Carrack, that ſir Francis Drake broughte home ſo rich, arrived here, and was here diſburdened, and after fatally fyred." Being an important ſtation, as one of the principal paſſes into Cornwall, this town was frequently the ſubject of conteſt during the civil wars. It was firſt garriſoned for the parliament, but was ſurrendered, without oppoſition, to ſir Ralph Hopton, in the autumn of 1642. General Ruthen, finding it open after his defeat at Bradock Down, in January 1643, took poſſeſſion of it, and haſtily raiſed fortifications; but it was ſoon afterwards taken by aſſault, by the royaliſts under lord Mohun, who left a garriſon in it, which was in turn compelled to ſurrender to the earl of Eſſex in July 1644. On this occaſion ſir Edward Waldegrave defended the paſs with great gallantry, and, as it appears, with temporary ſucceſs. Saltaſh again fell into the hands of the royaliſts, commanded by ſir Richard Grenville; but only a few months afterwards it was recovered to the parliament by a detachment from the garriſon at Plymouth. Sir Richard, however, once more obtained poſſeſſion of it by aſſault, and held it till February 1646, when it was finally abandoned by the king's troops.

The town of Saltaſh is ſituated on the declivity of a ſteep hill, near the weſtern bank of the Tamar, and conſiſts chiefly of three ſtreets, the principal one of which runs at right angles with the river. The houſes are built of ſtone, quarried from the rock on which they ſtand, and riſe one above another, in quick aſcent, to the ſummit of the hill, where are ſituated the chapel and the mayoralty-hall. The latter was erected about forty years ago, and is ſupported upon pillars; the open ſpace within being appropriated for the accommodation of the market-people. The market is held on Saturday; but the burgeſſes likewiſe claim the right of holding another on Tueſday; and there are beſides two annual fairs, on the 2d of February, and the 25th of July. The tolls of the markets and fairs belong to the corporation, who hold alſo the manor of the burgh of Aſheburgh under the duchy, and are entitled to a ferry over the Tamar, the privilege of dredging for oyſters, and certain duties payable by maſters of ſhips; which altogether produce an annual revenue of at leaſt 300*l.* Here are meeting-houſes for Baptiſts and Weſleyan Methodiſts; alſo a free-ſchool, ſaid to have been founded by queen Elizabeth. According to the late parliamentary returns, the borough of Saltaſh contains 198 houſes and 1478 inhabitants, moſt of whom are engaged in the fiſheries.

About a mile ſouth-weſt from the town ſtands the village of St. Stephen's, which gives name to the pariſh in which Saltaſh is included. The church is a ſpacious ſtructure, conſiſting of a body and two aiſles, with a lofty tower at its weſtern extremity. In the interior are ſeveral monuments to the memory of the Butlers of Shillingham. Some centuries ago, a leaden coffin was dug up here, which appeared, from the inſcription on the lid, to have belonged to a ſon of one of the dukes of Cornwall. At the entrance of the church-yard is a ſtone-bearer, called a leach-ſtone, upon which bodies are reſted when brought hither for interment: its ſhape reſembles that of a coffin. On the ſummit of an eminence, adjoining St. Stephen's on the weſt, are the ruins of that once formidable fortreſs Trematon-caſtle. The original edifice was built previous to the conqueſt, and conſtituted the head of a barony belonging to the ancient dukes of Cornwall. The Conqueror gave it to his half-brother, Robert earl of Moreton and Cornwall, on the attainder of whoſe ſon and ſucceſſor, William, it reverted to the crown, and was reſtored, along with the earldom of Cornwall, to Cadoc, a Britiſh prince. His daughter and heireſs conveyed it by marriage to Reginald Fitz-Henry, and their daughter to Walter de Dunſtanville, whoſe iſſue male failing, it went by marriage to Reginald de Valletort, and was afterwards united to the duchy of Cornwall. It is, therefore, now the property of the prince of Wales, who has a court held here twice a-year, for receiving rents, and for other purpoſes. The remains of this caſtle are ſtill very conſiderable, and when viewed from the eaſt have an aſpect of great boldneſs and grandeur. The area incloſed by the walls, which meaſure about ſix feet in thickneſs, is nearly circular, and contains ſomewhat more than an acre of ground. The walls are embattled, and are ſecured exteriorly by a broad and deep ditch, which ſurrounds the whole fortreſs, except at the gateway. The laſt conſiſts of a maſſive ſquare tower, with an entrance way beneath, leading into the court. This caſtle commands a fine proſpect of the Hamoaze, Dock, mount Edgecumbe, and Maker heights. A branch of the Lynher creek flows near the foot of the hill on which it is ſituated. On another branch of the ſame creek ſtands Anthony houſe, a ſeat of the family of Carew. It is chiefly remarkable as the birth-place of Richard Carew, eſq. author of the Survey of Cornwall, publiſhed in 1602, which is eſteemed one of the beſt early county hiſtories extant. Lyſons's Magna Britannia, Cornwall, 4to. 1814. Beauties of England and Wales, vol. ii. by John Britton and E. W. Brayley, 8vo. 1801. Polwhele's Hiſtory and Antiquities of Cornwall, 4to.

SALTASH, a townſhip of America, in Windſor county, Vermont; now *Plymouth*, which ſee.

SALTATIO, in the *Ancient Pantomime* and *Dance*. The Greeks called *orcheſis* what the Romans termed *ſaltatio*. The ancients ſometimes call it *chiromania*, rules for the hands. It conſiſted in the imitation of all the geſtures and natural movements of man. Varro tells us (Iſidor. lib. 18. cap. 50.) that the word *ſaltatio* is not derived from *ſaltus*, which ſignifies a leap, but from the Arcadian *Salius*, who firſt taught the art to the Romans. We muſt not then, as is generally done, confound dancing with leaping and jumping; and it ſhould be remembered, that the true dance of the ancients was an imitation of the actions and attitudes of the body, the geſtures and all the demonſtrations with which men uſually accompany their diſcourſe, or which are uſed to explain their ſentiments, without the help of words. See DANCE and PANTOMIME.

Among the capital pictures dug out of Herculaneum, are portraits of Apollo and the nine muſes, his companions, from which engravings have been publiſhed in the ſecond volume of "Le Pitturi Antichi d'Ercolano;" and the ſeventh muſe, Polhymnia, is called the Fabuliſt; ΠΟΛΥΜΝΙΑ ΜΥΘΟΥϹ. She is there repreſented as the patroneſs of mimes, with her finger on her mouth, in token of ſilence. The painter differs in characteriſing this muſe from moſt of the poets and mythologiſts, who make her the inventreſs of hymns to the gods. However, there are etymologiſts, among whom are Plutarch and Nonnus, who derive her name from Μνημη, *tradition*, alluding to the fables and tales of antiquity, which the mimes and dancers uſually made the ſubjects of their performance. Nonnus Dionyſ. v. 5. 104, et ſeq. ſays,

> " Sweet Polhymnia, ſee advance,
> Mother of the graceful dance:
> She who taught th' ingenious art,
> Silent language to impart:
> Signs for ſentiment ſhe found,
> Eloquence without a ſound:
> Hands loquacious ſave her lungs,
> All her limbs are ſpeaking tongues."

SALTCOATS, in *Geography*, a conſiderable ſea-port town, partly in the pariſh of Ardroſſan, and partly in that of Stevenſton, county of Ayr, Scotland, is ſituated on the eaſtern coaſt of the Frith of Clyde, at the diſtance of five miles N.W. from the town of Irvine, and about 63 miles W.S.W. from the city of Edinburgh. This place may be juſtly ſaid to have owed its origin to Robert Cuningham, eſq. of Auchinbarrie, who became proprietor of the whole pariſh of Stevenſton towards the cloſe of the ſixteenth century. Aware of the advantages to be derived to the country from raiſing an abundant ſupply of coal, and ſenſible that his eſtate contained great ſtores of that valuable mineral, he ſunk pits in various places, and made numerous experiments to aſcertain the declivity, thickneſs, and qualities of the different ſeams. He likewiſe conſtructed the harbour and ſalt-pans of Saltcoats, which yet remain, with ſome trifling alterations, monuments of his public ſpirit and enterpriſe. While he thus laid the foundation of the future proſperity of this town, however, the expence of his undertakings injured his own fortune ſo much, that he was compelled to ſell a conſiderable part of his eſtate, reſerving to himſelf the track neareſt to Saltcoats. After his death the collieries continued to be wrought with great caution, and only moderate ſucceſs, till about 30 years ago, when the exertions of his great grandſon gave a new and efficient ſtimulus to the coal buſineſs. This gentleman, in conjunction with Mr. Warner, a neighbouring proprietor, opened ſeveral new mines, and to facilitate the conveyance of their produce, cut canals from them to Saltcoats, which has ever ſince been increaſing in population and extent. The harbour being peculiarly advantageous for launching, the inhabitants, in the time of the American war, began the trade of ſhip-building, which ſtill continues to flouriſh. Rope and ſail-cloth manufactories were eſtabliſhed during the ſame period, alſo a diſtillery and brewery, all of which are yet in exiſtence. The principal exports are coal, ſalt, herrings, and a few bales of Paiſley ſilk and cotton goods. The imports are timber, iron, hemp, colonial produce, and various other minor articles of neceſſity and luxury. There are no magiſtrates, nor any local police, in Saltcoats; only one annual fair; no market-place or weekly markets, and no tonnage paid by the veſſels. A ſhore-bailiff levies the ſmall anchorage dues, and carries into execution ſuch regulations as are neceſſary for the loading and ſailing of the veſſels; which regulations the owners or maſters come under a written obligation to ſubmit to. The earl of Eglinton is proprietor, and receives rent for all the houſes on the Ardroſſan ſide, built by the poſſeſſors on longer or ſhorter leaſes. His lordſhip is alſo ſuperior of the Stevenſton ſide of the town, nearly the whole of the houſes paying a ſmall feu duty. Here is a Relief meeting-houſe, erected about 20 years ago, alſo places of public worſhip for burghers and antiburghers.

According to the parliamentary returns of 1811, the pariſhes of Ardroſſan and Stevenſton contained 782 houſes and 5437 inhabitants, of whom above 2000 are ſuppoſed to reſide in Saltcoats. Sinclair's Statiſtical Account of Scotland, vol. vii. 8vo. 1793. Carliſle's Topographical Dictionary of Scotland, 4to. 1813.

SALTEES, two iſlands in the Iriſh channel, near the S. coaſt of the county of Wexford, Ireland. They are not only remarkable objects to guide the navigator, but afford him an occaſional ſtopping place, as veſſels may ſafely lie there in moderate weather. Theſe iſlands are connected with the main by a ledge of rocks already deſcribed. See ST. *Patrick's Bridge*.

SALTEN, a town of Norway, in the province of Drontheim; 260 miles N. of Drontheim.

SALTERNS. Small brine ſalt-works had formerly this name applied to them. See SALT and SALT-*Brine Springs*.

SALTFLEET, in *Geography*, a market-town and ſea-port in the pariſh of Skidbrook, Marſh diviſion of the hundred of Louth Eſke, parts of Lindſey, and county of Lincoln, England, is ſituated on the coaſt of the Northern ocean, about ſeven miles S. from the mouth of the Humber, and 165 N. by E. from London. It is a place of no importance, but the haven formed by the river which flows into the ſea cloſe to it, is conſidered as a uſeful and ſafe refuge for coaſting veſſels in boiſterous weather. The market day is Saturday, weekly; and there is an annual fair on the 3d of October.

According to the population cenſus of 1811, the pariſh of Skidbrook, with Saltfleet haven, contained 65 houſes, and 355 inhabitants.

SALTHOLM, a ſmall iſland of Denmark, near the coaſt of Zealand, in the Sound, where the inhabitants of the iſland of Amack paſture ſome cattle; five miles S.E. of Copenhagen. N. lat. 55° 58′. E. long. 12° 46′.

SALTHOLMEN, an iſland of Denmark, in the Baltic, near the coaſt of Zealand, being a narrow ſtrip of land about three miles in length. N. lat. 54° 39′. E. long. 11° 23′.

SALTIER, SALTEER, or *Saltire*, in *Heraldry*, an honourable ordinary, in form of St. Andrew's croſs; anciently called the *croſs of Burgundy*.

The ſaltier may be ſaid to be compoſed of a bend dexter and ſiniſter, croſſing each other in the centre of the eſcutcheon.

Its ordinary breadth, when alone, is one-fifth of the field; but if charged one-third.

It is ſometimes borne alaiſé, and ſometimes in number, placed in different parts of the field; ſometimes charged, countercharged with the field, accompanied, raguled, engrailed, indented, quarterly-quartered, &c.

The ſaltier was entirely a piece of the knight's harneſs; being faſtened to the ſaddle, and ſerving him for a ſtirrup to mount upon; and hence it had its name *ſaltier*, by the French *ſautoir*, from *ſauter*, *to leap*. It was made of ſilk cord, or ſome other kind of cord, covered with ſome rich ſtuff.

Others will have it, that the original ſaltier was a kind of paliſade, ſerving to fence parks, woods, &c. where wild beaſts were incloſed. Though Spelman ſays, it was an inſtrument for the taking of them, thus called, *quod ſit in uſu in ſaltu*.

Laſtly, others aſſure us, that ſaltier was anciently the figure of an engine, which being full of pins, was uſed in the ſcaling of the walls of a beſieged place; whence its origin from *ſauter*, as it helped the ſoldiers to leap over the wall.

SALTING Cheese, the method of applying ſalt to it. See Dairying.

Salting *Fiſh*, *&c.* *Refuſe of*, in *Agriculture*, the various ſorts of materials which are the waſte of fiſh of different kinds in curing them and other ways. Theſe all form uſeful manures in different intentions as well as thoſe which are the waſte of them in their freſh ſtate; and they are both of them employed extenſively as manure in different maritime diſtricts where they can be had at a ſufficiently cheap rate, and in ſufficient quantities.

The refuſe compound ſaline ſubſtance thrown aſide in the curing of herrings or pilchards, when no longer uſeful, is beneficially applied for barley and turnip crops in the county of Cornwall, and ſome other places; twenty to thirty buſhels being uſed upon the acre, ſown over the land by means of the hand, and remaining five or ſix days on it before the ſeed is put in. It is thought by the writer of the agricultural report of that diſtrict that it is moſt ſuited to light lands, eſpecially thoſe of the furze-croft kind. Twenty buſhels to the acre of the ſame material have likewiſe been ſtrewed over graſs lands, and over a wheat crop, in the early ſpring with evident advantage. But the ſubſtance is now become nearly double its former price, which greatly prevents its uſe. Sir Humphrey Davy ſtates that refuſe pilchards are uſed throughout the whole of the above county as a manure with the beſt effects, being uſually mixed with ſand or ſoil, and occaſionally with ſea-weed, to prevent their raiſing too luxuriant a crop. The effects are ſaid to be perceived for ſeveral years afterwards.

The liquor which drains from theſe fiſh, while under the proceſs of being cured, conſiſting of the bloody, briny, and oily matters that eſcape from them, and are caught in pits, is alſo carted away in caſks by the farmer in order to be poured over and mixed with his piles of earth and ſand that are to be employed as manure, which, it is ſaid, to greatly enrich and render more uſeful.

The farmers near the fiſhing towns in the ſame diſtrict likewiſe buy the refuſe of bruiſed and ſmall pilchards, which are rejected as unfit for curing or the market, and are called *caff*, four cart-loads of twelve buſhels each being conſidered as the quantity proper for an acre. The uſual method of proceeding is to incorporate theſe *caff* with a pile of earth in ſuch a manner and to ſuch a depth, as to ſecure them from dogs or other animals, blending with the heap or pile a ſufficient quantity of ſand, mixing the whole well together by turning after they have lain ſome months. Without this practice, the refuſe fiſh, it is ſuppoſed, would not decay ſufficiently for a conſiderable length of time. But theſe refuſe fiſh are ſometimes employed alone. They are then ſpread thinly over the ground before the plough, and turned in under furrow. One of the refuſe fiſh, when reduced ſmall, may, it is imagined, dreſs a foot ſquare of land in an ample manner. The butt-load formerly coſt about 9*s.* or 10*s.* but they now fetch 15*s.* or 20*s.* the load. The refuſe bruiſed fiſh immediately from the cellar doors, are, it is ſaid, conſidered as infinitely preferable to the refuſe of the ſalted fiſh, in the intention of manure.

Refuſe herrings are recorded even to have been ſpread over a field, and ploughed in for a crop of wheat, which rendered it ſo rank, that it was wholly laid before the time of cutting it.

There are little fiſhes uſeleſs as food, of ſeveral different kinds, that are collected in large quantities in ſmall ſhallow waters, which form a great ſource of manure in ſome diſtricts of the fen and marſh kind, and are very beneficial. Such are *ſticklebacks*.

In ſome ſea-coaſt diſtricts, where refuſe muſcles abound, they are ſometimes made uſe of as manure for land, being applied at the rate of about ten ſingle horſe cart-loads to the acre in their ſimple ſtate, when they have juſt taken on the putrefactive proceſs, and in mixture with mould or earthy ſubſtances. They are ſet on the ground for all ſorts of crops, even for thoſe of the potatoe kind, and aſſerted to afford very productive returns; but are conſidered as exhauſting in a high degree, and leaving the ſoil diſpoſed to the throwing up of weeds. When applied for wheat after a naked fallow they are commonly laid on in the ſtate of compoſt with earthy matters, and occaſionally a little dung. They are, perhaps, always the beſt applied in the way of this ſort of compoſt. Whenever they are made uſe of in their ſimple ſtate, they ſhould be immediately ſpread out and turned into the ſoil in a light manner. When put upon graſs land for the purpoſe of paſture, the effect has not been great in the increaſe of graſs. They are, however, a highly forcing manure for one crop. Other fiſhy refuſe matters, where they are in ſufficient quantity, may likewiſe be found beneficial in the way of manure, and ſhould never be neglected.

On the whole, the author of the "Elements of Agricultural Chemiſtry," thinks that fiſh and fiſhy matter, in whatever way they are applied, conſtitute a powerful manure, and that the former cannot be ploughed in too freſh, though the quantity ſhould be limited.

The action of refuſe fiſh as a manure is explained on the principle of the ſkinny portion chiefly containing gelatine, which is readily ſoluble in water from the ſlight coheſion of its parts, and from the fatty, oily ſubſtance contained in other parts of them, as well as from their fibrous matter, compriſing all the eſſential elements of vegetable ſubſtances. The oily ſubſtances of the nature of blubber are moſt uſeful in mixture with clay, ſand, or any common earth, ſo that a large ſurface may be expoſed to the air, the oxygen of which produces ſoluble matter from it. It has had great fertilizing powers when applied in this way for ſeveral years in ſucceſſion. It is ſuppoſed that the carbon and hydrogen which is abundant in oily matters, accounts fully for their effects, and that their durability is explained on the principle of their gradual change by the action of the air and water upon them.

Salting-*Houſe*, the place in which cheeſe or any other ſubſtances are ſalted. See Dairy.

Salting-*Boxes*, in *Artillery*, are boxes for holding mealed powder, to ſprinkle the fuzes of ſhells, that they may take fire from the blaſt of the powder in the chamber; but as the fuze takes fire without this operation with mealed powder, ſalting-boxes are become almoſt uſeleſs.

SALTINGS, ſuch ſalt-marſh lands as are not embanked or ſecured from the ſea, but over which the tides flow. In ſome diſtricts the lands of this ſort are of very conſiderable extents, and moſtly of high value. In the county of Eſſex there are many tracts of this ſort of land forming, and ſome ready to be ſecured; and much has there likewiſe already been done in this way with great individual, local, and national benefit. The ſame is the caſe with ſeveral ſea-coaſt diſtricts in the ſouthern, as well as the northern parts of the iſland; alſo in thoſe towards the eaſt and the weſt.

In ſpeaking of the embankments in the hundred of Dengy, in the above county, by which ſo much land of this nature has of late been gained from the ſea on that coaſt; it is remarked that, in time paſt, it made great depredations there. There is a ſand called Buxey park, and old ſeamen now living have heard their grandfathers ſay when they were boys, that this park was covered with trees; and it is aſſerted that the foundations of houſes have been ſeen there. Alſo at St. Peter's chapel, at Bradwell, in the ſame diſtrict, the ſea gained much in former times, as the remains of buildings are ſaid to be ſtill viſible on the ſands at low tides.

Many curious facts and circumſtances of the ſame kind, in regard to the encroachments of the ſea in other diſtricts, have likewiſe been noticed by writers. See EMBANKMENT and SALT-*Marſh*.

SALTKETCHERS, in *Geography*, a town of America, in South Carolina; 35 miles W. of Dorcheſter.—Alſo, a river of South Carolina, which changes its name to Cambahee.

SALTNESS, SALSEDO, the quality of ſomething that is impregnated with ſalt; or that yields a ſaline taſte.

The ſaltneſs of the ſea, lakes, &c. has been long a ſubject which has perplexed philoſophers.

Kircher, after having conſulted thirty-three authors upon the ſubject, remarks, that the fluctuations of the ocean itſelf are ſcarcely more various than the opinions of men concerning the origin of its ſaline impregnation.

Some, with Ariſtotle (lib. ii. cap. 7. Meteor.) have even taken it to be the effect of the dry, aduſt, and even ſaline exhalations, which the ſun raiſes from the earth, and the winds, and which rains diſcharge into the ſea; and hence, ſay they, it is that the ſea is found more brackiſh near the ſurface than towards the bottom.

Others contend, that the ſun being continually extracting the pureſt and ſubtileſt parts from the water; the coarſer parts remaining, being exalted and concocted by this heat, acquire, by little and little, their degree of ſaltneſs.

Others, as father Bouhours and Nollet, will have it, that the Creator gave the waters of the ocean their ſaltneſs at the beginning, not only to prevent their corruption, but alſo to enable them to bear greater burdens. This opinion was advanced by Bernardine Gomeſius, about two hundred years ago, in an ingenious treatiſe upon ſalt. Gomeſ. de Sale, lib. i. cap. 24.

Bernier ſeems to be nearer the matter, when he aſcribes the ſaltneſs of the ocean to the foſſile or mineral ſalts brought into it by ſubterranean currents, and diſſolved in the water.

The count de Marſigli obſerves, that, in Provence, the bottom of the ſea is wholly ſtony, and is nothing but a continuation of the mountains of the Cevennes; being even found to conſiſt of ſeveral ſtrata; among which are ſalt and pit-coal; and hence he derives the ſaltneſs and bitterneſs of the ſea-water.

Thoſe who have adopted this opinion, and who aſcribe the ſaltneſs of the ſea to thoſe beds of rock-ſalt, which they ſuppoſe to be ſituated at its bottom, obſerve, that without ſuch a permanent ſaline principle, the ſea would long ſince have become inſipid from the freſh water poured into it by an infinity of rivers. But upon this hypotheſis it may reaſonably be inquired, why the waters of the ocean are not perfectly ſaturated with ſalt, if they have ever ſince the creation been exerting their diſſolving powers upon ſuch permanent maſſes of rock-ſalt as are thought to be ſituated at the bottom. Beſides, the patrons of this opinion found their reaſoning upon a miſtake, when they allege that, if there were no mines of rock-ſalt in the bed of the ocean, its waters would have been long ago converted into freſh waters by the rivers diſcharged into it; for ſuppoſing that the rivers themſelves contained no ſalt, and that they returned into the ſea, in any given time, the ſame quantity of water, which, in the ſame time, is raiſed from it by evaporation, the ſaltneſs would remain preciſely the ſame for ever. But neither of theſe ſuppoſitions is true; for the rivers do convey into the ocean ſome portion of ſalt every day, and they do not, in any given time, return into the ocean ſo much water as in the ſame time is ſeparated from it; and upon both theſe accounts, the ſaltneſs of the ſea, ſo far from being diminiſhed, ought conſtantly to be increaſed, from the rivers poured into it.

Dr. Halley, in an expreſs diſcourſe of the ſaltneſs of the ocean, in the Philoſophical Tranſactions, N° 344, or Abr. vol. v. part ii. p. 216, obſerves, that all the lakes in the world are ſaline, ſome more, ſome leſs ſo, than the ocean, which, in this caſe, may be eſteemed a great lake itſelf; and that all the vapours exhaled by the ſun from lakes are perfectly freſh: ſo that all the ſaline particles brought in by the waters which have paſſed over ſalt-mines remain behind, while the freſh evaporate. Hence it is evident their ſaltneſs muſt be continually augmented.

Now if this be the true reaſon of the ſaltneſs of lakes, it is probable the ſaltneſs of the ocean itſelf ariſes from the ſame cauſe: and hence we are furniſhed with a method of eſtimating the age of the world, by obſerving the increaſe of ſaltneſs in the waters of lakes; and computing in how long time the ocean might, at that rate, arrive at its preſent ſaltneſs.

The principle upon which this opinion is founded, cannot become the ſubject of accurate calculation; rivers may have formerly carried more or leſs ſalt into the ſea than they do at preſent; and the quantities contained at preſent in different rivers are ſo various, that any general poſition, with reſpect to the proportion of ſalt obſervable in river-water, will be liable to many exceptions from particular caſes; but that the cauſe here aſſigned of the ſaltneſs of the ſea is not adequate to the effect, may appear probable from the following obſervation, ſuggeſted by the ingenious Dr. Watſon, the preſent biſhop of Landaff. Sea-water, at a medium, taken from obſervations made in different climates, may be ſuppoſed to contain about one-thirtieth of its weight of common ſalt; but all the rivers in the world could not have conveyed into the ſea one five-hundredth part of the weight of the ſea, though we ſuppoſe, that they daily, ever ſince the creation, carried into the ſea, and left there, the ſame quantity of ſalt which they at preſent daily depoſite in it: nor admitting what ſome eminent philoſophers have endeavoured to prove, that all the rivers in the world flowing into the bed of the ſea, with a continuance of their preſent ſtores, would take up at leaſt eight hundred years to fill it to its preſent height (Buffon's Hiſt. Nat. vol. i. p. 356.), and ſuppoſing the ocean to have been originally freſh, and to have daily loſt by evaporation as much water as it daily received from the influx of the rivers, then muſt eight hundred years have elapſed before the freſh water of the ocean could have been changed into river-water, or acquired that proportion of ſalt with which river-water is impregnated. River-water may, in general, be ſuppoſed to contain one four-thouſandth part of its weight of ſea-ſalt; upon this hypotheſis, the ocean, at the expiration of eight hundred years from the creation, would have contained one four-thouſandth part of its weight of ſea-ſalt, and at the expiration of eight times eight hundred years, it would have contained eight four-thouſandth parts, or one five-hundredth part of its weight of ſalt; but eight times eight hundred years carry us back to an era antecedent to the creation of the world.

The honourable Mr. Boyle (Works, vol. iii. p. 381.) unites as it were the two preceding hypotheſes, and takes the ſaltneſs of the ſea to be ſupplied not only from rocks and other maſſes of ſalt, which at the beginning were, or in ſome countries may yet be found, either at the bottom of the ſea, or at the ſides where the water can reach them; but alſo from the ſalt which the rivers, rains, and other waters diſſolve in their paſſage through divers parts of the earth, and at length carry with them into the ſea. Buffon, and moſt modern philoſophers, acquieſce in this opinion. There is another opinion concerning the ſaline impregnation of the ſea, which deſerves to be mentioned, *viz.* that ſea-ſalt is conſtantly and abundantly generated, both on the ſurface of the earth, and in the boſom of the ocean.

The degree, as well as the cauſe of the ſaltneſs of the ſea, has been the ſubject of inveſtigation and experiment; whence we have reaſon to believe, that this varies in different latitudes, and even in the ſame latitudes at different times.

From ſome experiments mentioned in a voyage toward the north pole, in 1773, by Capt. Phipps (now lord Mulgrave), p. 143, it appears, that the ſea-water at the Nore contained not quite $\frac{1}{36}$ of ſalt; at the back of Yarmouth ſands not quite $\frac{1}{32}$; off Flamborough-head, rather more than $\frac{1}{29}$; off Shetland, rather leſs than $\frac{1}{29}$; lat. 74° at ſea $\frac{1}{29}$; lat. 78°, leſs than $\frac{1}{28}$; lat. 80°, near the ice, not quite $\frac{1}{30}$; lat. 80°.30, under the ice, not quite $\frac{1}{28}$; lat. 68°.46 rather more than $\frac{1}{28}$; lat. 65°, at ſea, rather leſs than $\frac{1}{28}$.

Dr. Hales obtained only $\frac{1}{27}$ from water taken up in the Mediterranean, and $\frac{1}{29}$ from water taken up at the Nore. Dr. Rutty obtained $\frac{1}{25}$ from water taken up in lat. 65°; $\frac{1}{28}$ from water taken up near Dublin; and $\frac{1}{31}$ from water taken up at Dungarvan; and Dr. Lucas got $\frac{1}{25}$ from ſea-water taken up at Harwich.

We learn from ſome experiments formerly made in a voyage from England to Bombay in the Eaſt Indies, that the weight of the ſea-water was the greateſt, not preciſely at the equator, but where the ſun was vertical, and conſequently, in ſimilar circumſtances, where the heat was greateſt. The greateſt weight of a definite quantity of ſea-water, obſerved in ſailing from 28° N. lat. to the Cape of Good Hope, which is about $34\frac{1}{2}$ S. lat. in the months of May, June, and July, was at St. Jago iſland N. lat. 15°, and the leaſt at Teneriffe iſland, 28° N. lat. The proportional weights of equal bulks of Thames water, Teneriffe ſea-water, and St. Jago ſea-waters, were 1900110221, and 1184; whence, by comparing theſe numbers with a table in the Phil. Tranſ. for 1770, p. 349, exhibiting the comparative weight of equal bulks of ſimple water, and of water impregnated with different portions of ſea-ſalt, it may be conjectured, that the Teneriffe ſea-water contained about $\frac{1}{27}$ of ſalt, and the St. Jago water above $\frac{1}{4}$ of its weight of ſalt, ſo that it was nearly, if not fully, ſaturated.

The difference in the ſaltneſs of the ſea in different places, may be owing to the variable quantity of vapours exhaling from it, to the quantity of freſh water received into certain parts of it in rains, or from the mouths of rivers, to beds of foſſile ſalt ſituated at the bottom of the ocean, or to the ſalt-water of ſprings and rivers, which are diſcharged into it in certain places.

Dr. Watſon mentions the following eaſy method of eſtimating the quantity of ſalt contained in ſea-water: take a clean towel, or any other piece of cloth, dry it well in the ſun before the fire, then weigh it accurately, and note down its weight; dip it in the ſea-water, and when taken out, wring it a little till it will not drip when hung up to dry; weigh it in this wet ſtate, then dry it, and when it is perfectly dry weigh it again. The exceſs of the weight of the wetted cloth above its original weight, is the weight of the ſea-water imbibed by the cloth; and the exceſs of the weight of the cloth, after being dry, above its original weight, is the weight of the ſalt retained by the cloth; and by comparing this weight with the weight of the ſea-water imbibed by the cloth, we obtain the proportion of ſalt contained in that ſpecies of ſea-water. But in making this or any other experiment with the ſame view, it is neceſſary to obſerve the ſtate of the weather before the experiment is made, becauſe the quantity of ſalt contained in the water near the ſurface may be influenced, either by the antecedent moiſture, or the antecedent heat of the atmoſphere.

It has been already obſerved, at the beginning of this article, that Ariſtotle, and others after him, have ſuppoſed, that the upper parts of the ſea are ſalter, and alſo warmer, than the lower: but modern philoſophers have differed in their accounts of the ſaltneſs of the ſea at different depths. There have been various contrivances for raiſing the ſea-water, in order to determine its ſaltneſs and temperature. See *Bucket Sea* GAGE, and *Sea* WATER.

The ſaltneſs of ſea-water raiſed from different depths has been determined, either by weighing equal bulks of it, or by evaporating equal meaſures of it, and weighing the ſalt remaining after the water has been wholly diſſipated. Mr. Boyle (ſee his Obſervations on the Saltneſs of the Sea) purſuing the former method, found, that equal bulks of water taken up in the Engliſh channel at the ſurface, and at the depth of fifteen fathoms, were equally heavy; and thence concludes that the ſuperficial water was as ſalt as that at a great depth. On the other hand, count Marſigli (Hiſt. Phyſ. de la Mer) obtained, by evaporating the water, only a thirty-ſecond part of its weight of ſalt from water taken up in the ſurface of the ſea of the gulf of Lyons; whilſt that taken up at the ſame time and place, from a great depth, gave him a twenty-ninth part of its weight of ſalt; and he thence infers the greater ſaltneſs of the ſea at the bottom than at its ſurface, a concluſion which has been ſupported by experiments made in the gulf of Bothnia, and by captain Ellis at Cape Monte on the coaſt of Africa, mentioned in Philoſophical Tranſactions, vol. xlvii. p. 213. It has been obſerved, however, that in other places, the water is more ſalt near the ſurface than at greater depths. From the experiments relating to this ſubject, made on occaſion of the voyage to the North pole, we learn, that equal quantities of water, taken up in the open ſea off Shetland, 60° N. lat. at the ſurface, and at the depth of ſixty-five fathoms, yielded by evaporation equal quantities of ſalt, *viz.* $\frac{1}{29}$ of their weight nearly. In N. lat. 65°, water taken from the ſurface gave nearly $\frac{1}{28}$ of its weight of ſalt, whilſt an equal weight taken up from the depth of ſix hundred and eighty-three fathoms, in the ſame place, gave only $\frac{1}{32}$. The different reſults obtained from theſe ſeveral experiments may be accounted for by ſome circumſtances which attended them, without conteſting the accuracy of any of them.

It is well known, that the Rhone diſcharges much freſh water into the gulf of Lyons, which being lighter than ſea-water, will not readily mix with it, and, therefore, the ſuperficial water being moſt diluted, will contain, bulk for bulk, leſs ſalt than that which is at a greater depth. The gulf of Bothnia receives many rivers, and therefore its ſurface may be more diluted with freſh water, than its middle or bottom. But the water of the Engliſh channel has a communication with the German ocean on one ſide, and with the Atlantic on the other; and, conſequently, is ſubject to a conſtant agitation, which will cauſe the freſh water, poured into it by the Thames, Medway, &c. to be uniformly diffuſed through all its parts, ſo as to render it equally ſalt at all depths. In other places, where the ſuperficial water appears to be more ſalt than that at different depths, the ſupply of freſh water may be inconſiderable, and the evaporation by the ſun's heat may be great. And the difference of evaporation, at different ſeaſons of the year, will account for the various reſults of experiments made at ſuch ſeaſons. After all, the fact of the ſea's being ſalter at the ſurface than at the bottom, requires the confirmation of repeated experiments; ſince it is known that the heavier water of the ſurface muſt gradually ſink and mix itſelf with the lighter and aſcending water below it. See Brownrigg's Art of making common Salt, 1748, 8vo. p. 83, &c. Watſon's Chem. Eſſ. vol. ii. eſſ. iv. p. 93, &c.

SALTO, in the *Italian Muſic.* See Leap.

SALTPETRE. See Nitrat *of Potaſh*, Nitric *Acid*, Potassæ *Nitras*, and *Nitrat of Potaſh*, under Salts. Of the chemical and medical properties of ſaltpetre or nitre, a brief account has been already given under the articles to which we have above referred. It remains to detail, as conciſely as poſſible, the natural hiſtory of this ſubſtance, the mode of its manufacture, and its uſes in the arts. Nitre, as a natural product, may be found in two different repoſitories, the firſt of which is lime-ſtones, and the ſecond vegetable ſoil. The firſt, a calcareous repoſitory, is either a peculiar variety of ſecondary floetz lime-ſtone, or calcareous tufa, or chalk, or indurated marle. In theſe rocks it occurs as a thin granular cruſt, or an effloreſcence of minute ſpicular cryſtals, overſpreading the outſide, and lining the inſide of natural and artificial caverns, with which theſe rocks abound. Hence, as it has been conjectured, it might have derived its name of ſaltpetre, "ſal-petræ," or rock-ſalt. Calcareous ſtrata containing nitre are found in various parts of South America, in ſome diſtricts of France, in the county of Bamberg, and at Hamburgh, near Wurtzburg. But the moſt celebrated repoſitory of native nitre is the Pulo of Molfetta, in the province of Puglia, in the kingdom of Naples. This deep cavity, in form of an inverted cone, has within it, and branching from it, ſeveral excavations, natural and artificial, the ſtrata of which conſiſt of hard ſecondary lime-ſtone, abounding with the remains of organized bodies. At the time when the abbé Fortis directed the public attention to them, all theſe caves were lined with an effloreſcent cruſt of nitre more than an inch thick, which, after being ſcraped off, was again renewed within a few days in conſtant ſucceſſion. The ſubſtance of the rock, to the depth of a foot or more, was richly impregnated with the ſalt which might be ſeparated by lixiviation, but at a greater depth no nitre was found, or at leaſt boiling water did not afford it by diſſolution. A piece of this rock, however, appears by the teſtimony of Dolomieu, after lying for two months in a dry cabinet, to have been covered with a thin cruſt of nitre. Klaproth and Pelletier, having analyſed the nitrous cruſt of Pulo, obtained the following reſults:

Klaproth.	Pelletier.	
425.5	407.5	nitre.
2.		muriated potaſh.
	26.7	muriates.
	20.8	ſulphates, ſoluble in cold water.
254.5	96.7	ſulphate of lime.
304.	410.	carbonate of lime.
986.0	961.7	
14.	38.3	loſs.
1000	1000	

Another repoſitory of native nitre is vegetable ſoil. Of all countries of Europe, Spain is ſaid to abound moſt with this kind of ſoil. According to Bowles, nearly a third of the uncultivated lands in the eaſtern and ſouthern provinces of this kingdom afford a rich ſupply of it by the following management. During the winter and ſpring the land is ploughed twice or thrice, to the depth of three or four inches; it is ſuffered to lie fallow the whole ſummer, and about the middle of the autumn, the ſoil having been thus fully expoſed to the air, is lixiviated; and the liquor being boiled down in the uſual manner, affords, in cooling, a quantity of nitre, mixed with from 20 to 40 *per cent.* of common ſalt. A conſiderable part of the ſoil in Lower Hungary is richly impregnated with nitre; and the water of ſeveral wells and ſprings, containing from two-thirds to four *per cent.* of this ſalt, is unfit for drinking. In India many of the lands, and eſpecially thoſe that lie in the vallies of great rivers, very much abound with nitre; and in the preſidency of Calcutta alone, between 7000 and 8000 tons are annually manufactured. The ſaline effloreſcence which covers the ſurface of the ſoil being ſwept off, is renewed every other day at particular ſeaſons of the year: and that ſoil, in which the ſalt is leſs abundant, is raked up in ſmall heaps, mixed with the ſcrapings of roads and cattle-ſtalls, and after being for a certain time expoſed to the action of the air, lixiviated. The earthy reſidue is mixed with freſh earth, and after two years affords as large a produce of nitre as at firſt. Thoſe nitrous ſoils, the acid of which is combined, for the moſt part, with lime inſtead of potaſh, and which, in the uſual mode of treatment, yield but a ſmall quantity of nitre, are rendered productive by the addition of wood-aſhes: the carbonated alkali of the aſhes and the calcareous nitrate of the ſoil mutually decompoſing each other, and furniſhing, in the reſult, carbonated lime and nitrated potaſh. Many of the ſoils in India, as well as thoſe of China and other parts of Aſia, require this alkaline addition. This is alſo the caſe with much of the ſoil in the Crimea and Ukraine. In many parts of the Crimea, thoſe parts are ſelected that have been long uncultivated, and alſo thoſe artificial parts that have ſerved for burial-places and the ſcites of towns; and the ſoil being dug up, is mixed with about one-fifth, by meaſure, of wood-aſhes, and lixiviated in perforated caſks in the uſual method: the liquor thus produced, after concentration by repeated lixiviations, is mixed with the mother-water of a preceding cryſtallization, and boiled down for 24 hours, removing from time to time the common ſalt and muriated potaſh that ſeparate during the proceſs: it is then transferred, while hot, into ſhallow coolers, in order to cryſtallize, which it does in 24 hours more. The rough cryſtals being drained, are again diſſolved in water, and the product of the ſecond cryſtallization is a nitre ſomewhat impure, and yet fit for the market. Four hundred cubic feet of the mixture of earth and wood-aſhes afford 42lbs. of nitre of the firſt cryſtallization, which, by ſubſequent refining, is reduced to 39lbs.

After the adoption of fire-arms, the conſumption of nitre became proportionably great, and of courſe art and induſtry more actively employed in obtaining it. Different ſoils were attentively examined, and experiments were made for aſcertaining their various products. In the courſe of theſe reſearches it was found, that the ſuperficial ſoil of farm-yards, of cattle-ſtalls, of cellars, of privies, and of other places long expoſed to the vapours of putrefying animal matter, afforded, when mixed with wood-aſhes and lixiviated, a conſiderable quantity of nitre. It was alſo found, that the plaiſter, mortar, and brick rubbiſh of old houſes, might, by a ſimilar treatment, yield this ſalt. In conſequence of theſe diſcoveries, the ſeveral ſubſtances now enumerated were claimed by the crown in moſt of the countries of Europe, and granted to ſocieties incorporated for the purpoſe of making ſaltpetre, and ſupplying the public magazines with this indiſpenſable article. England and Holland ſupplied themſelves from India and China, and therefore paid little attention for a ſhort time to this kind of manufacture: whereas France, Germany, and the Northern ſtates of Europe, encouraged it to the utmoſt of their power. At Paris theſe aſſociations or companies were incorporated ſo long ago as the reign of Charles IX.; and regulated by ſeveral ſtatutes. Their privileges were very extenſive, and enforced with ſuch rigour, that they became occaſions of diſcouraging agriculture, and of promoting tyranny and oppreſſion. They were allowed to appropriate to themſelves all the nitrous ſoils and materials which they could find, without any adequate compenſation to the proprietors. Accordingly the earthen floors of every out-houſe, and even of inhabited cottages, were ſubjected to their depredations, ſo that the people were thus deprived of their beſt manure; and moreover, every pariſh or diſtrict was under an obligation of furniſhing a certain quantity of wood-aſhes. Theſe oppreſſive powers were entruſted by the crown with the farmers-general, whoſe inferior agents exerciſed them to their own pecuniary emolument, and to the grievous annoyance of ſuch perſons as were the ſubjects of their extortion. Nevertheleſs, the annual produce of nitre at the acceſſion of Turgot to the miniſtry, is ſaid to have ſcarcely exceeded one-half of its amount about half a century before his time. This able miniſter introduced a very uſeful reform in this department, reſtricted ſome of the powers which had been ſo much abuſed, and aboliſhed others; and transferred the adminiſtration of this buſineſs from the farmers-general to a particular commiſſion, of which Lavoiſier and Clouet were leading members; and a conſiderable ſum of money was placed at the diſpoſal of the Royal Academy of Sciences, to be diſtributed as prizes by this body to the authors of the beſt memoirs in the preparation of ſaltpetre; and thus important and beneficial improvements were introduced in the conſtruction and management of artificial nitre-beds, and the refining of their produce. By theſe means, the amount of nitre made in France was increaſed during the interval elapſed from the year 1775 to 1785, from 1,800,000lbs. to 3,500,000lbs. After the commencement and during the progreſs of the Revolution-war, the neceſſities of the ſtate occaſioned a great additional demand for this article; ſo that the ableſt chemiſts of Paris directed their ingenuity and ſedulous attention to this object, and their ſucceſs was ſuch, that the produce of nitre was more than quadrupled, and the art of preparing it attained nearly to perfection. From proceſſes detailed under the articles NITRIC and NITROUS *Acid*, &c. it appears, that three conditions are requiſite for the production of nitrated lime, which, by the ſubſequent addition of carbonated potaſh, affords nitre, *viz.* animal matter in a ſtate of decompoſition, atmoſpheric air, or rather the oxygenous part of it, and carbonated lime.

In Virginia, they prepare the floors of their tobacco-houſes for attracting nitre: the method of making it in this way, by Mr. Jeremiah Brown, has been publiſhed in Virginia, by order of the truſtees for the improvement of arts and manufactures, and, in England, by order of the Society for the Encouragement of Arts, Manufactures, and Commerce. See an account of this method in the Annual Regiſter for 1763, vol. vi. p. 121.

The conſtruction of artificial nitre-beds was firſt propoſed by Glauber. Having turned his attention to ſeveral previous circumſtances, he ſuggeſted the following plan for the formation of nitre, which we ſhall extract from Aikin's Dictionary.

"Let a large ſquare wooden vat be made open at top, and with a perforated falſe bottom placed a few inches above the real bottom, and between the two bottoms let a pipe with a ſtop-cock be inſerted, ſo as to diſcharge any liquor into a ſhallow open reſervoir ſunk into the ground juſt in the front of the vat: on the oppoſite ſide of the reſervoir let another vat, ſimilar to that already deſcribed, be placed, and, to complete the apparatus, let a pump be fixed in the reſervoir, by which its contents may be transferred to either of the vats that the workman chooſes. Every thing being complete, let the vats be filled with horſes', cows', or ſheep's dung, mixed with leaves or any dry vegetables: then draw a weak alkaline ley from quicklime and wood-aſhes, and pour it into one of the vats till it ſtands a finger's breadth above the other ingredients. In about 12 hours' time turn the cock, and let the liquor drain into the reſervoir, whence it is to be pumped again into the other vat, and after 12 hours more returned into the reſervoir. In the ſpace of a few days, the contents of the vats will heat and ferment ſtrongly: no further care is required till the decline of the fermentation, which may be known by the ceſſation of the ſteam: the materials are then to be again drenched with the liquor in the reſervoir for 12 hours, and when this is again diſcharged the fermentation will recommence. This method being purſued for ten or twelve months, (taking care to keep the vats filled with freſh portions of leaves and dung as the maſs ſubſides,) both the liquor and the contents of the vats will be found to be very rich in nitre."

"The above method of Glauber's," ſays Mr. Aikin, "deſerves notice as the firſt attempt at the artificial manufacture of nitre, although there is little doubt that its ſucceſs is greatly exaggerated, as is but too much the cuſtom of this author. Another method propoſed by the ſame chemiſt, and the ſucceſs of which is better authenticated, is the following. Conſtruct a vault of frame-work of any dimenſions, and line it to the thickneſs of three or four inches with plaiſter compoſed of the following materials, *viz.* one part of quicklime, one of wood-aſhes, and two of cows' or horſes' dung, with a ſufficient quantity of urine to work it up to a proper conſiſtence. This plaiſter being carefully applied, is to be dried by a gentle fire to be made under the vault, a ſecond coating of the ſame materials is then to be put on, and thus, by alternate drying and plaiſtering, the vault is to be made two or three feet thick. Being now ſufficiently ſtrong, the wooden framing may be removed. The plaiſter, in proportion as it dries, is to be reſtored to a proper ſtate of moiſture by the application of urine, and in the ſpace of a few months, more or leſs according to the warmth of the air and other circumſtances, the whole inſide of the vault will be covered with nitrous effloreſcences: by degrees the plaiſter will be impregnated with nitre through its whole ſubſtance, at which time the vault being broken down, and its materials being duly lixiviated, a large quantity of nitre will be obtained.

This method was adopted in many parts of Germany with reaſonable ſucceſs, but, requiring much manual labour, was at length abandoned for more economical proceſſes.

"In France the nitre-beds are compoſed of nitrous earth from farm-yards, ſtables, &c.; of ſtreet-ſweepings, of mild calcareous earth, ſuch as old mortar or plaiſter, chalk, tufa, or the ſweepings of roads paved with lime-ſtone; of animal matter, ſuch as night-ſoil, blood, refuſe from the ſkinners and tanners, bones and other offal; of vegetable matter, ſuch as ſtraw and ſtable litter, leaves, ſaw-duſt, ſpent tanners' bark, &c. Theſe are all mixed in ſomewhat caſual proportions, care being only taken that a ſufficient quantity of calcareous matter is preſent; they are laid as lightly as poſſible in long beds or pyramids under covered roofs to protect them from the weather, and are kept duly moiſtened with putrid water or urine: by this management they yield every other year, by lixiviation, a conſiderable quantity of nitrated lime, which, by the addition of wood-aſhes or potaſh, is converted into true nitre. The circumſtance in which the French nitre-beds differ principally from thoſe of Sweden and Germany is, that they ſcarcely ever contain wood-aſhes, the requiſite portion of alkali being added in a ſubſequent part of the manufacture.

"The proportion of nitre afforded by theſe artificial beds it is not eaſy to aſcertain. In France, where the cuſtom is to lixiviate once in two years, the produce may be eſtimated at from ſeven to twelve ounces of nitre from 100lbs. of materials: of this about half is nitrate of potaſh, and the reſt nitrate of lime, requiring therefore the addition of potaſh to convert it into true nitre."

For the theory of nitrification, and particularly that of M. Thouvenel, we refer to the work now cited. Various methods have been practiſed for the extraction of nitre from the earths that contain it, and the purification of this ſalt.

The marley earth, frequent in China, Perſia, and many parts of the Eaſt, is ſelected for working from places where it ſtands in barren cliffs, on hills facing the northern or eaſtern winds. The manner of their ſeparating nitre from this earth is as follows: they dig large pits, which they coat over on the inſide with a ſtiff and firm clay; this they fill half full of water, and into it throw the earth. When the water has ſtood ſome days to imbibe the ſalt, they draw it off into other pits, defended by ſlight walls on all but the north-eaſt ſide. Here the ſun exhaling the water, the ſalt which it had imbibed affixes itſelf to the ſides of the pit in ſmall, browniſh, white, hexahedral, but very imperfect, cryſtals, which are what we receive from the Eaſt Indies under the name of rough nitre.

This is the way the greateſt quantity of this ſalt is made; but it is alſo procured from divers other materials, and by many other methods.

The method of manufacturing ſaltpetre in Podolia, related by Dr. Wolf, is as follows: the earth or mould, which they make uſe of for this purpoſe, is of a deep black; and they make choice of a place for their operation not far from a ſpot rich enough in nitre to keep them conſtantly at work, at leaſt during a whole ſummer, and ſuch as can ſupply them with water and wood at an eaſy expence. The utenſils uſed in this manufacture, are a large copper boiler, containing about ſixty amphors of ſix gallons, or about 54lbs. of water each, which is fixed in the ground, with its brim level with the ſurface; 100 wooden tubs, with a hole bored near the bottom, each of which holds a car of earth, or about four or five amphors; two very large caſks of about 100 amphors each; about thirty-two wide troughs or coolers, holding about an amphor each; and a ſufficient number of amphors for fetching water.

In the manufacture, the firſt operation is to beat the nitrous earth to a coarſe powder with iron ſpades, and to clear it of all hard ſubſtances. If it be very rich in nitre (indicated either by its fatneſs or its downy efloreſcence), they mix with it ſome of a poorer ſort, in equal quantity, but very black and old: and, laſtly, they add aſhes, commonly thoſe of the aſh, which moſt abounds, to the amount of about a fifth part of the whole, and mix them well together. If they have a quantity of urine at hand, they throw it in, but never any quicklime: they then put one car of the prepared nitrous earth into one of the tubs, fill up the veſſel with cold water, and ſtir the whole well with a wooden ſtaff; and after it has ſtood twenty-four hours, with occaſional ſtirring, they ſuffer the ley to run out at the hole near the bottom, and put it into large caſks. In this decoction of the nitre, what they call the *mother of nitre* is abſolutely neceſſary. This is the inſpiſſated lixivium remaining after the cryſtallization of nitre, which cannot itſelf be made to cryſtallize, and they keep it from one year to another. Of this mother of nitre, they pour one or two tubs into the boiler, to which they add the new ley, collected in the great caſks, till the boiler is full, and keep the contents boiling near twenty-four hours. As ſoon as they perceive any marks of cryſtallization on the ſurface, they remove the ley, thus decocted and inſpiſſated, into the thirty-two wooden coolers, and let it remain there twenty-four hours; in which time the cryſtallization being completed, they drain off the mother of nitre, and return it into the boiler. The cryſtals are taken out and dried; but as they never prove clean, they are again diſſolved in clean water, filtered through a flannel bag, and boiled up again, in a leſs boiler, to a requiſite thickneſs, and then cryſtallized again, which brings them to be fit for ſale. In this manner, the proceſs is repeated through the ſummer, till the winter's froſt puts a ſtop to it.

The method formerly uſed in a conſiderable manufacture at Paris was as follows: M. Bouret, who makes every year from 35,000 to 36,000lbs., employs ſix men night and day, two rooms, twenty large caſks, and three horſes. The caſks are half filled with old plaiſter, which is changed every time of pouring on water, and the lower half with wood-aſhes, which are changed but once in five lixiviations. The water poured on ſoaks through both the plaiſter and aſhes, and is five times paſſed through freſh plaiſter. It is then boiled down in a copper pan, ſo placed that the flame paſſes quite round its ſides. The fire is made of wood. The lixivium, when properly evaporated, is ſet to cryſtallize, and the cryſtals to drain. The ſcum taken off in the boiling is thrown upon the plaiſter, which, the longer it lies in heaps, (wetted from time to time,) becomes the ſtronger; and likewiſe in proportion to the putrid matter thrown upon it. The plaiſter uſed in the buildings at Paris, is made of that gypſeous earth called plaiſter of Paris, and found in the neighbourhood of that city. In general, no lime is mixed with it; and if this be the caſe, the nitre is neither ſo good, nor produced in ſo great a quantity. It is known when the old plaiſter is worth being collected and employed, by the ſaltiſh taſte of it.

The firſt thing, in the proceſs of extracting and purifying nitre, is to aſſay the earth. This is done by lixiviating a few pounds of it, and adding to the liquor thus obtained as much of a ſolution of common potaſh, of a known ſtrength, as is ſufficient to decompoſe all the earthy ſalts. From this aſſay, the quantity of alkali required is eaſily calculated.

The next proceſs is the lixiviation; which is performed in the following manner. Several cart-loads of nitrous earth are mixed as accurately as poſſible with the requiſite quantity of alkali, either in the form of wood-aſhes, or pulverized potaſh. Several large caſks with perforated falſe bottoms are then filled with the prepared earth laid on very lightly; after which as much river-water is poured in as the veſſels will hold. In two or three hours time the cock at the bottom of each caſk is turned, and the liquor is allowed to drain out during the remainder of the day. The caſks of a ſecond ſeries, charged with earth as before, are now filled up with the firſt lixivium, and after ſtanding for a few hours, the liquor thus concentrated is drawn off in the manner juſt deſcribed. By a ſimilar proceſs on the third day a lixivium, thrice as ſtrong as the firſt, is obtained, which is now ſufficiently concentrated to be boiled down. The contents of each ſeries of caſks are lixiviated twice more, and the weak ſolutions thus obtained are employed inſtead of water in the firſt and ſecond lixiviations of freſh parcels of earth.

The boiling down and evaporation next ſucceed. The lixivium, containing nitrate of potaſh, the muriates of potaſh and ſoda, with probably a few other ſalts, and various earthy and other impurities, is put into a large boiler like a ſalt-pan, and heated nearly to ebullition; it is then clarified by the addition of bullock's blood, or a ſolution of glue, the impurities, as they appear on the ſurface, being carefully ſkimmed off: when no more froth riſes of itſelf, a little lime-water is added, which coagulates the remainder of the blood and glue, and thus completes the clarification. It is now boiled for ſeveral hours, and the muriates of potaſh and ſoda, as they depoſit, are withdrawn by a perforated ladle. When the liquor is ſo concentrated that a few drops cryſtallize readily on being dropped on a cold iron, it is laded out into a vat, where it remains half an hour to depoſit the common ſalt and impurities ſtill floating in it: hence it is transferred to large wooden or metallic cryſtallizing baſons, where it remains cloſe covered up during from three to ſix days, according to the temperature of the air; at the expiration of this period the fluid mother-water is poured out and returned to the nitre-bed, and the ſalt depoſited in a confuſed cryſtalline maſs of an opaque dirty white, is broken to pieces and ſet to drain, after which it is brought to market, or delivered in to the government-ſtores, as rough nitre, or nitre of the firſt boiling.

In order to refine the rough nitre, the ancient practice was to ſubject it to two more ſucceſſive boilings and cryſtallizations; by this method, however, a very conſiderable proportion of the nitre was left in the mother-waters, no inconſiderable ſhare was volatilized by the heat required for evaporating the ſolution when it had nearly acquired the due degree of concentration; and beſides, a great expence both of time and fuel was incurred. The modern method of refining this ſalt was invented in France a few years ago, and is now conſidered as brought nearly to perfection. It is thus effected:

The rough nitre is broken to ſmall fragments by wooden mallets, and is then put into a wooden tub, with 20 *per cent.*, by weight, of cold water; in this ſtate it remains for ſix or ſeven hours, being occaſionally well ſtirred up, that the water may have free acceſs to every part. The water is now let out by a hole at the bottom of the veſſel, and carries with it in ſolution all the deliqueſcent ſalts, and the greateſt part of the muriates of ſoda and potaſh, together with ſome nitre. When the whole of the liquor is drained off, 10 *per cent.* more of water is added, and well mixed with the nitre for an hour's time, when it is diſcharged in the ſame manner as the firſt. Laſtly, 5 *per cent.* of water is poured in, and run off again almoſt immediately after. The nitre thus waſhed, after being well drained, is put into a boiler with half its weight of water, and boiled till a pellicle forms on its ſurface; the liquor is then diſcharged into a leaden cooler, and ſtirred about with rakes, till it is quite cold, by which manipulation the ſalt is depoſited in ſmall cryſtalline needles. It is now taken out of the liquor with a perforated ladle and well drained: after which it is waſhed with 5 *per cent.* of cold water, and again drained: being then ſpread out on a large table it dries in a few hours, and is laſtly heated over a fire in large baſons for two or three hours, at a temperature not exceeding 120° Fahr. taking care to ſtir it all the while; by this treatment it is perfectly purified, and brought to the conſiſtence of fine ſand, and is now ready to be manufactured into gunpowder. See Aikin's Dictionary.

The uſe of nitre is very extenſive in medicine, in the arts, and in chemiſtry.

Dr. Shaw, on this occaſion, obſerves, that if the medicinal virtues of nitre were to be enumerated, as they ſtand confirmed by ſufficient experience, perhaps they would prove more numerous than thoſe of any one known medicine beſides. It is ſerviceable in the ſtone and ſtoppages of urine, in deliriums, malignant fevers, diarrhœas, the ſmall-pox of the confluent kind, &c. ſo as to prove almoſt a general remedy. And all theſe excellent qualities are in this ſalt joined to that deſirable property of being innocent, or ſcarcely any way prejudicial to the body. The uſual doſe of nitre, among us, is from two or three grains to a ſcruple; though, in many caſes, it may be given with ſafety, and to better advantage, in larger quantities. From ſome experiments on the effects of nitre taken internally, related in Mr. Alexander's Experimental Eſſays, it appears, that nitre has a power of almoſt inſtantly retarding the velocity of the circulation of the blood, and of ſurpriſingly diminiſhing the number of arterial pulſations; and that its effects are much more powerful when newly diſſolved in water, than when it has remained diſſolved during ſome hours. As this difference muſt have proceeded from the cold which is produced by nitre during its ſolution, probably a much greater effect would be produced by procuring that ſolution in the ſtomach. For the various medicinal preparations of nitre, ſee NITRE, and the references under that article.

In chemiſtry, beſides the nitrous acid obtained from nitre, which is one of its moſt powerful agents, nitre itſelf is alſo uſed in many chemical operations. And in the arts, its properties of detonating with bodies containing phlogiſton, of accelerating their calcination, and eſpecially the calcination of the imperfect metals, render it uſeful for the purification of gold and ſilver, when they are allayed with other metals. As nitre is quickly and eaſily alkaliſed, it enters into the compoſition of reducing fluxes, or of ſimple fluxes, to aſſiſt fuſion and vitrification. It may alſo be employed by its detonation, to diſcover the preſence of the inflammable principle in ſubſtances. But the moſt conſiderable uſe of nitre is for the preparation of gunpowder. See NITRE, NITRUM, NITRATE, and *Nitrate of Potaſh*, under POTASH.

SALT-POND BAY, in *Geography*, a bay on the ſouth coaſt of Jamaica, eaſt of Port Royal.

SALTS, in *Chemiſtry*, a term formerly uſed to ſignify all ſapid ſubſtances which were ſoluble in water. The acids were termed *acid ſalts*, *alkalies*, *alkaline ſalts*; and thoſe ſapid bodies not poſſeſſing either of thoſe qualities, *neutral ſalts*. In the preſent ſtate of chemical ſcience, the term ſalt is confined ſolely to the compounds formed by acids with the alkalies, earths, and metallic oxyds; the ſubſtance combining with the acid being called the baſe of the ſalt.

Neutral ſalts are thoſe in which the ingredients are in exact ſaturation. (See Neutral *Salts*, and Neutralization.) And they are thus diſtinguiſhed from thoſe, ſtrictly ſo called, that are formed by the combination of acids with alkalies, in which the properties of the one or the other predominate. When the acid predominates, the ſalt is deſignated by the ſyllables *ſuper* being added to the appellation of the neutral ſalt, formed with the ſame acid and alkali; but when the alkali is redundant, the ſyllable *ſub* is added: thus, carbonate of potaſh, with a redundance of acid, is ſupercarbonate of potaſh; and with a deficiency of acid, ſubcarbonate of potaſh; and as there are two varieties of acids formed from the combination of the ſame baſe or baſes with different proportions of oxygen, ſo it has been found alſo neceſſary to diſtinguiſh the ſalts formed with them by different terminations; thus the ſalt compoſed of *ſulphuric* acid and potaſh is termed *ſulphate* of potaſh, while that formed with *ſulphurous* acid and the ſame alkaline baſe, is termed *ſulphite* of potaſh. When the acid has the term *oxy* prefixed to its name, the ſame ſyllables are prefixed to that of the ſalt: thus, *oxymuriate of potaſh* denotes a ſalt compoſed of the oxymuriatic acid and potaſh.

The neutral and other ſecondary ſalts have very different degrees of ſolubility; but that of almoſt all of them is increaſed by an augmented temperature, while their ſolution is for the moſt part accompanied with a diminution of temperature. They may be obtained unaltered from ſolutions by evaporation; and, if the proceſs be ſlowly conducted, they form in regular cryſtallized maſſes, which have more or leſs tranſparency according to the quantity of water which they retain in their compoſition. Expoſure to air, heat, and moiſture, variouſly affect the appearance of cryſtallized ſalts. When they loſe their tranſparency, and are covered with a white cruſt, or fall to powder, on ſimple expoſure to the air, ſuch ſalts are ſaid to be *effloreſcent*; if, on the contrary, they attract moiſture from the atmoſphere and become fluid, they are named *deliqueſcent*; and *permanent*, when the air has no effect on their cryſtals. The circumſtance of a ſalt firſt melting in a moderate heat, then becoming covered with a white cruſt, and ultimately being converted into a dry opaque maſs, is termed *watery fuſion*; but when, inſtead of melting, it ſplits with a crackling noiſe, this effect is termed *decrepitation*.

The effloreſcent and deliqueſcent ſalts ſhould be preſerved, and diſpenſed in well-ſtopped bottles; while thoſe that are permanent will not ſuffer from being put up in paper.

The following abſtract of Mr. Kirwan's table of the compoſition of ſalts, ſhews at one view the quantity of baſe, acid, and water contained in the ſalts medicinally uſed.

Names of the Salts.	Baſe.	Acid.	Water.	State.
Carbonate of potaſh	41.	43.	16.	Cryſtallized.
——— of ſoda	21.58	14.42	64.	Dry.
——— of ditto	59.86	40.05	—	Deſiccated.
——— of lime	55.	45.	—	Natural.
——— of magneſia	25.	50.	25.	Cryſtallized.
———, common magneſia	45.	34.	21.	Dried at 80°.
Sulphate of potaſh	54.8	45.2	—	Dry.
——— of ſoda	18.48	23.52	58.	Fully cryſtallized.
——— of ditto	44.	56.	—	Deſiccated at 700°.
——— of magneſia	17.	29.35	53.65	Fully cryſtallized.
——— of ditto	36.68	63.32	—	Deſiccated.
Alum	12.*	17.66	51.†	Cryſtallized.
Ditto	63.75	36.25	—	Deſiccated at 700°.
Nitrate of potaſh	51.8	44.	4.2‡	Dried at 70°.
Muriate of ſoda	53.	47.§	—	Dried at 80°.
——— of ammonia	25.	42.75	32.25	Sublimed.
——— of barytes	64.	20.	16.	Cryſtallized.
——— of ditto	76.2	23.8	—	Deſiccated.
——— of lime	50.	42.	8.	Red-hot.
——— of magneſia	31.07	34.59	34.34	Senſibly dry.
Acetate of potaſh	61.05	38.05	—	In foliated maſs.‖

* Ignited. † Of cryſtallization + 19.24 in the baſe.
‡ Of compoſition. § Aqueous 38.88 real. ‖ Higgins.

See Nomenclature, and the different baſes of ſalts under which the ſalts are deſcribed.

The general plan of this work has been to treat of the ſalts, as underſtood by the laſt definition, under their reſpective baſes. We find, however, that this plan has been deviated from in the articles Alumina, Barytes, and Potash. This being the caſe, we think this the moſt proper place in which to ſupply the deficiency, and refer to the reſpective baſes for the reſt.

Sulphate of Potaſh.—This ſalt has been called in medicine *ſal polychreſt*, and in the old chemical nomenclature, *vitriolated tartar*. It is formed by directly adding ſulphuric acid to a ſolution of potaſh, till the mixture is neither acid nor alkaline, which will be the caſe when it does not change the colour of infuſion, or ſyrup of violets. This mixture on evaporation affords cryſtals, which are larger and more complete as the time in which the water is eſcaping. Theſe cryſtals are in the form of ſhort ſix-ſided priſms, terminating in pyramids of the ſame number of ſides.

The ſpecific gravity of this ſalt, in its perfect ſtate, is about 2.4. It does not poſſeſs much taſte, which is rather bitter. It diſſolves in ſixteen parts of water at 60°, and in four parts of water at 212°. It is not changed by expoſure to the air. When thrown upon burning coals it decrepitates, like common ſalt. Expoſed to a ſtrong heat in a crucible it melts. If charcoal, or, which is better, ſaw-duſt, be preſent, it is ſpeedily converted into a ſulphuret of potaſh, called alſo *liver of ſulphur*. Its compoſition by Dr. Wollaſton's ſcale is in 100 parts, 46 ſulphuric acid, and 54 potaſh. By Dalton's numbers 45 acid, and 55 potaſh. Theſe proportions agree very nearly with the analyſes of Bergman, Kirwan, Wenzel, and Dr. Thomſon. The latter makes it 42.2 acid, 50.1 potaſh, and 7.7 water. It would ſeem from the latter that this ſalt conſiſts of an atom each of acid, baſe, and water. This would be in Dalton's numbers 34 acid, 42 potaſh, and 8 water, which is doubtleſs near the truth.

This ſalt is partially decompoſed by the nitric and muriatic acids; and its ſolution is completely decompoſed by muriate of barytes, muriate of lime, lime-water, oxymuriate of mercury, nitrate of ſilver, and acetate and ſuperacetate of lead, which therefore cannot enter into formulæ with it. In medicine, it is deobſtruent and cathartic. It is given with great advantage in the viſceral obſtructions to which children are liable, and in combination with rhubarb it has been found more uſeful than any of the other ſaline purgatives in jaundice and dyſpeptic affections. It is generally given in the form of powder, in doſes of from x gr. to ʒvi, as it is intended to act as a deobſtruent or a purgative. Its officinal preparations are, "Pulvis ipecacuanhæ compoſitus," L. E. D.; and "Pulvis ſcammoniæ compoſitus," L. See POWDER.

Sulphate of potaſh with *ſulphur*, formerly "Polychreſt ſalt," is directed by the Edinb. Pharm. to be prepared by mixing well together, equal parts of nitrate of potaſh in powder, and ſublimed ſulphur, and throwing the mixture in ſmall quantities at a time into a red-hot crucible. When the deflagration terminates, let the ſalt cool, and preſerve it in a well-ſtopped glaſs veſſel. This ſalt has a ſenſibly acid taſte, and reddens infuſion of litmus; it is almoſt wholly diſſolved in eight parts of water at 60°; and by expoſure to the air, it is altogether converted into ſulphate of potaſh. Its medical properties and uſes are the ſame with thoſe of ſulphate of potaſh; but it is very rarely uſed.

Superſulphate of potaſh, or, agreeably to a more modern nomenclature, *biſulphate of potaſh*. Its name indicates that it contains two atoms of acid to one of potaſh. It is formed by heating a ſolution of 84 parts of potaſh and 42 of ſulphuric acid, of the ſpecific gravity of 1.85. It cryſtallizes into long ſix-ſided priſms, having the appearance of needles. Its taſte is ſharp and acrid. It diſſolves in about three (five Thomſon) parts of cold water at 60°, and in its own weight of boiling water. It is not changed by expoſure to the air. When heated in a platina crucible it fuſes into a tranſparent fluid, but becomes white and hard on cooling.

The compoſition of this ſalt, as well by an experiment made by Dr. Wollaſton, as by theory, will be 34 × 2 acid, 42 potaſh, and probably 16 of water. Its efficacy as a remedy is yet unknown.

Nitrate of Potaſh. See POTASSÆ *Nitras*.

It is the rapid evolution of the elaſtic fluids, reſulting from the decompoſition of the nitric acid, by the agency of the inflammable matter, that conſtitutes the energy of gunpowder, and the report of the pulvis fulminans, for the manufacture of which, ſee GUNPOWDER, and FULMINANS *Pulvis*.

The very extenſive conſumption of nitrate of potaſh in the manufacture of gunpowder, has made it a deſideratum in ſome countries to obtain it by ſome artificial means. The great ſupplies of nitre have been from thoſe warm countries where it exiſts native in the common ſoil. It abounds in this ſtate in Egypt, India, South America, and Spain. Some parts of the ſoil contain much more than others. Where it is found plentifully the earth is collected into immenſe piles and lixiviated, which diſſolves the nitre, and any other ſoluble matter. This liquor is evaporated and the nitre obtained in cryſtals. The firſt cryſtallization is always impure, and is called *crude nitre*. The pure nitre can only be obtained by repeated ſolutions and cryſtallizations. It has been the opinion of ſome philoſophers that nitre has its origin in vegetables, becauſe it is often found an ingredient in their analyſis. Several parts, however, both in natural and artificial nitre-beds, go far to prove that it originates in the earths themſelves, aided by the preſence of atmoſpheric air, by the heat and perhaps the light of the ſun.

The author of this article has been informed by a friend recently travelling in Spain during the laſt ſeaſon, that in many parts of that country he found it difficult, and frequently impoſſible, to get a draught of water that was not impregnated with nitre, and in ſome places he found nitre in the ſoil. In the neighbourhood of Madrid, immenſe heaps of this ſoil were collected for the purpoſe of extracting the nitre from it. What, however, is the moſt remarkable, and which tends to confirm the opinion above given reſpecting its origin, is, that theſe heaps, in a few years after having been lixiviated, which muſt have removed all the ſoluble parts, became again capable of furniſhing a ſimilar quantity of nitre; and what ſtill more confirms the above idea, this proceſs had been repeated upon the ſame heap ſeveral ſucceſſive times. It appears from this fact, that ſome ſorts of ſoil are capable of furniſhing nitre by merely being expoſed to air in warm climates.

This ſalt has been formed in great abundance in France and Germany, by what are called artificial nitre-beds. Theſe conſiſt of long narrow heaps of a collection of animal and vegetable matter, mixed with calcareous and other earths. Sheds are thrown over theſe heaps to ſhelter them from the rain, and keep up their heat; and they are alſo kept at a certain degree of moiſture, by occaſionally throwing water upon them. This keeps up to a certain extent the putrefactive fermentation in the animal and vegetable ſubſtances. The heat which theſe generate may contribute much to the proceſs, as well as furniſhing potaſh for the nitre. It is ſuppoſed that the nitrogen afforded by the animal matter in its naſcent form may be more fitted for forming nitric acid with the oxygen of the atmoſphere than is the nitrogen of the atmoſphere, which is only preſented in its gaſeous form. There is, however, no proof of this being the caſe, ſince we find nitre produced where no animal or vegetable ſubſtance is preſent. Theſe beds afford nitre after being expoſed a certain length of time. The heaps are ſometimes turned over, which facilitates the production of nitre. The nitre, mixed with other ſalts, effloreſces on the ſurface of the heaps, and is ſwept with brooms from time to time. Theſe ſweepings are collected and purified by lixiviation and cryſtallization.

The earth itſelf is alſo lixiviated at certain periods, and then re-expoſed. In Switzerland theſe nitre-beds are frequently connected with ſtables on a large ſcale, to take advantage of animal excrement.

Many vegetables furniſh nitre in conſiderable quantity, particularly thoſe that are poiſonous, or poſſeſſing much odour. The extracts made from hemlock, henbane, and quaſſia, in a length of time become covered with cryſtals of nitre. During the maceration of henbane in hot water, for the purpoſe of making the extract, the nitric acid of the nitre is to a certain extent decompoſed; as nitrous gas may be collected in conſiderable quantities. Is it not probable that thoſe plants which furniſh more than an ordinary quantity of potaſh, ſuch as wormwood and the ferns, may originally contain nitre, which is decompoſed during their incineration, leaving the potaſh combined with carbonic acid?

Nitre is ſometimes uſed in preſerving meat, particularly hams. It is to the effect of this ſalt that the meat owes its red colour. This colour is produced by the preſence of the oxygen, or at leaſt by the abſtraction of carbon, preciſely on the ſame principle that venous blood becomes red. The freſh cut muſcle, which is of the colour of venous blood, ſoon becomes changed by ſimilar expoſure to the air, and alſo by the application of nitre. What corroborates this idea is the fact, that when too much nitre has been uſed upon meat, it acquires the exact flavour of nitrous gas, and the parts moſt ſuſceptible of this ſmell exhibit the priſmatic colours. See SALTPETRE.

Muriate of Potaſh.—This ſalt was, before the preſent nomenclature, called *regenerated ſea-ſalt;* and in medicine it was called *digeſtive ſalt of Sylvius.* See POTASSIUM.

It is beſt formed by adding muriatic acid to the cryſtallized carbonate of potaſh, till the efferveſcence ceaſes. This ſolution, by ſlow evaporation, affords cubic cryſtals, which are the ſalt in a ſtate of purity.

Its taſte is bitter. The ſpecific gravity of the perfect cryſtals is 1.836. It diſſolves in three times its weight of water at 60°, and in a little leſs than two parts at 212°. It is ſlightly deliqueſcent in the air. When expoſed to heat, like the muriate of ſoda, it decrepitates. At a red heat it melts, and at an increaſed temperature it ſublimes in white fumes.

This ſalt, in the dry ſtate, is conſidered by ſir Humphrey Davy as a compound of chlorine and potaſſium; in its humid ſtate, it is a compound of potaſh and muriatic acid. When in this laſt ſtate heat is applied, the oxygen of the potaſh combines with the hydrogen of the muriatic acid, forming water, which is driven off, leaving what ſir Humphrey has turned *potaſſane,* and what Dr. Thomſon has called *chloride of potaſſium,* and what in the old language would be termed *muriate of potaſh.* This ſalt, in the dry ſtate, according to Wenzel, is compoſed of 35 acid and 65 potaſh; and, from the authority of Roſe, 34 acid and 66 potaſh. By Dr. Wollaſton's ſcale, it is 36.5 acid and 63.5 potaſh. By Dalton's numbers, 22 acid and 42 baſe; or, in the 100, it is 34.5 acid and 65.5 potaſh. Theſe accounts ſo nearly agree, as to leave little doubt of their accuracy. See MURIATIC *Acid.*

Hyperoxymuriate of Potaſh.—This ſalt was firſt diſcovered by Dr. Higgins, but Berthollet was the firſt who pointed out its conſtitution and particular properties. It has ſince been examined by Lavoiſier, Van Mons, Fourcroy, Vauquelin, Hoyle, Chenevix, and others. The latter chemiſt has given a very able paper upon this claſs of ſalts, in the Philoſophical Tranſactions for 1802.

This ſalt is prepared by paſſing oxymuriatic acid gas through a ſolution of one part potaſh to ſix parts water. For this purpoſe, the latter ſolution may be put into the bottle B. (See *Plate* XVII. *Laboratory, fig.* 9.) The retort, A, contains the materials for producing the oxymuriatic acid. The gas, on entering the bottle B, firſt forces the liquid up the tube into the bottle C, and then ſlowly follows it in bubbles. Theſe are generally abſorbed before they reach the bottle C. If this ſhould not be the caſe, the remaining gas deſcends by the tube *b* to the bottle D, which contains a ſolution of potaſh ſimilar to that in B. When the alkali is nearly ſaturated, the ſalt in queſtion begins to precipitate in the form of brilliant ſcales, or plates. Theſe are not perfectly pure, but, by diſſolving them in about three times their weight of boiling water, the ſalt falls down in greater purity as the water cools.

The form of the cryſtals of this ſalt, although they appear in the form of thin plates when minutely examined, is found to be that of the parallelepiped, or rather obtuſe rhomboids.

It has a cooling, ſharp, and rather acrid taſte. It diſſolves in 17 or 18 parts of water at 60°, and in 2½ parts of water at 212°. It is not changed by expoſure to the air. When expoſed to heat, it firſt undergoes the aqueous fuſion. If the heat be increaſed, the ſalt is at length decompoſed. A large quantity of oxygen gas eſcapes, equal to one-third of the weight of the ſalt, leaving behind two-thirds of muriate of potaſh.

Its action upon combuſtible bodies conſtitutes its moſt remarkable properties. When three parts of this ſalt and one of ſulphur are ſmartly rubbed in a mortar, a ſucceſſion of exploſions take place, not unlike the cracks of a whip. Theſe are attended with flaſhes of purpliſh light, and a ſmell of ſulphureous acid. The ſame mixture laid upon an anvil, and ſtruck with a hammer, gives a loud report. When phoſphorus is uſed inſtead of ſulphur, the effects are much more violent. Similar, but leſs ſtriking, phenomena are obſerved, when this ſalt is mixed with charcoal, ſugar, ſtarch, or gum, and almoſt any other dry vegetable matter. When theſe mixtures are touched with concentrated ſulphuric acid, inflammation inſtantly enſues. This effect is ſtill more conſpicuous, when the mixtures are projected into the acid. In theſe experiments, the greateſt caution ſhould be obſerved. In the detonations by friction, or percuſſion, the eyes and hands of the operator ſhould be guarded. The mixture with ſulphur ſometimes explodes ſpontaneouſly. Similar detonations alſo take place with metals and this ſalt, particularly the more oxydable metals. Theſe energetic properties ſuggeſted the idea of uſing it, inſtead of nitre, in the manufacture of gunpowder; but its property of exploding by friction, renders even the mixture of the materials too hazardous to be practiſed. In the very firſt attempt to form the compound, two individuals loſt their lives.

This ſalt is decompoſed by nitric acid, which diſengages the oxygen and the oxymuriatic acid.

The dilute muriatic acid added to this ſalt, in a very ſmall retort, diſengages a peculiar gas, which was diſcovered by ſir Humphrey Davy, to which he has given the name of *euchlorine.* See OXYMURIATIC *Acid.*

We ſhall beſt ſhew the conſtituents of this ſalt, as well as its particular analyſis, by referring to the chemical changes which take place in its formation.

According to the new hypotheſis, which ſir Humphrey Davy and ſome other chemiſts have adopted, the ſalt in queſtion conſiſts of 1 atom of chlorine, 1 of potaſſium, and 6 of oxygen. Agreeable to the common opinion, it conſiſts of 1 atom of muriate of potaſh, with 6 of oxygen; or 1 of muriatic acid, 6 of oxygen, and 1 of potaſh.

By the firſt opinion, 6 atoms of chlorine enter the ſolution of potaſh: 5 of theſe decompoſe 5 atomsof water, with the hydrogen of which they form 5 atoms of muriatic acid. Theſe combine with 5 atoms of potaſh, forming 5 atoms of potaſſane, and 5 atoms of water. The 6th atom of chlorine combines with 5 atoms of the oxygen derived from the water: theſe combining with an atom of potaſh, form an atom of the hyperoxymuriate of potaſh. If the atom of hydrogen be 1, oxygen 7, chlorine 29, and potaſſium 35; then 5 atoms of potaſſane will be $(29 + 35) \times 5 = 320$, and 1 atom of the hyperoxymuriate will be $29 + 35 + 42 = 106$.

By the old opinion, when 6 atoms of oxymuriatic acid enter the ſolution of potaſh, 5 of them give up their oxygen to the 6th. The firſt 5, which have become muriatic acid, combine with 5 atoms of potaſh, forming 5 atoms of muriate of potaſh. The 6th atom, with its 5 extra atoms of oxygen, combine with an atom of potaſh, forming an atom of the hyperoxymuriate. Here, oxymuriatic acid, as its name indicates, is ſuppoſed to be formed by 1 muriatic acid = 22, and 1 of oxygen = 7, being together equal to 29. The 5 atoms of muriate of potaſh will be $(22 + 35 + 7)$

$\times 5 = 320$; and the atom of hyperoxymuriate will be $(22 + 6 \times 7 + 35 + 7) = 106$, as before. We here ſee that both theſe theories explain the fact, and the reſult is the ſame in both, when the ſame elementary numbers are taken. From theſe data, the compoſition will be in a hundred parts,

Muriate of potaſh - -	60
Oxygen - - - -	40
	100

In claſſing this among the reſt of the ſalts, we might preſume the exiſtence of an acid called the hyperoxymuriatic acid. This, however, has not as yet been obtained in a free ſtate. The euchlorine of ſir Humphrey Davy was at one time thought to be this acid; but ſince the latter is conſtituted by 29 oxymuriatic acid and 7 oxygen, while the acid united to potaſh, forming the ſalt in queſtion, would conſiſt of $29 + 5 \times 7$, ſuch a ſuppoſition cannot be maintained. If the old opinion keep its ground, the proper name for this ſalt, agreeably to what has been laid down under NOMENCLATURE, would be *hectoxymuriate of potaſh*. But if the new opinion prevail, it would be called, according to the nomenclature of Dr. Thomſon, *hectoxychloryde of potaſſium*.

Superphoſphate of Potaſh.—This ſalt is formed by adding the liquid phoſphoric acid to a ſolution of the cryſtallized carbonate of potaſh, till the efferveſcence ceaſes. By evaporation it aſſumes the form of a gelatinous maſs, but does not cryſtallize. It has a ſweetiſh-ſaline taſte. When dry, its ſpecific gravity is 2.85. It attracts humidity from the air, and is very ſoluble in water.

When heated, it firſt undergoes the watery fuſion, afterwards becomes dry. The heat being raiſed, it melts into a tranſparent glaſs, which is deliqueſcent in the air. No analyſis of this ſalt is known. By Dalton's numbers it is 46 acid and 42 potaſh, in 88 parts.

Phoſphate of Potaſh.—This ſalt cannot be formed by directly adding the acid to the alkali, in a ſtate of ſolution; as, in that caſe, the ſalt laſt deſcribed is always formed. In order to form the preſent ſalt, the ſuperphoſphate muſt be fuſed in a platina crucible with a quantity of alkali equal to that already contained in it. The white maſs thus formed is the ſalt in queſtion. The more certain way of forming this ſalt is to boil the alkali and the above ſalt together: a white powder ſubſides, which, being ſeparated and dried, is the pure phoſphate of potaſh. See MURIATIC *Acid*.

Fluate of Potaſh.—This ſalt may be formed by directly adding the liquid fluoric acid to potaſh, till neutrality is effected. Scheele ſays it does not cryſtallize; Wenzel, however, informs us that it does, when perfectly free from ſilex. It diſſolves in water, and melts in a ſtrong heat. See FLUORIC *Acid*.

Borate of Potaſh.—This ſalt may be formed by heating together nitre and borax (borate of ſoda). The nitric acid is driven off, and the potaſh decompoſes the borax. By ſolution in water, and ſlow evaporation, the ſalt is obtained in cryſtals. According to the analyſis of Wenzel, it is compoſed of 100 acid and 30 of potaſh. See BORACIC *Acid*, and BORAX.

Carbonate of Potaſh, or *Pure Subcarbonate of Potaſh* of the Edinb. Pharmacopeia.—This ſalt is called ſalt of tartar, from having been formed by the calcination of tartar. When pure potaſh is expoſed to the air, it ſoon attracts water ſufficient to liquefy it, and alſo carbonic acid, ultimately becoming a ſolution of carbonate of potaſh. By evaporation it affords cryſtals, which require to be kept from the air to prevent their deliqueſcence. This ſalt may alſo be formed by deflagrating nitre with ſupertartrate of potaſh.

The compoſition of this ſalt has been very clearly made out by ſeveral able chemiſts. By Dr. Wollaſton's ſcale, it is compoſed of 68 potaſh and 32 carbonic acid, in the dry ſtate. By Dalton's numbers, of 19.4 acid and 42 potaſh; which in the 100 is 68.3 potaſh and 31.7 carbonic acid. See CARBONATE *of Potaſh*.

Subcarbonate of Potaſh. See POTASSÆ *Carbonas*.

Supercarbonate or *Bicarbonate of Potaſh.*—This ſalt differs from the laſt in containing twice as much carbonic acid. It is formed by adding carbonate of ammonia to the carbonate of potaſh, the ſalt laſt deſcribed, and diſtilling off the ammonia. The ſolution, by evaporation to a certain extent, and by ſlow cooling, affords cryſtals, appearing in plates lying one over the edge of the other. The moſt advantageous way of forming this ſalt is by paſſing carbonic acid gas through a ſtrong ſolution of ſalt of tartar (carbonate of potaſh), in the apparatus, *Plate* XVII. *fig.* 9. (See LABORATORY.) The ſalt cryſtallizes without evaporation, the cryſtals being very large and well-formed.

This ſalt has a cooling taſte, not the leaſt cauſtic, nor ſcarcely alkaline. It diſſolves in about four parts of water at 60°. When diſſolved in boiling water, it ſeems to undergo a partial decompoſition, as bubbles of carbonic acid eſcape: hence it ſhould not only be formed in cold water, but diſſolved in it, when uſed.

When this ſalt is heated to redneſs, it is completely converted into the carbonate of potaſh, having loſt juſt half of its acid. From this fact, which has been mentioned by Dr. Wollaſton, its compoſition will be obvious; being 68 potaſh to 64 carbonic acid, and *per cent.* 47 carbonic acid and 53 potaſh. From Dr. Wollaſton's ſcale, it appears to conſiſt of 2 atoms of acid, 1 of potaſh, and 1 of water. This will give *per cent.* 43 carbonic acid, 47.9 potaſh, and 9.1 water of cryſtallization.

Arſeniate of Potaſh.—This ſalt is formed by adding arſenic acid to potaſh.

It does not cryſtallize. If expoſed to the air in a dry ſtate, it deliqueſces.

When fuſed with a ſtrong heat, it forms a white glaſs. If inflammable matter be preſent, the ſalt is decompoſed by the metal loſing its oxygen. The arſenic ſublimes at the ſame time.

Superarſeniate of Potaſh.—This ſalt, from its name, contains an exceſs of acid, probably twice as much. It is formed by adding more acid to the laſt ſalt. It cryſtallizes in quadrangular priſms. See ARSENIC, § 10.

The molybdate and chromate of potaſh are but little known.

Acetate of Potaſh.—This ſalt may be formed by adding pure acetic acid to a ſolution of carbonate of potaſh, till mutual ſaturation takes place. It is very difficult of cryſtallization, but it may be effected by a very ſlow evaporation. It has a ſharp unpleaſant taſte. It is ſoluble in about its own weight of cold water. It becomes moiſt by expoſure to the air. Like the reſt of the ſalts, with vegetable acid it is decompoſed by a ſtrong heat, the reſiduum being charcoal and potaſh. See ACETIC *Acid*.

The London Pharmacopeia directs it to be prepared by mixing together, in a large glaſs veſſel, 1½ lb. of ſubcarbonate of potaſh and a gallon of (diluted) acetic acid; and having evaporated the ſolution to one-half over the fire, by adding gradually as much more (diluted) acetic acid as may be neceſſary for perfect ſaturation. Let the ſolution be again evaporated to one-half, and ſtrained; then continue the evaporation in a water-bath, ſo that, on being removed from the fire, cryſtals ſhall form.

Acetite of Potaſh of the Edinburgh Pharmacopeia is prepared

pared by boiling one pound of pure carbonate of potaſh, with a very gentle heat, in four or five times its weight of diſtilled acetous acid, and adding more acid at different times, until, the watery part of the former portion being nearly diſſipated by evaporation, the acid newly added occaſions no efferveſcence, which will be the caſe after about 20 pounds of acid have been conſumed; then evaporating ſlowly to dryneſs. Liquefy the remaining in pure ſalt with a gentle heat for a ſhort time; then let it be diſſolved in water, and filtered through paper. Afterwards evaporate this fluid, which, if the liquefaction be properly performed, will be limpid, otherwiſe of a brown colour, in a ſhallow glaſs veſſel, with a very gentle heat; occaſionally ſtirring the ſalt as it concretes, that it may the more quickly become dry. Finally, preſerve the acetite of potaſh in cloſely ſhut veſſels, to prevent its being liquefied by the air.

Acetate of Kali of the Dublin Pharmacopeia is formed by adding to any quantity of ſubcarbonate of kali, at different times, about five times its weight of diſtilled vinegar moderately heated: when the efferveſcence has ceaſed, and the fluid is ſomewhat evaporated, add, at intervals, more diſtilled vinegar, until the efferveſcence entirely ceaſes: then evaporate to dryneſs, and having raiſed the fire a little, cautiouſly liquefy the maſs. Diſſolve the ſalt in water after it is cold; filter the ſolution, and boil it, until, on being removed from the fire, it concretes into a cryſtalline maſs, which ſhould be very white. Put the maſs immediately into cloſe-ſtopped veſſels.

Acetate of Potaſh has a ſlight peculiar odour, and a warm ſharp taſte. One fluid-ounce of diſtilled water at 60° diſſolves 504 grains; or 100 parts of it are ſoluble in 105 parts of water, and in twice its weight of alcohol. In the watery ſolution it is ſpontaneouſly decompoſed; and it is alſo decompoſed by the ſtrong acids, by a decoction of tamarinds, by the ſulphates of magneſia and of ſoda, by the muriate of ammonia, the tartrate of potaſh and ſoda, and by ſolutions of oxymuriate of mercury, and of the nitrate of ſilver; which of courſe cannot enter into formulæ with it. See ACETIC *Acid*.

As to the medical properties and uſes of this ſalt, it is mildly cathartic and diuretic; occaſionally beneficial in febrile affections and jaundice, but principally uſed in dropſies, and other diſeaſes requiring a copious diſcharge of urine. For producing the latter effect, the doſe may be from ℈j to ʒj, given every three or four hours, in any bland fluid. Doſes of ʒij or ʒiij open the bowels. Its officinal preparations are "Acetas hydrargyri," E. D.; "Tinctura acetatis ferri," D.; and "Acidum aceticum," D. Thomſon's Diſp.

Oxalate of Potaſh.—This ſalt is eaſily formed by ſaturating a ſolution of the cryſtals of this acid with potaſh; and by adding a little exceſs of the alkali, the ſalt will be capable of cryſtallization. The cryſtals are long ſix-ſided priſms.

Superoxalate of Potaſh.—This is formed in the wood ſorrel, and is ſold under the names of *ſalt of ſorrel*, and *ſalt of lemons*, and is ſometimes bought for lemon acid. It may be formed artificially, by dropping a ſolution of potaſh, by a little at a time, into a ſaturated ſolution of oxalic acid. The ſalt to be formed is ſo much leſs ſoluble than the acid, that as ſoon as it gets the proper doſe of alkali to conſtitute the ſuperoxalate, it falls to the bottom of the veſſel in ſmall cryſtals, which, when examined minutely, are ſmall four-ſided figures.

Neither of theſe ſalts have been analyſed, but their proportions may be readily calculated, ſince the weight of the atom of oxalic acid is well defined, being about 40 times heavier than that of hydrogen. The firſt ſalt will, therefore, be 40 of acid and 42 of potaſh, or *per cent.* 49 acid and 51 baſe. The ſuperoxalate will be 80 acid and 42 baſe, or in the 100, 65.5 acid to 34.5 baſe. See OXALIC *Acid*, and OXALIS.

Tartrate and Tartrite of Potaſh. See TARTRATE and TARTRITE.

Supertartrate of Potaſh.—This ſalt exiſts in nature, particularly in the juice of the grape. It is generally collected from the ſides of wine-caſks, and may always be ſeen adhering to the ſides of wine-bottles, when the wine has been kept for ſome time. This ſalt, when purified, is known by the names of cream of tartar and cryſtals of tartar. Theſe, when well formed, are ſhort ſix-ſided priſms. It diſſolves in 60 parts of cold water, and in half that quantity of boiling water. When expoſed to heat it ſoon becomes black This ariſes from the decompoſition of the acid, the potaſh being left in the ſtate of carbonate, ſince carbonic acid is one of the reſults of the decompoſition. A portion of the acetic acid is alſo formed during this decompoſition, which may be collected and mixed with ſome empyreumatic oil. This product was called pyrotartareous acid, but is now found to be acetic acid, mixed with the empyreumatic oil.

Tartrate of Potaſh.—This ſalt is known in medicine by the name of ſoluble tartar, to diſtinguiſh it from the laſt, which ſo ſparingly diſſolves in water. It may be readily formed, by adding to the ſupertartrate a ſolution of as much potaſh as it already poſſeſſes. This ſolution, by evaporation and gradual cooling, affords cryſtals in the form of four-ſided priſms.

Its taſte is rather bitter. It is ſoluble in almoſt four parts of cold water, and in much leſs of boiling water. It is decompoſed by heat like the laſt.

The compoſition of the ſupertartrate, according to Bergman, is

Tartaric acid	77
Potaſh -	23
	100

Or,

Tartrate of potaſh	56
Acid -	44
	100

By the analyſis of Thenard, it is

Acid -	57
Potaſh -	33
Water -	7
	97

This laſt is probably near the truth; the firſt is very far from being ſo. See TARTRITE.

The malat, gallat, benzoat, ſuccinat, and ſaccolat of potaſh, are but little known.

Camphorate of Potaſh.—This ſalt is formed by adding camphoric acid to carbonate of potaſh, till carbonic acid ceaſes to be evolved. The ſolution on evaporation affords cryſtals.

This ſalt is ſoluble in four parts of boiling water, and in 100 parts at 60°. It diſſolves in alcohol, which cauſes it to burn with a blue flame. See CAMPHOR.

The reſt of the ſalts of potaſh are not known to poſſeſs remarkable properties.

Sulphate of Barytes.—This ſalt exiſts abundantly in nature under the name of ponderous earth, and *caulk*. From its inſolubility in water, it cannot be formed artificially but in the ſtate of white powder. In nature it occurs in cryſtals, in the form of tranſparent plates, or rather four-ſided priſms, the baſes being rhombs; the primitive form of the cryſtals being the ſame. To all appearance, it is the moſt ſoluble ſalt which has occurred. Boiling water diſſolves more than half its weight, but cold water diſſolves only $\frac{1}{25}$th. Boiling ſulphuric acid diſſolves it, but it is precipitated by the addition of water. When expoſed to the heat of 35° of Wedgewood, it fuſes into an opaque glaſs or enamel. No ſingle acid or baſe is capable of decompoſing this ſalt, but the carbonates of potaſh and ſoda are ſaid to decompoſe it by double decompoſition. The moſt effectual way of ſeparating the earth from it, is to expoſe it mixed with ſaw-duſt, in a covered crucible, to a ſtrong red heat for ſeveral hours. The ſulphate is by this operation converted into a ſulphuret, which is ſoluble in water. The ſulphur may now be ſeparated by weak nitre, or acetic acid, which diſſolves the barytes. The acid may afterwards be driven off by a red heat. The analyſis of Kirwan, which ſeems the moſt correct, is

Barytes	-	67
Sulphuric acid		33
		100

Aikin makes it

Barytes	-	66.04
Acid	-	33.96
		100

Dalton's numbers give the acid 34, and the barytes 68. This reduced to 100, gives

Barytes	-	66.75
Acid	-	33.25
		100

See Barytes.

Nitrate of Barytes. See Nitrate *of Barytes,* under which article the reader is deſired to correct the number expreſſing its ſpecific gravity, and to ſubſtitute 2.92.

According to Kirwan, its conſtituents are

Acid	-	32
Barytes	-	57
Water	-	11
		100

By Dalton's numbers, this ſalt is compoſed of two atoms of acid, and one of baſe; and from the laſt analyſis it would ſeem two atoms of water. Theſe would make $2 \times 19 + 68 + 2 \times 8 = 122$. This reduced to 100, gives

Acid	-	31.1
Baſe	-	56.7
Water	-	12.2
		100

Muriate of Barytes.—This ſalt may be formed preciſely by the ſame directions as the laſt, uſing the muriatic acid as the ſolvent. The evaporation being now carried to a certain extent, the liquid may be ſet aſide to cryſtallize. Theſe cryſtals will be more complete by leaving the ſolution, ſlightly covered with a piece of gauze, to ſpontaneous evaporation. If a few cryſtals of the ſame ſalt are placed in the ſolution as ſoon as the cryſtallization begins, they will form needles for the new cryſtals, which may be obtained of great ſize. Under ſome circumſtances the cryſtals are apt to become yellow, but the cauſe of this colour does not appear obvious. There is another method of preparing this ſalt, when the carbonate of barytes cannot be procured, by firſt converting the ſulphate, which is very abundant in the vicinity of moſt lead-mines, into a ſulphuret, as directed in decompoſing the ſulphate of barytes, and adding muriatic acid to the ſulphuret. This precipitates the ſulphur, and forms muriate of barytes. This ſolution, filtered and evaporated, affords cryſtals of the ſalt. Theſe cryſtals are in the form of plates, but when examined, they are four-ſided priſms, with ſquare baſes.

It has a ſtrong and diſagreeable taſte, and is ſaid, like the reſt of the barytic ſalts, to be poiſonous. It is not altered by expoſure to the air. It diſſolves in about twice its weight of water at 60°, and is not much more ſoluble in hot water. Hence its cryſtallization is to be effected by a ſlow evaporation, rather than by a ſlow cooling. It decrepitates at the ſame heat that other ſalts do, and is not decompoſable at the ſtrongeſt heat. In the fuſed ſtate it is conſidered, by the new doctrine, as a compound of chlorine and barium, which would in the 100 be 65.5 barium, and 34.5 chlorine.

In its cryſtalline ſtate, Kirwan makes its compoſition to be

Acid	-	20
Barytes	-	64
Water	-	16
		100

Fourcroy's analyſis gives

Acid	-	22.93
Barytes		62.47
Water	-	14.6
		100

Aikin's gives

Acid	-	24
Barytes	-	60
Water	-	16
		100

Dr. Wollaſton's ſcale gives for the dry ſalt

Acid	-	26
Barytes	-	74
		100

And the cryſtallized would be from the ſame

Acid	-	22.25
Baſe	-	63
Water	-	14.75
		100

Dalton's numbers will give 22 acid, 68 baſe, and 16 water, which *per cent.* is

Acid	-	20.75
Baſe	-	64.1
Water	-	15.15
		100

This ſalt is uſed only as a chemical teſt for detecting the preſence of ſulphuric acid, and in determining the proportion in which that acid exiſts in different bodies. See Barytes.

The muriate of barytes is prepared, according to the directions of the Edinb. Pharm., by mixing together three parts of water, and one part of muriatic acid, and adding one part of carbonate of barytes broken into ſmall pieces. When the effervеſcence terminates, digeſt for an hour; then filter, and after due evaporation ſet the ſolution apart, that cryſtals may be formed; and repeat the evaporation as long as any cryſtals are formed. If the carbonate of barytes cannot be procured, the muriate of barytes may be formed in the following manner:

"Take of ſulphate of barytes, two pounds; charcoal in powder, four ounces. Roaſt the ſulphate, that it may be the more eaſily reduced to a very fine powder, and mix it with the powder of charcoal. Put the mixture into a crucible, and having fitted to it a cover, let it be expoſed to a ſtrong fire for ſix hours; then, having well triturated the matter, put it into ſix pounds of boiling water, in a glaſs or earthen veſſel, and mix by agitation, preventing, as much as poſſible, the action of the air.

"Let the veſſel ſtand in a vapour-bath until the undiſſolved part ſhall have ſubſided, and then pour off the liquor. Pour on the reſidue four pounds of boiling water, which, after agitation and ſubſidence, add to the former liquor; and then, while it is ſtill hot, or, if it ſhall have cooled, after it is again heated, let muriatic acid be dropped into it as long as any effervеſcence is excited. Then let the ſolution be filtered and evaporated, that cryſtals may be formed."

Several other methods have been propoſed for the preparation of this ſalt, the beſt of which is the following, recommended by Bouillon la Grange (Annales de Chimie, xlvii. 131.) Pulverize together equal parts of ſulphate of barytes and muriate of lime; project the mixture into a red-hot crucible, and let the fire be continued till the whole be melted, which is then to be poured out on a heated tile. After it is cold, reduce the maſs to powder; boil it for ſome minutes in ſix times its weight of diſtilled water, and filter the ſolution: then evaporate the liquor to a pellicle, and ſet it aſide to cryſtallize. The cryſtals require to be re-diſſolved and again cryſtallized, to free them from any of the calcareous muriate they may retain on the firſt cryſtallization. The Edinburgh proceſs, however, is ſtill preferable to this of La Grange, as the previous calcination reduces any metallic ſalts that may be combined with the ſulphate; and being thus rendered inſoluble, they are ſeparated during the firſt ſolution of the ſulphuret. Goetling adviſes muriate of ſoda to be added to the charcoal, by which a ſmaller quantity of charcoal is capable of reducing a larger quantity of ſulphate of barytes. A mixture of one part of muriate of ſoda and two parts of muriate of lime is ſufficient to decompoſe ſix of ſulphate.

Muriate of barytes has an acrid, very nauſeous, bitter taſte. It cryſtallizes in grouped quadrangular tables, bevelled on the edges; tranſparent, white, and very brilliant; of a ſpecific gravity of 2.8257; and not alterable from expoſure to the air. When heated, it decrepitates, becomes opaque, and ultimately melts, but is not decompoſed. One part requires three of water at 60° for its ſolution, and 2.20 of hot water. According to Kirwan, the conſtituents of 100 parts of this ſalt are, 64 of barytes, 20 of muriatic acid, and 16 of water. It is uſed only for forming the following ſolution, which is directed in the Edinb. Pharm. to be prepared by diſſolving one part of the muriate of barytes in three parts of diſtilled water. This ſolution poſſeſſes all the chemical and medicinal properties of the muriate. It is limpid, tranſparent, and colourleſs; but is rapidly decompoſed by the earthy, metallic, and alkaline ſulphates and nitrates; the alkaline phoſphates, borates, and carbonates, being precipitated in the form of a white powder. Its affinity for ſulphuric acid is ſo great, that, as a re-agent, it is capable of detecting 0.00009 of that acid in any fluid.

This ſolution is ſtimulant and deobſtruent, and in large doſes poiſonous. It was introduced into practice by the late Dr. Crawford as a remedy for cancerous and ſcrophulous affections; and its uſe was afterwards extended to ſyphilis. When taken in moderate doſes, it appears to increaſe the ſecretion by the ſkin, augments the flow of urine, and improves the tone of the ſyſtem; but by large doſes, violent vomiting, purging, vertigo, and the moſt dangerous ſymptoms, are produced. It has undoubtedly been found beneficial in ſeveral inſtances of ſcrophula, in ſome cutaneous affections, and in ulcerations connected with elephantiaſis; while in ſyphilis it has the power of ſuſpending ſome of the ſymptoms for a ſhort period. But although it be a medicine of ſome efficacy, yet, to uſe the words of Mr. Pearſon, in whoſe opinion of its deficient powers as an antiſyphilitic we place implicit faith, its "good qualities are uncertain in their operation, and narrowly circumſcribed; nor is it a preparation on which great confidence can be placed for the cure of any diſeaſe." The doſe requires to be carefully apportioned, and very gradually increaſed, until from ♏ v, which are ſufficient at firſt, ♏ xx be taken twice a day; or more, if nauſea be not excited.

It is ſometimes uſed externally as an eſcharotic to fungous ulcers and ſpecks on the cornea. Thomſon's Diſp.

Phoſphate of Barytes.—The moſt ſimple proceſs for forming this ſalt, is to add a ſolution of phoſphate of ſoda to a ſolution of muriate of barytes. The acids exchange baſes, and the phoſphate of barytes is precipitated in the form of a white powder, having no taſte. This ſalt is not ſoluble in water. Its ſpecific gravity is 1.2867. With the heat of a furnace it melts into a white enamel. Its compoſition is not known by analyſis, but by theory it ſhould conſiſt of

Barytes -	74.5
Phoſphoric acid	24.5
	99

The phoſphorous acid combines with barytes by treating phoſphate of ſoda with the muriate of barytes. It is inſoluble like the laſt, and has no very diſtinguiſhing characters.

Fluate and Borate of Barytes.—Little known.

Carbonate of Barytes.—This ſalt exiſts in nature in ſeveral parts of England. It was firſt diſcovered by Dr. Withering, and has been very improperly called *Witherite.*

The form of its cryſtals in the native ſtate is various. It is found with double pyramids, ſometimes with ſix and alſo with four ſides. It alſo occurs in ſix-ſided priſms, terminated by ſimilar ſided pyramids. It frequently appears like bundles of needles radiating from a point. Its ſpecific gravity is 4.331. It is ſaid to be ſoluble in $\frac{1}{4304}$ of cold, and $\frac{1}{2304}$ of boiling water. It is not altered by expoſure to the air. Its compoſition, according to Withering, is

Carbonic acid	20
Barytes -	80
	100

According to Pelletier, it is compoſed of

Acid -	22
Barytes -	62
Water -	16
	100

The

This ſalt may be prepared artificially by adding carbonate of potaſh to muriate or nitrate of barytes. The ſalt is precipitated in a white powder, which requires to be ſeparated by filtering, waſhing, and drying. This powder is of the ſpecific gravity 3.763. Its compoſition, according to Bergman, is

Acid	-	7
Barytes	-	65
Water	-	28
		100

According to Kirwan, the ignited ſalt is

Acid	-	22
Barytes	-	78
		100

By Dr. Wollaſton's ſcale, it is

Acid	-	22
Barytes	-	78
		100

By Dalton's numbers,

Acid	-	22
Barytes	-	78
		100

There is in all probability a bicarbonate of barytes, which is much more ſoluble in water. This would conſiſt of

Acid	-	38
Barytes	-	68
		106

Arſeniate of Barytes.—This is an inſoluble ſalt, little known.

Molybdate and Chromate of Barytes.—Not known.

Acetate of Barytes.—This ſalt may be formed by diſſolving the carbonate of barytes in acetic acid. By evaporation it affords cryſtals in the form of needles, which are ſix-ſided priſms. It has an acid bitteriſh taſte, and is ſoluble in water; it ſlightly effloreſces in the air. See ACETITE *of Barytes.*

Oxalic acid in exceſs, added to barytes, conſtitutes a ſuper-acetate, which affords cryſtals, and is ſparingly ſoluble in water. When neutral it becomes an inſoluble powder.

Tartrate of Barytes.—Not known.

Citrate of Barytes.—Citric acid diſſolves barytes, forming at firſt a white powder, but gradually aſſumes the form of ſilky flakes of a beautiful appearance.

Benzoate of Barytes is ſoluble in water.

The reſt of the ſalts of barytes are at preſent but little known.

Sulphate of Ammonia.—This ſalt is formed by ſaturating carbonate of ammonia with ſulphuric acid. By evaporation it affords cryſtals, which are ſix-ſided priſms, terminated by ſix-ſided pyramids. Theſe are extremely ſmall, like needles, when the evaporation is too rapid.

Its taſte is ſharp, bitter, and diſagreeable. It diſſolves in two parts of water at 60°, and in half that quantity of boiling water.

It becomes moiſt by expoſure to the air.

When heated it decrepitates. If the heat be continued it ſublimes, loſing a part of the alkali, and paſſing to the ſtate of a ſuper-ſalt. The heat at length favours the decompoſition of the acid by the hydrogen of the ammonia, by which azotic gas is produced.

Its compoſition, according to Kirwan, is

Acid	-	54.66
Ammonia		14.24
Water	-	31.1
		100

By Dalton's numbers, and ſuppoſing the ſalt to be conſtituted by one atom of acid to two atoms of ammonia, we have

Acid	-	74
Ammonia		26
		100

See CARBONATE *of Ammonia.*

Nitrate of Ammonia.—This ſalt is formed by adding carbonate of ammonia to nitric acid till the efferveſcence ceaſes. On evaporation this ſalt cryſtallizes in long priſmatic cryſtals, terminating in pyramids. To give them the latter form, the evaporation is made with a low heat, not more than 100°. When evaporated at the boiling point, the cryſtals aſſume a fibrous form. If the heat be ſtill raiſed higher up to 250° or 300°, the maſs on cooling aſſumes a compact form.

The taſte of this ſalt is very acrid and diſagreeable. Its ſpecific gravity is 1.5785. It is ſoluble in two parts of cold, and in half its weight of boiling water. It is deliqueſcent in the air.

When the cryſtals of this ſalt are put into a glaſs retort, and placed over an Argand lamp, it melts at about 100°. By keeping it in a boiling ſtate, the water diſtils over, and the heat requires to be gradually raiſed in order to keep up the ebullition. When the temperature reaches about 450°, a number of bright bubbles begin to appear on the ſurface, aſſuming a different appearance to that of the boiling of a fluid. Theſe bubbles reſult from the decompoſition of the ſalt, and are no other than the gas called nitrous oxyd, which comes rapidly over. The whole ſalt is, in this proceſs, converted into water and nitrons oxyd, and ultimately the retort becomes empty. (See *Nitrous* OXYD.) The decompoſition of this ſalt ſufficiently points out its conſtituents, and admits of a ſimple explanation by Dalton's numbers. His number for nitric acid is 19, *viz.* 1 of azote 5 + 2, of oxygen 2 × 7. His atom of ammonia conſiſts of 1 of azote, 5, and 1 of hydrogen, 1, and the number for it will be 6. The nitrate of ammonia is therefore conſtituted by 1 atom of nitric acid, 19, and 1 of ammonia, 6. An atom of hydrogen in the ammonia combines with 1 of oxygen in the nitric acid, forming water, and the azote of the ammonia combines with the other atom of oxygen and azote of the nitric acid, forming an atom of nitric oxyd, which is conſtituted by 1 atom of oxygen and 2 of azote. The whole ſalt being made of 2 oxygen = 14, 2 azote = 10, and of 1 of hydrogen = 1, the whole being 25, the reſult will be 1 + 7 = 8 water, and 7 + 2 × 5 = 17, the nitrous oxyd. Hence the ſalt will be *per cent.* without water,

Acid	76
Ammonia	24
	100

The ſalt in priſmatic cryſtals will contain an atom of water, and will then be, acid 57.5, ammonia 18.2, water 24.3; amounting to 100.

According to Kirwan's analyſis, it is acid 57, ammonia 23, water 20; amounting to 100. See Ammonia.

Muriate of Ammonia. See Sal *Ammoniac.*

Phoſphate of Ammonia.—This ſalt is prepared, like the laſt, by adding carbonate of ammonia to phoſphoric acid.

By evaporation it forms cryſtals in the form of four-ſided priſms, terminated by pyramids. When theſe are ſmall they appear like needles. It has, like moſt of the ammoniacal ſalts, a ſharp diſagreeable taſte.

It diſſolves in two parts of water at 60°. It is deliqueſcent in the air.

When heated in a retort, the ſalt firſt parts with ſome ammonia, leaving the ſalt in the ſtate of a ſuper-ſalt.

The acid undergoes decompoſition, probably from the hydrogen of the ammonia, as ſome phoſphorus comes over diſſolved in ammonia, and in the ſtate of phoſphuretted hydrogen. Ultimately all the ammonia is expelled, leaving the phoſphoric acid in the ſtate of glaſs.

There ſeems to be no accurate analyſis of this ſalt.

Fluate of Ammonia.—This ſalt is obtained by ſaturating carbonate of ammonia with liquid fluoric acid. It cryſtallizes and ſublimes by heat.

Subcarbonate of Ammonia.—To form this ſalt in a ſtate of purity, let five parts of dry powdered chalk be mixed with three of muriate of ammonia, alſo very dry and in powder. Place the mixture in a crucible of cloſe texture, having a groove round the top; let a diſh-like or conical veſſel of the materials be inverted over this, and filling the groove. This latter veſſel ſhould have a ſmall hole in the top, with a ſtopper, to remove occaſionally. Place the lower veſſel in a gentle ſand heat. The carbonic acid of the carbonate of lime combines with the ammonia of the muriate, forming carbonate of ammonia, which ſublimes at the heat of boiling water. This ſalt condenſes into a cake in the inverted veſſel, having a cryſtalline texture. In this ſtate it is ſold in the ſhops, under the name of volatile ſalt.

It is of a fine white colour, having a ſtrong ſmell of ammonia, and a ſlightly acrid yet cooling taſte. It changes moſt vegetable blues to green. Its ſpecific gravity is 0.966. It is inſoluble in alcohol, but diſſolves in two parts of cold water, and is much more ſoluble in hot water. Boiling water volatilizes it. This laſt property has rendered it uſeful to paſtry cooks. It is diſſolved in the water or milk with which the paſte is made. In the baking, the ſalt riſes in vapour, and makes the paſtry light and honey-combed. When expoſed to the air, it ſoon loſes its ſtrong ſmell, and is converted into a ſalt, which contains juſt half the quantity of ammonia, and which is named *carbonate of ammonia.*

The compoſition of this ſalt has the appearance of being very irregular.

When newly formed its proportions are, by Dr. Wollaſton's ſcale, carbonic acid 44, ammonia 56; amounting to 100.

When it has been expoſed to the air till it has no ſmell, its compoſition will be, acid 82, ammonia 18; amounting to 100.

Bergman makes its conſtituents to be 45 parts of carbonic acid, 43 ammonia, and 12 water,—in 100 parts; by which there would appear to be ſeven grains of ammonia in exceſs; but ſir Humphrey Davy has found, that the quantity of alkali varies according to the temperature that has been employed in the preparation: thus, when it is formed at a temperature of 300°, it contains rather more than 50 *per cent.* of ammonia; but produced at a temperature of 60°, it contains only 20 *per cent.*

The carbonate of ammonia of the Lond. Pharm. is formed by pulverizing ſeparately one pound of muriate of ammonia, and two pounds of prepared chalk, dried: then mixing them, and ſubliming with a gradually increaſed heat, until the retort becomes red-hot. The carbonate of ammonia of the Edinb. Pharm. is prepared by taking one pound of muriate of ammonia, and two pounds of ſofter carbonate of lime, dried, pulverizing each of them ſeparately, mixing them, and ſubliming from a retort into a receiver kept cold. That of Dublin is formed by mixing muriate of ammonia, reduced to powder, and well dried, carbonate of ſoda dried, of each half a pound; putting them into an earthen retort, and ſubliming with a heat gradually increaſed into a receiver kept cold. This ſalt, notwithſtanding the name by which it is deſignated in the reſpective colleges, is merely a ſubcarbonate. Subcarbonate of ammonia is decompoſed by the acids, the fixed alkalies, barytes and lime, and partially by magneſia.

As an article of the Materia Medica, this ſalt is ſtimulant, antiſpaſmodic, antacid, diaphoretic, and in large doſes emetic. It is beneficially given in gout, hyſteria, and dyſpeptic affections, when much acid is preſent in the ſtomach; and in infantine convulſions connected with dentition, or with acidity of the primæ viæ. As a diaphoretic it is occaſionally exhibited in chronic rheumatiſm, in combination with guaiacum; and ſometimes, though rarely, it is employed to produce vomiting in gouty and paralytic caſes. From the ammonia it contains in exceſs, the ſubcarbonate is applied as a local ſtimulant to the noſtrils in ſyncope, hyſteria, and languors; and with the addition of a little ſcent forms the common ſmelling ſalts of the ſhops. The ordinary doſe is from grs. v to grs. xx, formed into pills, or diſſolved in any aqueous vehicle; but to excite vomiting ʒſs may be given for a doſe, and repeated, if neceſſary, aſſiſting its operation by plentiful dilution.

Its officinal preparations are as follow: *viz.* "Liquor ammoniæ carbonatis," or ſolution of carbonate of ammonia, which the Lond. Pharm. directs to be prepared by diſſolving 8 oz. of carbonate (ſub-carbonate) of ammonia in a pint of diſtilled water, and filtering through paper. The "Aqua carbonatis ammoniæ," or water of carbonate of ammonia, formerly water of ammonia, or ſpirit of ſal ammonia, of the Edinb. Pharm. is formed by pouring 2 lbs. of water on muriate of ammonia and carbonate of potaſs, of each 16 oz. mixed and put into a glaſs retort; then diſtilling to dryneſs, from a ſand-bath, with a fire gradually raiſed. The water of carbonate of ammonia of the Dubl. Pharm. is prepared, by diſtilling, with a fire gradually raiſed, 2 pints from a pound of muriate of ammonia, 28 oz. of carbonate of ſoda, and 3 pints of water. The ſpecific gravity of this liquor is to that of diſtilled water as 1095 to 1000. This ſolution has the odour and taſte of the concrete ſub-carbonate; it is limpid and colourleſs; and when ſhaken with twice its bulk of alcohol, a coagulum, nearly uniform, is formed. Its medical properties and uſes are the ſame with thoſe of the concrete ſalt. It is given in doſes of from fʒſs to fʒj in any bland fluid.

Other preparations of the carbonate (ſub-carbonate) of ammonia, are the London "Carbonate of potaſh," the "Carbonate of ſoda," (ſee Carbonate, Potash, and Soda,) the "Liquor ammoniæ acetatis," (ſee the next article,) and "Cuprum ammoniatum." The latter is formed according to the direction of the Lond. Pharm. by rubbing together in a glaſs mortar half an ounce of ſulphate of copper and 6 drachms of ſubcarbonate of ammonia until the effervefcence ceaſes; then wrapping up the ammoniacal copper in bibulous paper, and drying it with a gentle heat. The "Ammoniaret of copper" of the Edinb. Pharm. is obtained by rubbing thoroughly together in a glaſs mortar 2 parts of pure ſulphate of copper with 3 parts of carbonate of ammonia, until the effervefcence is finiſhed, and they unite in a violet-coloured maſs, which, wrapped up in bibulous paper, is dried, firſt on a chalk ſtone and afterwards with a gentle heat. It is preſerved in a well-ſtopped glaſs phial. The Dublin Pharm. directs the ammoniated copper to be prepared by rubbing an ounce of ſulphate of copper with an ounce and a half of carbonate of ammonia, in an earthenware mortar, until the effervefcence has ceaſed, and they unite in a maſs, which is dried, wrapped up in bibulous paper, or preſerved in a phial cloſed with a glaſs ſtopper. See Copper.

This preparation has the odour of ammonia, a hot, ſtyptic, metalline taſte, and a rich blue colour. Expoſure to the air deſtroys the blue colour, and gives the ſalt a greeniſh hue. Ammoniated copper is tonic and antiſpaſmodic. It has been principally employed in epilepſy, as a remedy for which it was firſt propoſed by Dr. Cullen, and it has ſince been employed with advantage; though Mr. Thomſon ſuggeſts from his own trials that it does not warrant any great dependence. The doſe is gr. ¼, gradually increaſed to grs. v, given twice a day, either ſimply in pills of crumb of bread, or combined with valerian. The ſolution of ammoniated copper (Lond. Pharm.) is formed by diſſolving a drachm of the copper in a pint of diſtilled water, and filtering the ſolution through paper; or the water of ammoniated copper (Dub. Pharm.) is prepared by mixing together 8 fluid-ounces of lime-water, 2 ſcruples of muriate of ammonia, and 4 grains of prepared verdigris, digeſting for 24 hours, and pouring off the clear liquor. This ſolution is detergent and mildly eſcharotic; and it forms an uſeful local ſtimulant for cleaning foul indolent ulcers, and diſpoſing them to heal; and it is alſo employed, ſtill more largely diluted, for removing ſpecks from the cornea. Thomſon.

The arſeniates, molybdate, and chromate of ammonia, are but little known.

Acetate of Ammonia. (See Acetate *of Ammonia.*) Its cryſtals, which are difficult to obtain from the volatility of the ſalt, are in the form of needles.

It is capable, like the carbonate and muriate of ammonia, of being ſublimed when its cryſtals are much more complete.

Theſe are of a pearl-white colour. It has a ſweetiſh cooling taſte.

It is deliqueſcent in the air. It melts at 170°, and is volatile at 250°.

Its compoſition has not been determined with preciſion.

The "liquor ammoniæ acetatis" of the Lond. Pharm. is prepared by adding four pints of (diluted) acetic acid to two ounces of (ſub) carbonate of ammonia, until the effervefcence ceaſes. The "water of acetite of ammonia," (Edinb.) or "ſpiritus Mindereri," is formed by pouring on any quantity of carbonate of ammonia in powder as much diſtilled acetous acid as will exactly ſaturate the ammonia. The "water of acetate of ammonia" (Dubl.) is prepared by adding in ſmall portions, with frequent agitation, 3½ pints of diſtilled vinegar to two ounces of carbonate of ammonia, or as much as will ſaturate the ammonia, which may be aſcertained by means of litmus. This ſolution is inodorous, has a ſlightly nauſeous taſte, and when made with pure materials, is limpid and colourleſs. It is decompoſed by acids, the fixed alkalies, the ſtrong acids, oxymuriate of mercury, and nitrate of ſilver, which are therefore incompatible with the formulæ preſcribing the uſe of it. As a diaphoretic it is in common uſe in febrile diſeaſes, combined with opium, camphor, antimonials, or nitrate of potaſs. It is neceſſary to aſſiſt its determination to the ſkin with plentiful dilution, and a moderate degree of external heat; for by free expoſure to cool air it excites the kidnies, inſtead of opening the ſkin. Externally, it is employed as a diſcutient; as a lotion to inflamed ſurfaces; and when diluted with roſe-water holding in ſolution a ſmall portion of opium, it is an excellent collyrium in chronic ophthalmia; and ſtill more largely diluted, is occaſionally uſed as an injection in the commencement of gonorrhœa. The ordinary doſe is from fʒij to fʒxij, given every three or four hours. Thomſon. See Ammonia, and Sal *Ammoniac.*

Oxalate of Ammonia.—This ſalt is formed like the laſt. It does not cryſtallize; it is employed in ſolution as a chemical teſt for lime.

Tartrate of Ammonia.—This ſalt has a cooling, bitter taſte, and is very ſoluble in water. It is decompoſed by heat. It combines with exceſs of acid, forming a ſalt of little ſolubility, ſimilar to the ſupertartrate of potaſh.

Salts, *Earthy*, are compounds of the acids with the pure earths, reſembling the ſalts formed by the combination of acids with alkalies. Some of them are cryſtallizable, and ſoluble in water; others are nearly inſoluble: ſome of them, conſidered in a medical view, exert ſcarcely any action in the animal economy; while others are poſſeſſed of great activity, and produce very ſtriking effects.

The following Table, which we extract from "Thomſon's London Diſpenſatory," ſhews the ſolubility of the above earths, and of the compounds which they form with acids.

Pure Earths.	Solubility in one Part of Water.	Acids which, in combination with theſe Earths, form		
		Soluble Compounds.	Compounds ſcarcely ſoluble.	Inſoluble Compounds.
Lime	0.002	Nitric Muriatic Acetic Benzoic	Sulphuric Boracic	Phoſphoric Carbonic Arſenic
Magneſia	0.000	Sulphuric Phoſphoric Nitric Muriatic Acetic Benzoic Succinic	Boracic	Carbonic
Barytes	0.050	Nitric Muriatic Acetic Benzoic	Succinic	Sulphuric Phoſphoric Carbonic Boracic Arſenic
Alumina	0.000	Sulphuric Nitric Muriatic Acetic Benzoic		Phoſphoric Carbonic Boracic Arſenic

The following Table, extracted from the valuable work already cited, and formed on the more general table of Dr. Thomſon, in his excellent "Syſtem of Chemiſtry," 4th ed. iii. 568, preſents a ſynoptical view of the neutral ſalts with alkaline and earthy baſes, employed as remedies, or for pharmaceutical purpoſes.

Salts.	Taſte.	Figure of Cryſtals.	Action of Air.	Solubility in 100 parts of Water		Action of Heat.
				at 60°.	at 212°	
Sulphate of barytes	None	Rhomboidal priſms	None	0.002	0	Decrepitates.
——— potaſh	Bitter	Six-ſided priſms	None	6.25	24	Decrepitates.
——— ſoda	Bitter	Six-ſided priſms	Effloreſces	35	125	Watery fuſion.
——— magneſia	None	Four-ſided priſms	Effloreſces	100	133	Watery fuſion.
Alum	Aſtringent	Octahedrons	Little	5	133	Watery fuſion.
Nitrate of potaſh	Cooling	Six-ſided priſms	None	14.3	100	Melts.
Muriate of barytes	Aſtringent	Four-ſided priſms	None	43		Decrepitates.
——— ſoda	Salt	Cubes	None	35.46	36.16	Decrepitates.
——— lime	Bitter	Six-ſided priſms	Deliqueſces	400		Watery fuſion.
——— ammonia	Acrid	Four-ſided pyramids	Subdeliqueſces	31		Sublimes
——— magneſia	Bitter	Needles	Deliqueſces	151		Watery fuſion.
Hyperoxymuriate of potaſh	Cooling	Rhomboidal plates	None	6	40	Gives out oxygen.
Phoſphate of lime	None	Six-ſided priſms	None	0	0	Little.
——— ſoda	Salt	Rhomboidal priſms	Effloreſces	25	50	Watery fuſion.
Borax	Styptic	Six-ſided priſms	Subeffloreſces	5	16.8	Watery fuſion.
Carbonate of barytes	None	Various	None	0.023	0.043	Little.
——— lime	None	Rhomboidal priſms	None	0	0	Decrepitates.
——— potaſh	Alkaline	Four-ſided priſms	None	25	$83\frac{1}{3}$	Watery fuſion.
——— ſoda	Alkaline	Octahedral truncated	Effloreſces	50	100 +	Watery fuſion.
——— magneſia	None	Six-ſided priſms	Effloreſces	2		Decrepitates.
——— ammonia	Urinous	Irregular	None	50 +	100	Evaporates.
Acetate of potaſh	Hot	Plates	Deliqueſces	99		Melts.
——— ammonia	Cool	Slender priſms	Deliqueſces	Very ſoluble.		Melts and ſublimes.
Tartar	Acid	Irregular priſms	None	$1\frac{2}{3}$	$3\frac{1}{3}$	Melts.
Tartrate of potaſh	Bitter	Four-ſided priſms	None	25		Melts.
——— potaſh and ſoda	Bitter	Eight-ſided priſms	Effloreſces	25		Melts.

SALTS, *Metallic.* See METALS, in the *Materia Medica.* The reader is deſired to inſert in that article, for Todd's London Diſpenſatory, Todd Thomſon's, &c.

SALT, *Bitter, Purging,* or *Epſom.* See SAL, EPSOM *Salt*, and *Sulphate of* MAGNESIA.

SALTS, *Cryſtallizable,* in *Chemiſtry,* diſtinguiſh and comprehend all ſaline matters ſuſceptible of cryſtallization; in contradiſtinction to *fluor* SALTS; which ſee.

SALT *of Colcothar* is a white ſaline matter, obtained by lixiviating colcothar.

SALTS, *Deliqueſcent,* a denomination comprehending all ſaline matters, which may be obtained by cryſtallization, or drying in a concrete form, but which, when expoſed to the air, imbibe its moiſture, and loſe their concrete cryſtallized form, deliquiating into a liquor by means of this moiſture. See DELIQUESCENCE.

SALT, *Diuretic.* See SAL *Diureticus*, and ACETATE *of Potaſh.*

SALT *of England,* is a name given to a very rectified, concrete, volatile alkali obtained from ſilk; and alſo to the concrete volatile alkali obtained from ſal ammoniac.

SALTS, *Eſſential,* include all concrete ſaline matters which preſerve the ſmell, taſte, and all other principal qualities of bodies from which they were obtained, which bodies are only vegetable or animal. The uſual method of preparing them is by evaporating, to almoſt the conſiſtence of a ſyrup, the liquors containing the eſſential ſalt, *viz.* the expreſſed and depurated juices and ſtrong decoctions, and by keeping them in a cold place. From many of theſe liquors, ſaline matters or cryſtals are depoſited upon the ſides of the containing veſſels after a conſiderable time, and after they have undergone a kind of fermentation. Theſe cryſtals, which are always very red, may be purified by diſſolving them in water, filtrating, evaporating, and cryſtallizing. Theſe mineral ſalts are extraneous to the vegetables and animals from which they are obtained; and are procured in the ſame ſtate in which they were introduced. The beſt known of theſe eſſential ſalts is *tartar;* which ſee.

SALTS, *Fixed,* a name given by many chemiſts to the ſalts obtained from the aſhes of plants, which, not having been diſſipated by fire, ought to be conſidered as fixed, in compariſon of the other ſaline matters of theſe plants, which evaporate during their deflagration. As the ſaline ſubſtances remaining in the aſhes of vegetables are entirely or chiefly alkaline, the name of fixed ſalt has become ſynonimous with that of *Fixed* ALKALI; which ſee. But other ſaline ſubſtances, as moſt neutral ſalts, which have not baſes of volatile alkali, are nearly as fixed as fixed alkali.

SALT, *Foſſile.* See ROCK-*Salt* and *Common* SALT.

SALTS, *Fluor,* diſtinguiſh and include all ſaline ſubſtances, which cannot by any method be rendered ſolid; ſuch are nitrous and marine acids, volatile alkali altered by quicklime, and ſome others.

SALT, *Fuſible, of urine,* called alſo *native* or *eſſential ſalt* *of urine, phoſphoric ſalt,* and *microcoſmic ſalt,* is a neutral ſalt, compoſed of phoſphoric acid, ſaturated with an alkali fixed or volatile.

It is beſt prepared from putrefied human urine ; but it may be prepared from freſh. A quantity of the urine of ſound beer-drinking men being putrefied in a moderate heat, and then ſlowly boiled in glazed earthen veſſels to the conſiſtence of a ſyrup ; if this liquor be placed in a cellar or cool place, in about four weeks time, or ſooner in winter, cryſtals of a peculiar figure will be formed. But theſe, being impure, muſt again be diſſolved in a ſufficient quantity of water, and filtered as hot as poſſible through grey paper, and the ſolution again put in a cool place, where, in a few days, cryſtals will again be formed much cleaner than the former. Theſe being ſeparated from the liquor and dried, the operations of ſolution, filtration, and cryſtallization, muſt be reiterated twice or thrice, till the ſalt becomes perfectly white and without ſmell.

Mr. Margraff ſays, that a hundred, or a hundred and twenty meaſures of urine, give about three or four ounces of this ſalt, which always cryſtallizes firſt, and is eaſily diſtinguiſhed from that which appears afterwards in cryſtals of a long and cubical form.

This ſalt is ammoniacal, but of a peculiar nature. It is a ſaline acid body. By diſtillation an urinous volatile ſpirit firſt riſes. The reſiduum may be reduced by a violent fire into a pellucid white tranſparent maſs like glaſs, of a very fixed nature, and from which neither acid nor any thing elſe can be ſeparated, without the addition of ſome other matter.

This vitreous ſubſtance may be entirely diſſolved in two or three parts of diſtilled water, and is thereby changed into a tranſparent liquor, ſomewhat thick, not unlike the concentrated oil of vitriol, and having the properties of all acids, ſuch as fermenting with volatile and fixed alkalies, forming neutral ſalts with them, precipitating bodies diſſolved in alkaline menſtruums, and diſſolving alkaline earths. It does not diſſolve gold nor ſilver : and copper, tin, and lead little, but iron very ſtrongly. It extracts a red colour from *cobaltum pro ceruleo,* in German, *blau farben kobalde,* the mineral by which glaſs is tinged blue.

But this ſalt in its dry ſtate attracts metals with much more vigour, and with them produces ſeveral remarkable and ſingular phenomena ; for all which, as alſo for the relation their ſalt bears to acid, alkaline, and neutral ſalts, we refer to the learned author, who has alſo examined its effects on ſeveral ſolutions of terreſtrial bodies. One moſt eminent property is, that mixed with the inflammable part of ſoot, and diſſolved in a cloſe veſſel, it produces a phoſphorus. An ounce of this ſalt of urine, thus ſeparated from its urinous part, and exactly mixed with half an ounce of ſoot, affords in this way a drachm of the beſt phoſphorus. The reſiduum did not produce any when tried.

The learned author does not pretend to determine exactly the true origin of this ſalt ; he thinks its acid may come into the human body from vegetable aliments. He has obſerved elſewhere, that creſſes, muſtard, rocket, and even corn, expoſed to a very violent fire, produce a phoſphorus. Hence he thinks this acid muſt be mixed with thoſe ſubſtances ; and the like may happen in other vegetables. He thinks this conjecture ſtrengthened, becauſe urine in ſummer, when people eat moſt vegetables, always produces this ſalt in the greateſt quantity. Margraff in Mem. de l'Acad. de Berlin, 1746. See alſo Miſcel. Berol. tom. vii. p. 341.

Mr. Pott obſerves, that the figure of fuſible ſalts varies much according to the heat, evaporation, and different mode of cryſtallization ; and that it aſſumes the ſhape of moſt others, as of ſaltpetre, vitriol, ſal ammoniac, Glauber's ſalt, &c. but it is generally in ſhining, octagonal, priſmatic cryſtals. The taſte of this ſalt is cool, reſembling that of borax, to which it is in other reſpects ſimilar. When put on the fire in a crucible, it froths, ſwells, and melts. When melted upon a bit of charcoal, by means of a blow-pipe, it forms a round drop. The cryſtals of the ſecond cryſtallization do alſo melt upon charcoal, when they are pure, but when cold they have a milky colour. They do not, like the cryſtals of the firſt cryſtallization, form phoſphorus with phlogiſton. They effloreſce in the air, and are hot to the taſte, in both which inſtances they alſo differ from the firſt cryſtals.

SALT *of Glaſs,* called alſo *Glaſs-gall,* is a kind of ſaline ſcum or maſs, found in glaſs-houſe pots upon the ſurface of the melted glaſs. It conſiſts of neutral ſalts, as common ſalt, vitriolated tartar, and others, which are contained in the ſoda and potaſh employed in the compoſition of glaſs, and which not being themſelves ſuſceptible of vitrification, are ſeparated from the glaſs during the fuſion, and collected together upon its ſurface, becauſe they are ſpecifically lighter. See GLASS, and SANDEVER.

SALT, *Glauber's.* See SAL, and *Sulphate of* SODA.

SALT *of Hartſhorn.* See CARBONATE *of Ammonia.*

SALTS *of Count Lagarais,* a name by which the French and ſome other nations call a preparation of vegetable bodies, invented by the gentleman whoſe name it bears, but very improperly called by him a ſalt.

The hiſtory of theſe preparations is this : in the year 1731, the count de Lagarais ſhewed the French king ſome powders, which proved to be very uſeful in medicine, and which he called the *eſſential ſalts of certain plants.* The method of making theſe was long kept a ſecret, but at length, the diſcoverer publiſhing it to the world, it appeared that they were made by means of water only, agitated in a violent and continued manner in a cloſe veſſel with an inſtrument reſembling a chocolate mill. Mr. Langelot had before attempted a reſolution of this kind of vegetable, and other ſubſtances, by means of water and motion, but his was done by grinding them with a ſmall quantity of water at a time ; whereas this of the count's is by powdering the ingredients, mixing them with a large quantity of water, and breaking them to pieces by a continued motion of this ſort of mill made with four vanes, or flaps of thin wood, which was kept for ſix or eight hours in a continual motion, by means of a larger wheel, ſuch as the lapidaries poliſh ſtones with.

There is no doubt but that the inſtrument uſed by the count is of very great uſe, and that the reſult of the operation is a very valuable form of medicine ; but it is not a ſalt, but an extremely fine extract, containing the gummy, reſinous, and ſaline parts of the body, and in a form capable of being reduced to powder, and eaſily adminiſtered, as it contains the virtues of the plant it is made from, in an extremely ſmall compaſs, and is capable of ready ſolution in aqueous fluids. It is certainly a form of medicine worthy to be brought into practice, and muſt be a very proper way of adminiſtering the more bulky medicines to children, and perſons of tender conſtitutions.

To give a proper view of the nature of theſe preparations, and their difference from the extracts made in the common manner, it may be proper to enter, in ſome degree, into the manner of preparing the two forms. The common extracts of the ſhops are made either from the juices of ſucculent plants, as houſeleek, purſlane, or the like ; or from a ſtrong decoction of the other drier plants in common water, which, when ſeparated from the coarſer parts by ſubſidence, filtration, or the like means, are evaporated over a balneum Mariæ to the conſiſtence of a thick honey.

In proceſs of time, an eſſential ſalt will ſeparate itſelf from theſe extracts, and many plants have, in the decoctions, a large quantity of a fine ſubſtance, which will never be made to paſs the filter; and the extracts, made by this means, contain the oil, the gummy and reſinous parts of the plants, and the eſſential ſalts, though this is but in a very inconſiderable quantity. Theſe are the common extracts of plants.

The method of making thoſe extracts, called *count Lagarais's ſalts*, is this. They chooſe a glaſs veſſel, capable of holding ſix or ſeven pints, and having a wide mouth; into this they put an ounce of bark, ſena, guaiacum, or any other vegetable of which they are to make the extract, firſt reduced to a coarſe powder. They pour on this two pints and a half of rain-water, or diſtilled water, and then taking the veſſel to the place where the mill is fixed, they raiſe it ſo high, that the body of the mill is in the middle of the liquor; then they cover the top of the veſſel with a wet bladder, that the froth may not be thrown over, and then turning the large wheel, they make the mill move round very ſwiftly in the liquor for ſix or ſeven hours together; after this they let the liquor ſettle for an hour or two, till only the finer parts of the body remain ſuſpended in it, and then pour it off into a number of flat China or ſtone-ware diſhes, putting only a ſmall quantity into each diſh, and theſe they ſet in the ſun, or over a balneum Mariæ prepared on purpoſe; for ſhould they attempt the evaporation in a ſand heat, the ſmall quantity of extract in each diſh would be burned. When the whole is evaporated to a dryneſs, there remains on the whole inner ſurface of the diſhes a thin cruſt of an extract, which is to be ſeparated by ſcraping it off with a piece of ſtiff paper, and reſerved for uſe. This always breaks up in ſmall ſcales, which have a very ſhining ſurface on that part where they adhered to the diſhes, and it ſeems that this has given occaſion to ſome to believe, that they were particles of real ſalt.

There is no doubt but this method of procuring a powerful extract might be of great uſe, in regard to all thoſe ſubſtances which water can have power to penetrate; but it is not eaſy to give credit to its being able to make the like valuable medicines from the metals, though that has been pretended. Gold and ſilver are pretended to be operated on in a powerful manner by it, but there ſeems a fallacy in this, ſince even iron itſelf, which is much more penetrable by water than thoſe metals, yields but little virtue to it; two ounces of the filings of this metal yielding, with the utmoſt care and accuracy, only about four grains of a white earthy matter, which is alſo much more likely to be a part of the water than of the metal.

The *ſalts of the metals*, as the count called them, which were prepared by this means, were always ſuſpected to hold ſome ſaline quality, which they owed to the menſtruum, which, whatever was pretended, was not ſimple water, and a ſtrict examination of them always diſcovered a marine ſalt among them. It is true, indeed, that according to Langelot's method of grinding, ſome leaves of gold were reduced, by the addition of a very ſmall quantity of water, into a liquor, from which, on diſtillation, a few red drops were ſeparated; but it is to be obſerved, that as Langelot's method is the grinding of the ſubſtance with great vehemence, and for a long time, in an iron mortar, with a peſtle of the ſame metal, there is reaſon to ſuſpect, that what was found to come forth in red drops was a ſolution of iron, not of gold, as was pretended by thoſe who firſt prepared them.

It is not to be doubted, but the method of evaporation of count Lagarais's medicines is of great uſe, ſince no other can ſo well retain the finer parts of the medicines. Mr. Geoffroy tried it on roſes, violets, and ſome other flowers, and found great reaſon to wiſh that all the medicinal extracts could be prepared in the ſame manner; but the method is impracticable, when medicines are to be prepared for general uſe; for though the mills might be made to be moved in great numbers at once, by a current of water, and ſo this part of the work performed with tolerable eaſe, yet the evaporations, in ſuch quantities, could by no means be made in any tolerable room, or time, and they muſt be evaporated as ſoon as made, ſince they very quickly turn ſour, and loſe all the virtues. Mém. de l'Acad. Scienc. Par. 1739. See EXTRACT.

SALT *of Lead.* See *Salt of* LEAD, and SACCHARUM *Saturni.*

SALTS, *Lixivial,* a general name given to all ſaline ſubſtances obtained by lixiviation of aſhes, but particularly applied to *fixed alkali.*

SALT *of Milk.* See MILK.

SALT, *Microcoſmic.* See *Fuſible* SALT *of Urine.*

SALT *of Mineral Waters.* See HALCRYPTIUM.

SALT, *Muriatic calcareous.* See SAL *muriaticus calcareus.*

SALTS, *Neutral.* See NEUTRAL, and the diſtribution of ſaline ſubſtances at the beginning of the article SALTS.

SALT, *Neutral arſenical,* is a combination of arſenic with fixed alkali to the point of ſaturation. M. Macquer firſt diſcovered this combination, and began an account of its properties in the Memoirs of the Royal Academy for 1746 and 1748. His method of making this ſalt, is, by mixing together equal parts of very white cryſtalline arſenic and purified nitre, and by diſtilling this mixture in a retort with a graduated heat, in the uſual manner, till the retort is red-hot, and no more vapours of nitrous acid ariſe. In the retort there remains a ſaline maſs, white, compact, and fixed; from which, after ſolution in hot water, filtration, evaporation, and cryſtallization, may be obtained beautiful, quadrangular, priſmatic cryſtals, terminated at each end by a quadrangular pyramid, the ſides of which correſpond with thoſe of the priſm. This new ſalt is preciſely neutral, and exhibits no marks of an alkaline quality. It is infinitely more ſoluble in water than pure arſenic, and diſſolves in a leſs quantity of hot than of cold water. It is eaſily fuſible by fire, and remains fuſed and tranſparent like glaſs, without being alkalized, if it has not touched any inflammable matter; for it may be eaſily decompoſed by phlogiſton, which unites with the arſenic, ſeparates it from the alkali, and is ſublimed. This ſalt cannot be decompoſed by any pure mineral acid, becauſe arſenic ſeems to have a greater affinity with fixed alkali than acids have; but when theſe acids are united with metallic matters, they can eaſily decompoſe the neutral arſenical ſalt, even by the humid way; ſo that a ſolution of this ſalt, added to a ſolution of metals, occaſions a precipitate, compoſed of the arſenic and metal, while the acid of the metallic ſolution combines with the fixed alkali of the neutral, arſenical ſalt, and forms another neutral ſalt. Macquer's Dict. Chemiſtry, art. *Salt.*

SALT, *Pine.* See PINE.

SALT *of Rochelle,* or of *Seignette.* See RUPELLENSIS *Sal,* and *Tartrite of* SODA and POTASH.

SALT, *Sea.* See *Common* SALT.

Salt, *Sedative*, a name given by the modern chemiſts to a ſalt obtained from borax, by means of acids, of the virtues of which they boaſt much. Thoſe who firſt deſcribed it, gave the proceſs for making it in a very enigmatical manner; and their ſucceſſors invented many different ways of preparing it. The truth is, that all mixtures of borax with the vitriolic acids furniſh us with a ſedative ſalt, as do all the mixtures of borax with ſpirit of nitre, or of ſea-ſalt.

Becher firſt gave the enigmatic account of it, which Homberg traced to its origin, and found the way of making it with the vitriolic, as Lemery did with the other acids. This ſalt is formed by ſublimation, and is a congeries of ſaline flowers, not a little approaching to flowers of benjamin. Theſe flowers are ſo light and fine, that they ſwim upon water, and require a great quantity of water to diſſolve them, and much more of cold than of boiling water; and, therefore, it may be cryſtallized by cold, and even by evaporation alone.

The ſedative ſalt is a perfect *ſal ſalſus*. It makes no alteration in the colour of the juice of violets, and has no ſenſible effect on the ſolution of corroſive ſublimate, or on a ſolution of mercury in ſpirit of nitre for a long time; but it finally precipitates a yellow powder from it, as the borax does. There is this difference, however, between this precipitate, and that formed by crude borax, that the powder precipitated by the ſedative ſalt does not, as the other, become white on waſhing with large quantities of water. Theſe experiments ſhew this ſalt to be wholly analogous to tartarum vitriolatum, or to the Glauber's ſalts, in its effects.

When the compoſition of which this ſalt is to be made is placed on the fire, there ariſe different liquors before the ſalt appears; the firſt is a phlegm of a fattiſh complexion, and with the ſmell of ſoap; this is ſucceeded by a turbid white liquor, along with which there ariſe ſome of the firſt flowers. This makes a ſolution of mercury in ſpirit of nitre muddy after ſome time, and finally precipitates from it a ſmall quantity of a white powder. After this all the ſalt or flowers aſcend; theſe flowers, diſſolved in warm water, recryſtallize themſelves in it when cold, aſſuming the ſame form with that they had in the flowers, except that the combinations of particles are more denſe and heavy.

The uſual method of making this ſalt by ſublimation has been this. Take a glaſs retort, with a large neck; put into it four ounces of borax in fine powder, and pour on this half an ounce of common water, to wet it into a ſort of ſoft paſte; then add to this an ounce and two drachms of concentrated oil of vitriol; place the retort in a reverberatory furnace, and give at firſt a ſmall fire, which raiſe by degrees till the retort is red-hot: there will paſs over into the receiver about an ounce of aqueous matter; and after this the flowers, or ſedative ſalt, will riſe with a little more humidity; hence ſome part of the flowers will be diſſolved in the liquor, and run over into the recipient, but the greater quantity will remain in form of a dry ſublimation in the neck of the retort; they will finally ſtop up the whole orifice of the neck, and what ariſes after this uſually forms a circle of a ſort of gloſſy ſalt about their baſes, out of which the flowers ſeem to ſhoot.

They are compoſed of multitudes of fine thin blades, or flakes, and are eaſily bruſhed out of the neck of the retort with a feather; the gloſſy circle at the bottom of them may be diſſolved in water, and recryſtallized, and by this means all the ſalt will be procured.

M. Geoffroy the younger has given, in the Memoirs of the Paris Academy, in 1732, an account of a way of making this ſalt by ſolution and cryſtallization alone, without the trouble of diſtilling; he has alſo ſummed up the ſeveral other ways of making it with blue and white vitriol, but the method here mentioned is that by which the chemiſts now make it.

Geoffroy's method by cryſtallization is as follows: take four ounces of borax, and one ounce one drachm of the moſt concentrated oil of vitriol; put the borax into a glaſs retort, pour in it half an ounce of common water after the oil of vitriol, and expoſe the mixture to a fire gradually increaſed: after the phlegm has paſſed off, and even while it is paſſing, there ariſe flowers, or a volatile ſalt, in beautiful foliated laminæ, ſome of which always melt by the heat of the fire; after the operation is over, the fineſt of the flowers are to be carefully gathered, and theſe are what ſtick to the neck of the retort. Thoſe that are grey are to be thrown upon the remaining maſs; this maſs is to be diſſolved in water, filtrated and evaporated gradually; ſometimes, even without evaporation, the ſhining talcous laminæ are to be ſeen in the liquor; after twenty-four hours ſtanding, the water is to be poured off from theſe laminæ, which are to be waſhed with freſh water, and then dried carefully in a warm place. If theſe cryſtals do not calcine in the place where they are put to dry, nor in the ſun's heat, it is a ſign there is nothing cryſtallized but the *ſal neutrum*; if they do calcine, it is a proof that there is ſome Glauber's ſalt formed of the borax and the vitriolic acid, and cryſtallized in the maſs. This ſedative ſalt, obtained by cryſtallization, does not differ eſſentially from that which is ſublimed, only that the cryſtals or laminæ of the latter are more ſeparated and detached than thoſe of the former. This ſalt, when once it has loſt its water by drying, cannot be raiſed into vapours by the moſt violent fire, in which it remains fixed, and melts into a vitreous matter, as borax does. Hence it appears that it is a ſaline compound, the principles of which are ſtrictly united, and ſeparable with great difficulty. This truth has been illuſtrated by numerous and accurate experiments on the ſubject, by Mr. Bourdelin, related in the Memoirs of the Academy for the years 1753 and 1755.

M. Cadet has alſo publiſhed in the Memoirs for 1766, an account of experiments on this ſalt.

Homberg, the inventor of ſedative ſalt, believed that he diſcovered in it a ſedative, antiſpaſmodic, and even narcotic quality, and thence called it the narcotic ſalt of vitriol; it was, therefore, generally employed in convulſive diſeaſes; but its ſedative powers have not been well aſcertained. See Boracic *Acid*.

Salt *of Soda*, a name given to the marine or mineral alkali obtained from the aſhes of ſoda, and of other maritime plants. See Kali.

Salt *of Sorrel*. See *Oxalat of Potaſh* under Salts, and Oxalis.

Salt, *Spirit of*. See Muriatic *Acid*.

Salt *of Stahl*, *Sulphureous*, a neutral ſalt, compoſed of volatile ſulphureous acid, combined to the point of ſaturation with fixed vegetable alkali. This ſalt may be made either by ſaturating fixed alkali with volatile ſulphureous acid, made in a cracked retort, in Stahl's manner, or by expoſing linen, ſoaked in liquid fixed alkali, to the vapours of ſulphur ſlowly burning. In the latter method, the linen dries, becomes ſtiff, and ſhines with many ſmall needle-like cryſtals, which are the ſulphureous ſalts. This has a more pungent taſte than vitriolated tartar, is more ſoluble in water, and is cryſtallizable by cold. It may be decompoſed by any acid, and its ſulphureous acid expelled from it, and it is perpetually changing, from the conſtant diſſipation (as former chemiſts ſuppoſe) of its phlogiſton.

SALT *of Sylvius*. See ACETATE *of Potaſh*, and SAL *Marinus Regeneratus*.

SALTS *of Tachenius*, are impure fixed alkalies, obtained from the aſhes of vegetables, burnt by ſuffocating their flame, and leaving no more communication with the air, than is ſufficient for the burning of their moſt diſengaged inflammable parts. The dried plant, in this proceſs, is put in an iron pot, ſo heated, that its bottom may be red, and continually ſtirred, when a thick fume, and at length a flame, will riſe from it. A lid muſt then be put on the pot, ſo looſely, that the ſmoke may eſcape but the flame be extinguiſhed, and this lid muſt be occaſionally removed for the convenience of ſtirring the plant. When it is thus reduced to aſhes, the aſhes muſt be lixiviated with boiling water; and when the lixivium has been evaporated to dryneſs, a ſaline matter, more or leſs reddiſh, will remain, which is Tachenius's fixed ſalt, and ſhould be kept in a bottle. See the proceſs deſcribed at large by Boerhaave, Chem. part ii. p. 28, &c. In this way of burning plants, the fixed alkali is phlogiſticated, rendered ſemi-ſaponaceous, and mixed with all the neutral ſalts contained in the plants.

SALT *of Tartar*, the fixed alkali of *tartar* (which ſee); or this name is given to fixed vegetable alkali in general. See CARBONATE *of Potaſh*.

SALT, *Vegetable*. See *Soluble* TARTAR.

SALT *of Vinegar*, is a name given to *vitriolated* TARTAR, impregnated with very ſtrong *radical* VINEGAR. See each article.

SALT, *Vitreous*, a term uſed by ſome modern chemiſts for a kind of ſalt, which till of late wanted a name, and which is found in, and ſeparable from, the fixed alkaline ſalts of vegetables.

It is bitter, hard, fixed, and not alkaline, and of a cryſtalline, or gloſſy appearance.

The method preſcribed by Boerhaave for the procuring it with the moſt eaſe, is this: put ſix pounds of the beſt pot-aſhes into a clean glaſs, and add thereto twenty pints of cold rain-water; ſtir them together with a ſtick, and ſuffer the whole to reſt. When the aſhes are thoroughly diſſolved, gently decant the clear lixivium, and there will be found at the bottom, mixed with the fæces, a number of ſmall greyiſh granules, of a bitter taſte, and of an almoſt glaſſy brittleneſs and hardneſs; theſe are the ſalt required, and contain no alkaline quality. But to obtain it in greater purity, diſſolve ſix pounds of pot-aſhes in four times their weight of water; filter the lixivium while hot, and make it perfectly clear; then put it into a glaſs veſſel, ready heated and moiſtened, and ſuffer it to ſtand; a duſky cruſt will ſoon begin to ſhoot to the bottom and ſides of the glaſs, and will gradually become thicker and thicker; at length, when no more appears to ſhoot, pour off the liquor, and there will remain behind a ſalt like the former, but purer, and in larger quantity; if the remaining lixivium be boiled a little, and ſet to cryſtallize again, it will afford a ſmall quantity more of this ſalt, but after this it will yield no more, whence there ſeems to be only a certain and determinate quantity of this ſalt contained in the alkali. If this ſalt be put into a veſſel of rain-water and ſhook about, it does not diſſolve, only the alkali waſhes off, and the ſalt remains purer than before; after this it is to be gently dried and kept. Boer. Chem. pt. ii. p. 42.

It is well known among the chemiſts, that genuine fixed alkaline ſalts can hardly be cryſtallized; and though ſome have produced this ſalt as a cryſtallized alkali, the fallacy of the pretext is evident, ſince this appears on trial to be no alkali at all; and it remains not leſs difficult than before to cryſtallize pure alkali, though a ſalt, different in its nature from it, may be cryſtallized in a certain quantity from among it.

This vitreous ſalt never runs ſpontaneouſly in the air, nor does it eaſily diſſolve in cold water; when boiled, it requires a large proportion of water to diſſolve it, and as ſoon as cold, it eaſily ſeparates itſelf from it again; it is laſtingly bitter to the taſte, and crackles very much when thrown into the fire; it is neither acid nor alkaline, nor approaches in its nature to any other ſalt hitherto known, but ſeems neareſt of all others to reſemble ſandiver. This may ſuggeſt a query, whether the fire in producing the fixed alkali, does not at the ſame time produce this ſalt from vegetables; and whether, by combining the ſand and alkali together in glaſs-making, the fire does not again ſeparate and throw up this ſalt in ſandiver. Something of this kind ſeems to be the caſe, and a cloſe inquiry on theſe principles may ſhew us why tartar, in the ſtate of an alkali, does not afford this ſalt; for tartar proceeds from a ſubtile liquor, intimately fermented in all its parts. There yet remains the trying of this ſalt on various bodies, by means of fire, to give a true knowledge of its nature, which is at preſent too little known. This is to be obſerved, however, that it differs ſo much from the alkali in which it is contained, that the careful chemiſt, before he makes uſe of that alkali in any nice proceſs or experiment, ought carefully to ſeparate this neutral ſalt from it. Boerhaave's Chem. part ii. p. 100.

SALT, *Volatile*, a name commonly given to volatile, concrete, alkaline ſalts, as *volatile ſal* AMMONIAC, and *volatile ſalt of hart's*-HORN. See alſo *Volatile Salt of* AMBER.

SALTS, *Urinous*, a term ſynonimous with alkaline ſalt.

SALT *of Steel*, a name given to ſeveral combinations of iron with acids; hence Riverius's ſalt of ſteel is a martial vitriol, made with iron, vitriolic acid, and ſpirit of wine.

SALTS *microſcopically examined*. Mr. Leeuwenhoeck has opened a very extenſive field for microſcopic obſervations, in the evaporation of certain fluids, in which ſalts of various plants, and other ſubſtances of the like kind, had been diſſolved.

The fixed ſalts, in general, are ſaid by chemiſts to admit of no cryſtallization at all; but this curious obſerver found, that, on being evaporated in ſmall quantities before the microſcope, they each would ſhoot into extremely minute, but regular cryſtals, and thoſe often of various forms in the ſame ſalt; but that theſe varieties were only of a certain number, and that no other ſalt but that to which they belonged had them all in the ſame regular manner.

The ſophiſtications of ſalts, too common among our chemiſts, may be diſcovered by this means, and many other advantages may be obtained from it, as well as great amuſement in the obſervation of the variety and beauty of the figure.

The moſt agreeable way of examining theſe ſalts, is by the ſolar microſcope; but the moſt accurate and fitteſt for making deductions from, is that by the common double microſcope. The way is to diſſolve a ſmall quantity of ſalt, of any kind, in water, and add to this about one-fourth part of ſpirit of wine; this renders the whole a much leſs fit menſtruum for keeping the ſalt in ſolution, and conſequently it much more readily concretes from among it. A large drop of this liquor is to be laid on the ſurface of a thin and clear piece of glaſs, ſuch as may conveniently be laid upon the ſtand for receiving objects in this microſcope: then this glaſs is to be held till gently heated over a clear fire, and when it begins to evaporate, the glaſs is to be placed under the microſcope, and about a third magnifier uſed to examine it. The ſalts will ſoon be ſeen beginning to ſhoot, and will form themſelves under the eye into very beautiful figures; ſome reſembling branches of trees, others ruins and fortifications, and the like; but what are moſt to be depended upon, as eſſential to the ſalt, are certain little ſingle ſhoots, reſembling cryſtals; theſe are determinate in their figure, the others more vague and uncertain. Theſe will always be produced the ſame from the ſame ſalt; the others ſcarce twice from even the different drops of the ſame ſolution, alike in all reſpects. Phil. Tranſ. No. 172. p. 1075. See *Table of* Microscopic *Objects*.

Salts, or *Saults*, in the *Manege*, denote the leaps, or high airs and vaults of a horſe; from the French *ſaut*, of the Latin *ſaltus*, *a leap*, *dance*, &c.

A ſtep and a half is a high air, wherein the horſe riſing makes a curvet between two ſalts, or caprioles; ſo as to mount before, and fling back with his hind feet.

Two ſteps and a ſalt are a motion compoſed of two curvets, ending with a capriole.

SALT-SILVER is a denomination given to one penny paid at the feaſt of St. Martin, by the tenants of ſome manors, as a commutation for the ſervice of carrying their lord's ſalt from market to his larder.

SALTUARIUS, in *Antiquity*, an officer, or ſervant, among the Romans, who had the care and cuſtody of a country-houſe, with lands and woods, and who was to look to the fruit, the fences, &c.

In Nehemiah, chap. ii. 8. mention is made of an officer of this kind; *cuſtos ſaltus regis*, which the Engliſh tranſlators interpret, *keeper of the king's foreſt;* but he was more, having not only the keeping of a foreſt, but of a houſe with a foreſt; *ſaltus* being here uſed as *horti*, for a houſe of pleaſure, becauſe gardens are the principal part. In the laws of the Lombards, ſaltuarius is an officer who has the guard of the frontiers.

SALTUM, *Ordination per Saltum*. See Ordination.

SALTUS, in *Law-books*, a high thick wood.

SALT-WORT, in *Botany*. See Salicornia.

Salt-wort, *Black*. See Glaux.

Salt-wort, in the *Arts* and *Materia Medica*. See Kali, Kelp, and Soda.

SALTZBERG, in *Geography*, a town of Norway, in the province of Chriſtiania, on the Dram; 14 miles W.N.W. of Chriſtiania.

SALTZBURG, a town of Tranſylvania; 6 miles N.W. of Hermanſtadt.

SALVADIGO, a ſmall iſland in the Grecian Archipelago, near the coaſt of Natolia. N. lat. 37° 6′. E. long. 27° 56′.

SALVADOR, a river of Braſil, which runs into the Atlantic, S. lat. 21° 54′.

Salvador, *St.*, otherwiſe called *Cividad de Bahia* (ſee Bahia), the capital of the Capitania of Bahia, to the northward of Minas Geraes, in Braſil, ſituated at the entrance of *All-Saints* bay (which ſee), and originally the ſeat of the ſupreme government of Braſil. It conſiſts of two parts, one built on low ground near the ſhore, where the commerce is carried on; and the other on a high hill, which, being conſidered the moſt healthy, is the reſidence of all the people of conſequence. Its population is ſaid to be nearly equal to that of Rio de Janeiro, and is ſtated at no leſs than 70,000 ſouls. The houſes are conſtructed with latticed windows and balconies, ſimilar to thoſe in Rio de Janeiro. The churches are the principal public buildings, and are richly ornamented within. The government of the city is veſted in a viceroy or governor, who is nominated by the court for three years. Here all law proceedings, civil and criminal, are brought before the reſpective magiſtrates, whoſe ſentence is in general final; though, in certain caſes, appeals lie to the court at Rio de Janeiro. The town is tolerably defended, and alſo the bay. On the ſhore are a royal arſenal, and numerous houſes for ſtores, &c. The cuſtom-houſe and wharfs are conveniently ſituated. Ships of war have been built here, and many large and fine veſſels for the merchant ſervice. The interior of the country ſupplies timber of an excellent quality. The manners and cuſtoms of the people differ little from thoſe of the inhabitants of the capital; but it is ſaid, that in the beſt ſocieties more gaiety and refinement prevail than in Rio de Janeiro. The taſte for muſic is very general; and the ladies dreſs in the Engliſh ſtyle: the favourite gem is the chryſolite. Theſe females are leſs induſtrious than thoſe of the ſouthern diſtricts. The domeſtic dreſs of the men conſiſts of a jacket and looſe trowſers, made of light printed cotton. Religious proceſſions are no leſs common here than at Rio de Janeiro; and on great feſtivals and rejoicing days there are various amuſements, which continue from morning to night. On theſe occaſions, the Braſilians are accuſtomed to cover the walls and balconies of their houſes with beautiful ſilks, manufactured and ornamented for the purpoſe. The climate is always warm, but is refreſhed by the ſea-breeze, and in ſome degree tempered by the long abſence of the ſun, the nights being of almoſt uniform length throughout the year. Although Bahia is hotter than Rio de Janeiro, it is more healthfully ſituated, and better ſupplied with water. The practice of bathing is very general, and moſt houſes have conveniencies for this purpoſe. This place is plentifully ſupplied with proviſions; fiſh of various kinds is abundant, and conſtitutes a principal article in the diet of the inhabitants; poultry is plentiful, but not cheap; vegetables and pulſe of every deſcription are very abundant. The markets are well ſupplied with all the tropical fruits, particularly the pine, the mango, and the banana of excellent quality. Preſerved fruits are ſold in the ſtreets, and two or three preſerved limes in a cup of ſyrup may be bought for a penny. The ſoil of this capitania is eſteemed the beſt in Braſil for the culture of the ſugar-cane. Many ſugar plantations, which are reckoned the fineſt in the country, are eſtabliſhed in this diſtrict. A greater quantity of ſugar is ſhipped from Bahia than from all the other ports of Braſil united, and it is in general ſuperior in quality. (See Sugar.) The tobacco of this capitania is peculiar to it; and, by an excluſive privilege, no other part of Braſil was allowed to cultivate the ſame ſort. It has given riſe to much commerce, and has enriched many families. (See Tobacco.) Cotton, coffee, and rice, are cultivated in this capitania. The beautiful dye-wood, called Braſil wood, is ſhipped from this port and Pernambuco; and it is of a quality ſuperior to that of Rio de Janeiro. The general commerce of this article is prohibited, as it is the property of the royal houſehold. Fuſtic is brought hither from the interior; but its indigo is inferior to that imported from India, and is of no great value as an article either of culture or of commerce. Bahia has a conſiderable trade with St. Catherine's, and other ports on the ſea-coaſt. Many fine brigs and ſmall veſſels are employed in this trade. The imports to Bahia from Europe conſiſt in general of the ſame articles with thoſe belonging to the trade of Rio de Janeiro. This capitania has produced the largeſt piece of native copper that has ever appeared, being in weight upwards of

2000 lbs. S. lat. 12° 45′. W. long. 39° 30′. Mawe's Travels in the Interior of Braſil, Lond. 1812.

Salvador, *St.*, a town of South America, in the province of Grenada; 70 miles E. of Tunia.—Alſo, a town of South America, in the audience of Quito; 50 miles N.E. of Archidona.—Alſo, a town of New Navarre; 50 miles S.E. of Caſa Grande.

Salvador, *St.*, called alſo *Banza* (which ſee), a city of Africa, the ſee of a biſhop, and capital of the kingdom of Congo; ſituated about 150 miles from the ſea, on a high rock, in which is an iron-mine. On the eminence is a large plain, about ten miles in circumference, well cultivated, and furniſhed with houſes and villages, that are inhabited by 100,000 perſons. The Portugueſe call it the "Otheiro," *i. e.* the proſpect or look-out, as it affords a view of all the adjacent plains. Notwithſtanding its elevation, it abounds with ſprings of tolerable water. This plain is well manured, and fruitful in grain; it has alſo meadows covered with graſs, and trees of conſtant verdure. The air is likewiſe cool and ſalubrious. The city is ſeated in an angle of the hill towards the ſouth-eaſt. Don Alfonſo, the firſt Chriſtian king, incloſed his own palace, and aſſigned the ſame to the Portugueſe, with ſtrong walls, the gates of which are never ſhut nor have any guards. The city has twelve churches, beſides the cathedral, which is built with ſtone. The territory of the city is about 20 miles in compaſs, and belongs wholly to the king. The inhabitants are about 40,000, of whom about 4000 are white, who reſide in a quarter by themſelves. S. lat. 5° 45′. E. long. 14° 32′.

Salvador, *St.*, or *Cuzcatlan*, a town of Mexico, in the province of Guatimala, about 12 miles from the Pacific ocean, the reſidence of a Spaniſh governor, with little trade: its environs produce ſugar-canes and indigo; 140 miles E.S.E. of Guatimala. N. lat. 14°. W. long. 90° 3′.

Salvador *de Jujui*, *St.*, a city of South America, in the province of Tucuman, near the borders of Peru, at the foot of a high mountain, which forms part of the eaſtern Andes. A little above the town runs a conſiderable river, which falls into the Leon. (See Jujui.) It contains about 300 houſes, and is the moſt northerly town in the province; 174 miles N. of St. Jago del Eſtero. S. lat. 23° 5′. W. long. 66° 2′.

Salvador *de Laye*, *St.*, a town of Spain, in Navarre; 8 miles N. of Sangueſa.

Salvador *de Bayamo*. See Bayamo.

SALVADORA, in *Botany*, a genus named by Garcin in honour of Salvadore, an apothecary at Barcelona, and originally publiſhed, with other botanical obſervations, in the Philoſophical Tranſactions for 1749.—Linn. Gen. 64. Schreb. 88. Willd. Sp. Pl. v. 1. 695. Mart. Mill. Dict. v. 4. Juſſ. 84. Lamarck Dict. v. 6. 483. Illuſtr. t. 81. Loureir. Cochinch. 87. Gærtn. fil. t. 222.—Claſs and order, *Tetrandria Monogynia*. Nat. Ord. uncertain.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, cloven into four, obtuſe ſegments. *Cor.* of one petal; tube ſhort; border divided into four, oblong, revolute lobes. *Stam.* Filaments four, inſerted below the diviſions of the corolla; anthers oval. *Piſt.* Germen ſuperior, globular; ſtyle very ſhort, or none; ſtigma ſimple, obtuſe, umbilicated, rough. *Peric.* Berry ſmall, globular, of one cell. *Seed* ſolitary, ſpherical, furniſhed with a callous tunic.

Eſſ. Ch. Calyx four-cleft. Corolla four-cleft. Berry containing a ſingle ſeed, clothed with a tunic.

1. S. *perſica.* Linn. Sp. Pl. 178. Vahl Symb. v. 1. 12. t. 4. Roxb. Coromand. v. 1. t. 26.—Leaves oval or oblong. Flowers in panicles.—Originally ſent by Kœnig from Tranquebar. It is alſo a native of the Perſian gulf, and of moſt parts of the Circars, though not common; flowering and bearing fruit all the year round. The *trunk* of this *tree* is eight or ten feet high, rather crooked, covered with a rough, deeply-cracked *bark*, and furniſhed with numerous, ſpreading, pendulous *branches*, like a weeping willow. *Leaves* oppoſite, ſtalked, entire, ſmooth and ſhining on both ſides, veinleſs. *Flowers* in terminal, compound panicles, very numerous, ſmall, greeniſh-yellow. *Bracteas* minute. *Berry* ſmaller than a grain of black pepper, ſmooth, red, juicy, ſtrongly aromatic, and taſting like garden creſſes. *Seed* browniſh-green. The *bark* of the *root* is extremely acrid, and "promiſes as a ſtimulant," ſays Dr. Roxburgh, "to be a medicine poſſeſſed of very conſiderable powers."

2. S. *capitulata.* Loureir. Cochinch. 87.—Leaves ovate, acuminate. Flowers capitate, axillary.—Native of Cochinchina. A middle-ſized tree, furniſhed with numerous *branches*. *Leaves* alternate, on ſhort ſtalks, unequally ſerrated, extremely rough. *Flowers* capitate, about eight on a long, common ſtalk. *Berry* yellow, twin at the top.

3. S. *biflora.* Loureir. Cochinch. 88.—Leaves lanceolate or ovate. Flowers in pairs.—Found in woods and hedges with the laſt, from which indeed it is ſcarcely diſtinguiſhable except when in flower. A *tree* about ten feet high, with many, twiſted, ſpreading *branches*. *Leaves* alternate, rough, ſlightly ſerrated. *Flowers* axillary, in pairs, on long ſtalks. *Berry* yellow, two-lobed, eſculent.

SALVADORE, Il, in *Geography*, a town of Etruria; 17 miles S. of Volterra.

SALVAGE, in the *Law of Inſurance*, originally meant the thing or goods ſaved from ſhipwreck, or other loſs; but at preſent it is more generally underſtood to mean the allowance made to thoſe by whoſe means the ſhip or goods have been ſaved from the effects of ſhipwreck, fire, pirates, enemies, or any other loſs or misfortune. At common law, the party who has ſaved the goods of another from loſs, or any imminent peril, has a *lien* on the goods, and may retain them in his poſſeſſion till payment of a reaſonable ſalvage; and the policy, in caſe of loſs or misfortune, authorizes the inſured to ſue and labour for the recovery of the thing inſured, to the charges of which the inſurers engage to contribute. The regulations which the law of England has eſtabliſhed in relation to this ſubject are principally found in our ſtatutes, ſome of which are of very ancient date. (See 3 Edw. I. c. 4. 4 Edw. I. c. 2. 27 Edw. III. c. 13.) But thoſe that are now principally in force are found in the ſtatute 12 Ann. ſtat. 2. c. 18. and ſubſequent acts, made for the protection of ſhips and goods ſtranded on the coaſts of this kingdom. The ſtatute of Ann. ſect. 2. enacts, among other proviſions, that perſons employed in the ſalvage of ſhips or cargoes, &c. ſhall, within thirty days after the ſervice performed, be paid a reaſonable reward for the ſame by the commander or other ſuperior officer, mariners, or owners of the ſhip or goods ſo ſaved; and in default thereof, the ſhip, veſſel, or goods ſo ſaved, ſhall remain in cuſtody of the collector of the cuſtoms, or his deputy, until all charges ſhall be paid, and until all perſons ſo employed ſhall be reaſonably gratified for their trouble; or good ſecurity given, to the ſatisfaction of the ſeveral parties that are to receive the ſame. And in caſe the commander or other ſuperior officer, mariners, or owners, of the ſhip or goods ſo ſaved, ſhall diſagree with the ſaid officer of the cuſtoms, touching the money deſerved by the perſons ſo employed, the commander of the ſhip ſaved, or the owner of the goods therein, and the ſaid officer of the cuſtoms, may nominate three neighbouring juſtices, who ſhall adjuſt the *quantum* of the gratuity to be paid to the ſeveral perſons acting in the ſalvage of the ſhip or goods; and ſuch adjuſtment ſhall be binding to all parties, and ſhall be recoverable in an action at law to be brought by the reſpective perſons to whom the ſame ſhall be allotted by the juſtices. And in caſe no perſon ſhall appear to make his claim to all or any of the goods ſaved, then the chief officer of the cuſtoms of the neareſt port ſhall apply to three of the neareſt juſtices, who ſhall put him or ſome reſponſible perſon in poſſeſſion of ſuch goods, ſuch juſtices taking an account thereof in writing, to be ſigned by ſuch officers of the cuſtoms; and if the goods ſhall not be legally claimed within 12 months, by the right owners, they ſhall be publicly ſold, or, if periſhable, forthwith ſold, and the produce of the ſale, after all charges deducted, with a fair account of the whole, ſhall be tranſmitted to the Exchequer, there to remain for the benefit of the owner, when appearing; who, upon affidavit, or other proof of his right, to the ſatisfaction of one of the barons of the coif, ſhall, upon his order, receive the ſame out of the Exchequer.

This ſtatute alſo preſcribes the puniſhment to be inflicted on perſons guilty of plundering or deſtroying ſhips in diſtreſs. But this being found inſufficient to repreſs theſe barbarous practices, the ſtat. 26 Geo. II. c. 19. has enacted a variety of further regulations for the more effectual puniſhment of offenders, and the better protection of ſhips in diſtreſs.

On the ſubject of ſalvage, the fifth ſection of this act provides, that, in caſe any perſon, not employed in the ſalvage of the ſhip or goods, ſhall, in the abſence of the perſons ſo employed and authorized, ſave any ſuch ſhip or goods, and cauſe the ſame to be carried, for the benefit of the owners, into port, or to any near adjoining cuſtom-houſe, or other place of ſafe cuſtody, immediately giving notice thereof to ſome magiſtrate, or cuſtom-houſe, or exciſe-officer; or ſhall diſcover to ſuch magiſtrate, or officer, where ſuch goods are wrongfully bought, ſold, or concealed, then ſuch perſon ſhall be entitled to a reaſonable reward for ſuch ſervices, to be paid by the maſter or owners of ſuch veſſels or goods; and to be adjuſted, in caſe of diſagreement about the *quantum*, in like manner as the ſalvage is to be adjuſted and paid by virtue of the ſtat. 12 Ann.

And by ſect. 6, for the better aſcertaining the ſalvage to be paid in purſuance of this and the former act, the juſtice, mayor, bailiff, collector of the cuſtoms, or chief conſtable, who ſhall be neareſt to the place where the ſhip or goods ſhall be ſtranded, ſhall forthwith give public notice for a meeting, to be held as ſoon as poſſible, of the ſheriff, or his deputy, the juſtices, mayors, or other chief magiſtrates of towns, coroners, or commiſſioners of the land-tax, or any five or more of them, who are required to give aid in the execution of this and the former act, and to employ proper perſons for the ſaving of ſhips in diſtreſs, and ſuch ſhips and effects as ſhall be ſtranded or caſt away; and alſo to examine perſons on oath touching the ſame, or the ſalvage thereof, and to adjuſt the *quantum* of ſuch ſalvage, and diſtribute the ſame among the perſons concerned in ſuch ſalvage, in caſe of diſagreement among the parties, or the ſaid perſons; and that every ſuch magiſtrate, &c. attending and acting at ſuch meeting, ſhall be paid four ſhillings a day for his expences, out of the goods ſaved by their care or direction. Provided (ſect. 7.) that if the charges and rewards for ſalvage, directed to be paid by this and the former act, ſhall not be fully paid, or ſufficient ſecurity given for the ſame within 40 days after the ſervices performed, the officer of the cuſtoms concerned in ſuch ſalvage ſhall borrow or raiſe ſo much money as ſhall be ſufficient to pay ſuch charges, or any part thereof remaining unpaid, or not ſecured as aforeſaid, by or upon one or more bill or bills of ſale, under his hand and ſeal, of the ſhip or veſſel, or cargo ſaved, or ſuch part thereof as ſhall be ſufficient, redeemable on payment of the principal ſum borrowed, and intereſt at 4 *per cent. per annum.*

From the foregoing extracts it appears, that, by our law, the ſalvage of ſhips or goods ſtranded or caſt away is a reaſonable ſatisfaction to the perſons employed in ſaving and protecting them for their labour; eſtimated, not according to their own arbitrary will, but by perſons of the firſt reſpectability in and near the place where the misfortune happens.

Salvage in the caſe of recapture has been fixed by ſeveral ſtatutes (*viz.* 13 Geo. II. c. 4. and 29 Geo. II. c. 34.) at certain rates, according to the interval of time the recaptured ſhip was in the hands of the enemy. But the regulations now in force were eſtabliſhed by the laſt prize act. Accordingly, by ſtat. 33 Geo. III. c. 66. § 42. "If any ſhip or veſſel, taken as prize, or any goods therein, ſhall appear, in the court of admiralty, to have belonged to any of his majeſty's ſubjects, which were before taken by any of his majeſty's enemies, and at any time afterwards retaken by any of his majeſty's ſhips, or any privateer, or other ſhip or veſſel under his majeſty's protection; ſuch ſhips, veſſels, and goods ſhall, in all caſes, (ſave as hereafter excepted,) be adjudged to be reſtored, and ſhall be accordingly reſtored, to ſuch former owner or owners, he or they paying for ſalvage, if retaken by any of *his majeſty's ſhips*, *one-eighth* part of the true value thereof to the flag officers, captains, &c. to be divided as the ſame act directs: and if retaken by any *privateer*, or other ſhip or veſſel, *one-ſixth* part of the true value of ſuch ſhips and goods to be paid to the owners, officers and ſeamen of ſuch privateer or other veſſel, without any deduction. And if retaken by the joint operation of one or more of his majeſty's ſhips, and one or more private ſhips of war, the judge of the court of admiralty, or other court having cognizance thereof, ſhall order ſuch ſalvage, and in ſuch proportions, to be paid to the recaptors by the owners, as he ſhall, under the circumſtances of the caſe, deem fit and reaſonable. But if ſuch recaptured ſhip or veſſel ſhall appear to have been ſet forth, by the enemy, as a ſhip or veſſel of war, the ſaid ſhip or veſſel ſhall not be reſtored to the former owners; but ſhall, in all caſes, whether retaken by any of his majeſty's ſhips, or by any privateer, be adjudged lawful prize, for the benefit of the captors."

The regulations above cited relate only to the ſalvage of Britiſh ſhips recaptured. In the caſe of neutral ſhips captured by the enemy, and retaken by Britiſh men of war or privateers, the court of admiralty have a diſcretionary power of allowing ſuch ſalvage, and in ſuch proportions, as, under the circumſtances of each particular caſe, may appear juſt. But there is no poſitive law, or binding regulation, to which parties may appeal to regulate the rate of ſuch ſalvage. *Some* ſalvage in ſuch caſes is generally allowed; and in practice the rate is uſually regulated by the ſame rules as in the caſe of Britiſh property.

Before an action will lie for a loſs by payment of ſalvage, the amount of ſuch ſalvage muſt have been aſcertained by the deciſion of the court of admiralty, which alone has juriſdiction to determine as to the *right* of ſalvage in all caſes, and, in the caſe of the recapture of neutrals, as to the *amount* of ſuch ſalvage.

When the ſalvage, however, is very high, the inſured may abandon, and call upon the inſurer as for a total loſs.

By the law of England, according to the opinion of lord Mansfield, there is neither average nor ſalvage upon bottomry contracts; however, ſays ſerjeant Marſhal, it muſt be admitted, that, without the benefit of ſalvage, this contract muſt partake, in a great degree, of the nature of a wager, even when the money is lent upon goods on board of equal value. If there be a total loſs of the ſhip, the lender loſes all, though all the goods are ſaved. Marſhal's Law of Inſurance, vol. ii.

Salvage, in *Geography*, a rock near the coaſt of Maſſachuſetts, lying off Cape Anne.

SALVAGES, a cluſter of iſlands in the North Atlantic ocean, N. of the Canaries; the chief of which is high and rocky, and about a league in circumference. Between this and another three or four leagues S.W. of it are many rocks and ſands, ſome above, and others under water, which render the navigation of the adjacent ſeas dangerous, except on the E. ſide of the great iſland, the chief produce of which is orchilla weed. It is frequented in ſummer by barks or boats from the Canary iſlands, in ſearch of wrecks, and alſo of cormorants, or ſea-fowl reſembling them, which are caught in their neſts, killed and ſalted, and carried for ſale to Teneriffe. Theſe uninhabited iſlands are dependent on the iſland of Madeira, and belong to the Portugueſe, who are very tenacious of their intereſt in them, and ſevere in their puniſhment of interlopers. N. lat. 30° 4′. W. long. 15° 54′.

SALVAIGNAC, a town of France, in the department of the Tarn, and chief place of a canton, in the diſtrict of Gaillac; 9 miles W. of Gaillac. The place contains 1275, and the canton 3608 inhabitants, on a territory of 145 kiliometres, in 9 communes.

SALVATELLA Vena, in *Anatomy*, an old name given to a vein of the hand, beginning at the back of the little finger, and running into the commencement of the vena baſilica.

SALVATEON *de Yguey*, in *Geography*, a town of Hiſpaniola; 72 miles E. of St. Domingo, famous for its ſugar-works and luxuriant paſtures.

SALVATERRA, a town of Portugal, near the union of the river Erra with the Tagus, in Eſtremadura, where is a royal palace; 15 miles S. of Santarem.—Alſo, a town of Italy, in the department of the Upper Po; 18 miles E. of Cremona.

Salvaterra *do Extrema*, a town of Portugal, in the province of Beira, on the borders of Spain; 4 miles N. of Alcantara. N. lat. 39° 43′. W. long. 6° 36′.

SALVATIERRA, a town of Spain, in the province of Alava; 14 miles E.N.E. of Vittoria.—Alſo, a town of Spain, in the province of Leon; 12 miles E.S.E. of Civdad Rodrigo.—Alſo, a town of Spain, in Aragon; 22 miles W.N.W. of Jaca.—Alſo, a town of Spain, in Galicia, on the Minho; 7 miles N.E. of Tuy.

SALVATOR Rosa, in *Biography*. See Rosa.

SALVATORE, in *Geography*, a mountain of Naples, in Lavora; 8 miles N. of Capua.

SALUCO. See Salico.

SALUDA, a river of America, in South Carolina, which riſes in the Nunic mountains, called at firſt Reedy river, which name it retains during about half its courſe, which is ſouth-eaſterly, till it joins the Cangaree, about 5 miles N.W. of Columbia.

SALVE Regina, among the Romaniſts, the name of a Latin prayer, addreſſed to the Virgin, and ſung after complines; as alſo upon the point of executing a criminal.

Durandus ſays, it was compoſed by Peter, biſhop of Compoſtella. The cuſtom of ſinging the ſalve regina, at the cloſe of the office, was begun by order of St. Dominic, and firſt, in the congregation of Dominicans at Bologna, about 1237, Gregory IX. firſt appointed it to be general. St. Barnard added the concluſion, *O dulcis! O pia,* &c.

The ſalve regina has been ſet to muſic by all the great Roman Catholic compoſers of the laſt century, particularly by Pergoleſi and Haſſe, whoſe admirable compoſitions were printed in England about the middle of the laſt century, and in high eſtimation among true lovers and judges of muſic.

Salve, *Lip*. See Pomatum.

SALVER, a flat diſh, commonly of ſilver, or other precious metal, uſed to ſet glaſſes on to ſerve wines and other liquors.

The French call it *ſous-coupe, under-cup*. The Italians uſed to preſent a ſalver, with ſeveral kinds of wines, with this compliment, *ſi non e buono, fatte lo: if it be not good, make it ſo.*

SALVER-SHAPED, in *Botany*, *hypocrateriformis*, is a term appropriated to a regular monopetalous corolla, with a horizontal limb, and an elongated tube, as in the Primroſe. See Corolla.

SALVETAT, La, in *Geography*, a town of France, in the department of the Herault, and chief place of a canton, in the diſtrict of St. Pons; 6 miles N.N.W. of St. Pons. The town contains 3229, and the canton 5581 inhabitants, on a territory of 207½ kiliometres, in three communes.—Alſo, a town of France, in the department of the Aveyron, and chief place of a canton, in the diſtrict of Rodez; 6 miles W. of Sauveterre. The place contains 472, and the canton 4440 inhabitants, on a territory of 132½ kiliometres, in 9 communes.

SALUGIA, a town of France, in the department of the Seſia; 4 miles N.W. of Creſcentino.

SALVIA, in *Botany*, an ancient name, ſuppoſed to allude to the ſalutary qualities of the plant. Yet the old adage, "cur morietur homo cui *Salvia* creſcit in horto?" ſeems rather a joke upon the name, than a teſtimony to its propriety.—Linn. Gen. 17. Schreb. 23. Willd. Sp. Pl. v. 1. 127. Mart. Mill. Dict. v. 4. Vahl. Enum. v. 1. 221. Sm. Fl. Brit. 30. Prodr. Fl. Græc. Sibth. v. 1. 13. Ait. Hort. Kew. v. 1. 52. Brown Prodr. 500. Purſh 19. Juſſ. 111. Tourn. t. 83. Lamarck Illuſtr. t. 20. Gærtn. t. 66. (Horminum; Tourn. t. 82. Sclarea; ibid.)—Claſs and order, *Diandria Monogynia*. Nat. Ord. *Verticillatæ*, Linn. *Labiatæ*, Juſſ. Brown.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, tubular, ſomewhat bell-ſhaped, ſtriated, gradually dilated upwards, and compreſſed, two-lipped; its upper lip uſually with three teeth; lower divided. *Cor.* of one petal; tube dilated upwards, compreſſed; limb ringent; its upper lip concave, compreſſed, incurved, emarginate; lower broad, three-cleft, the middle ſegment largeſt, roundiſh, emarginate. *Stam.* Filaments two, very ſhort, each bearing two others, attached tranſverſely, nearly by their middle part, the lower end of each bearing a gland, the upper an oblong anther. *Piſt.* Germen ſuperior, four-cleft; ſtyle thread-ſhaped, very long, in the poſition of the ſtamens; ſtigma divided. *Peric.* none, the calyx, very ſlightly converging, contains the ſeeds in its lower part. *Seeds* four, roundiſh.

Obſ. The peculiar bifurcation of the filaments conſtitutes the eſſential character. There are rudiments of two other ſtamens, but abortive in the throat of the corolla. The gland above-mentioned is moſtly of a callous nature; in a few inſtances, however, it ſeems like the rudiment of an anther, being now and then ſlightly powdery.

Eſſ. Ch. Calyx ſomewhat bell-ſhaped, two-lipped. Corolla ringent. Filaments ſtalked tranſverſely. Seeds four, naked. An extenſive genus of herbaceous, or partly ſhrubby, moſtly perennial, plants; with ſquare *ſtems;* oppoſite, veiny, hairy and rugoſe, rarely compound, *leaves;* whorled and racemoſe *flowers*, accompanied by *bracteas*. The *corolla* is uſually blue or purpliſh, ſometimes ſcarlet, rarely yellowiſh, often very handſome; the flavour of the whole plant aromatic, and moſtly bitteriſh. The *ſeeds* of many ſpecies are coated with a mucilage, ſoluble and ſwelling in water.—Linnæus defines thirty-two *Salviæ* in his Sp. Pl. ed. 2, to which ſix are added in the Mantiſſa, and ſix more in the Supplement. Willdenow has ſeventy-ſix in all, and Vahl one hundred and thirty-ſeven. Mr. Aiton enumerates fifty-nine in his Hort. Kew.; two of them only being natives of Britain. Mr. Brown has added one, and Mr. Purſh two, to the number of known ſpecies. The inaugural diſſertation of Dr. Etlinger, *de Salvia*, publiſhed at Erlang in 1777, contains much information on the ſubject, and is cited in ſome of the books above-mentioned, for ſeveral ſpecies. Four new ones are deſcribed and delineated in the Flora Græca, where alſo are fine repreſentations of ſeveral of the Linnæan ſpecies.

No writer has attempted to divide this genus into ſections or ſubdiviſions of any kind. We ſhall deſcribe ſome of the moſt remarkable ſpecies; particularly thoſe of Engliſh growth, and ſuch as have any valuable qualities; taking Willdenow as the moſt popular guide, with reſpect to their arrangement.

S. *ægyptiaca*. Egyptian Sage. Linn. Sp. Pl. 33. Willd. n. 1. Vahl. n. 1. Ait. n. 1. Jacq. Hort. Vind. v. 2. 49. t. 108.—Leaves lanceolate, ſharply toothed. Whorls of a few ſtalked flowers. Bracteas ovate, pointed.—Native of Egypt and the Canary iſlands, flowering in our gardens in June and July, where it is annual in the open ground, perennial if kept in a ſtove. This is a ſmall inconſpicuous ſpecies, with a buſhy *ſtem*, about a foot high, and pale purpliſh *flowers*, whoſe under lip reſembles that of a *Nepeta*. Gouan ſays the *ſtamens* are very often four; and Forſkall took this plant for a *Meliſſa*.

S. *cretica*. Cretan Sage. Linn. Sp. Pl. 33. Willd. n. 3. Vahl. n. 2. Ait. n. 3. (S. tenuifolia; Rivin. Monop. ſuppl. t. 57. S. cretica anguſtifolia; Cluſ. Hiſt. v. 1. 343.)—Leaves lanceolate, crenate. Calyx divided to the baſe. Styles two.—Native of Crete. Sometimes met with in curious gardens. Willdenow thinks it a mere variety of the following, but Etlinger, though quoted by Vahl as of the ſame opinion, only ſays that ſome perſons thought ſo. The plant appears to us diſtinct, being ſmaller, with narrower *leaves*, than the *officinalis*, and long *footſtalks*. The two *ſtyles* are remarkable, but we know not that they have each two *ſtigmas*.

S. *officinalis*. Garden Sage. Linn. Sp. Pl. 34. Willd. n. 7. Vahl. n. 4. Ait. n. 6. Woodv. Med. Bot. t. 38. (S. latifolia et minor; Rivin. Monop. Irr. t. 71. S. major et minor; Ger. Em. 764.)—Leaves lanceolate-ovate, finely crenate. Whorls of few flowers. Calyx ſharply pointed.—Native of rough ſtony ground in the ſouth of Europe; common in our gardens for above two hundred years paſt, flowering in June and July. The *ſtem* is ſhrubby. *Leaves* dull green, often purpliſh, hoary, with an aromatic flavour well known to every body. *Flowers* blueiſh, an inch long, with a brown viſcid *calyx*. There appear to be ſeveral varieties of this common plant, one or two perhaps of which may be entitled to rank as ſpecies.

S. *triloba*. Three-lobed Sage. Linn. Suppl. 88. Willd. n. 9. Vahl. n. 7. Ait. n. 8. Sm. Fl. Græc. Sibth. v. 1. 13. t. 17. (S. cretica pomifera et non pomifera; Cluſ. Hiſt. v. 1. 343. Ger. Em. 765.)—Leaves ovate, finely crenate, rugoſe; woolly beneath; auricled at the baſe. Calyx with five acute teeth. Native of Crete and Syria. Dr. Sibthorp found it common on rough open ground, throughout Greece and the iſlands of the Archipelago. Gerarde cultivated this plant in 1596, and it flowers in the open air with us, about Midſummer, though uſually ſheltered in winter in a greenhouſe. The habit of the ſhrub is more denſe and hoary than the common Garden Sage, and the *leaves* are diſtinguiſhed by a pair of round leaflets at their baſe. *Whorls* very numerous. *Calyx* almoſt equally five-toothed, much ſmaller than in *S. officinalis*. *Corolla* pale purple, an inch long. The young branches of this ſpecies, as well as of the laſt, frequently bear large eatable galls, of which we ſhall ſay more under the following.

S. *pomifera*. Apple-bearing Sage. Linn. Sp. Pl. 34. Willd. n. 10. Vahl. n. 8. Ait. n. 9. Sm. Fl. Græc. Sibth. v. 1. 12. t. 15. (S. cretica fruteſcens pomifera, foliis longioribus incanis et criſpis; Tourn. Voy. v. 1. 30, with a figure.)—Leaves lanceolate, waved, crenate, hoary, reticulated with veins; heart-ſhaped at the baſe. Calyx three-lobed, bluntiſh.—Native of open, rough and ſtony hills, in Crete and various parts of the Levant, very common in Greece, bloſſoming in July; requiring the ſhelter of a greenhouſe in England, with a regular, but not profuſe, ſupply of water. A handſome buſhy ſhrub, two or three feet high. The *leaves* have a ſilvery hoary aſpect, and a grateful pungent ſmell like lavender. *Flowers* large, pale lilac, in whorls crowded into a denſe ſpike at the ſummit of each branch. The *calyx* has only three lobes, which are broad, acute, ribbed, tinged with red. This plant derives its name from the globular galls produced on its young ſhoots, in conſequence of the attack of an inſect of the *Cynips* genus, which are about an inch in diameter, full of an acid aromatic juice. Theſe are ſold in the markets of Crete, and are much eſteemed when candied with ſugar. *S. officinalis* and *triloba* bear ſimilar excreſcences.

S. *calycina*. Broad-cupped Sage. Sm. Fl. Græc. Sibth. v. 1. 13. t. 16. (S. orientalis fruteſcens, foliis circinatis, acetabulis moluccæ; Tourn. Cor. 10.)—Leaves ovate, crenate, flat, hoary, reticulated with veins. Calyx three-lobed, dilated, abrupt, with a ſmall point.—Gathered by Dr. Sibthorp on mount Hymettus, near Athens, flowering in July. The habit and flavour of this plant are like the laſt; but the *leaves* differ materially, in being of a broad, ovate form, even, without undulations or ſegments. The *calyx* has wider, inverſely heart-ſhaped lobes. Linnæus erroneouſly applies the ſynonym of Tournefort to his *S. acetabuloſa*, Mant. 25.

S. *viridis*. Green-topped Sage. Linn. Sp. Pl. 34. Willd. n. 16. Vahl. n. 77. Ait. n. 12. Sm. Fl. Græc. Sibth. v. 1. 15. t. 19. Jacq. Miſc. v. 2. 366. Ic. Rar. t. 4. Desfont. Atlant. v. 1. 20. t. 1.—Leaves ovate, obtuſe, crenate. Calyx reflexed when in fruit. Bracteas rhomboid, with a pair of linear appendages at the baſe.—Found in fields of the ſouth of Europe, and the Levant. A ſmall, annual, ſlightly branched, herb, with ſcarcely any aromatic flavour, and no pretenſions to beauty. The *leaves* are light green. *Flowers* pale purpliſh-blue; their *whorls* crowded into a *ſpike*, whoſe upper *bracteas* are ſcarcely different from the lower, ſo that Vahl may perhaps be more correct in taking it for the *Horminum orientale, annuum, ſativo ſimile, comâ carens, flore violaceo*, of Tournefort's Corolla, than Linnæus, who conſidered it as *H. comâ viridi* of the ſame author's *Inſtitutiones*. This difference we, nevertheleſs, conceive to be of no moment, for there is every reaſon to ſuppoſe the preſent plant a variety of the following ; or rather perhaps the original ſpecies.

S. *Horminum.* Purple-topped Sage, or Annual Clary. Linn. Sp. Pl. 34. Willd. n. 17. Vahl. n. 76. Ait. n. 13. Sm. Fl. Græc. Sibth. v. 1. 15. t. 20. (Horminum ſylveſtre, foliis purpureis ; Ger. Em. 771.)—Leaves ovate, obtuſe, crenate. Calyx reflexed when in fruit. Bracteas with appendages at the baſe ; the upper ones barren and coloured. Native of the ſouth of Europe. Frequent in the fields of Greece. It is very commonly cultivated, as a hardy annual, in our gardens, flowering in June and July, being chiefly eſteemed for the either purple or pink hue of its large upper *bracteas*, agreeing in that reſpect with the *flowers* in the whorls below. Theſe enlarged *bracteas*, and perhaps a greater luxuriance in the herbage, appear to us to indicate a variety of the laſt, rather than a diſtinct ſpecies.

S. *pratenſis.* Meadow Sage, or Clary. Linn. Sp. Pl. 35. Willd. n. 24. Vahl. n. 96. Sm. Fl. Brit. n. 1. Engl. Bot. t. 153. Bulliard. t. 357.—Leaves heart-ſhaped-oblong, crenate ; the uppermoſt claſping the ſtem. Bracteas minute. Summit of the corolla glutinous.—Native of dry meadows and paſtures in ſeveral parts of Europe ; rare in England, occurring chiefly on a lime-ſtone ſoil, and flowering in July. The *root* is perennial. *Stem* herbaceous, erect. *Leaves* oblong, nearly ſmooth, doubly crenate. *Flowers* large, deep blue, in numerous whorls. *Calyx* with three ſmall teeth to its upper lip ; the lower in two deep ſegments.

S. *indica.* Indian Sage. Linn. Sp. Pl. 37. Mant. 318. Willd. n. 26. Vahl. n. 94. Ait. n. 22. Curt. Mag. t. 395. Jacq. Hort. Vind. v. 1. t. 78.—Leaves heart-ſhaped, ſomewhat lobate ; the upper pair ſeſſile. Whorls very remote, with minute bracteas. Lower lip of the corolla concave, with two lanceolate lobes at the baſe.—Said to be a native of India, but we have no correct account of its country. In gardens it is a tolerably hardy perennial, flowering in ſummer, but requiring to be frequently renewed from ſeed. The *ſtem* is weak and ſlender, three or four feet high. *Flowers* large, and eminently beautiful, in conſequence of their ſpeckled lower lip, whoſe border ſoon acquires a tawny hue. The upper lip is bright blue.

S. *verbenaca.* Wild Engliſh Clary. Linn. Sp. Pl. 35. Willd. n. 28. Vahl. n. 79. Sm. Fl. Brit. n. 2. Engl. Bot. t. 154. Curt. Lond. faſc. 6. t. 1. (Horminum ſylveſtre ; Ger. Em. 771.)—Leaves ſerrated, ſinuated, nearly ſmooth. Corolla much narrower than the calyx ; with a ſtricture at the top of its tube.—A common herb in paſtures and by way ſides in England and other parts of Europe, flowering from June to October. The *ſtem* is decumbent in its lower part. The *herbage* is dark green, conſiderably aromatic. *Flowers* ſmall, deep violet, ſix in each whorl, forming rather cloſe *ſpikes*, with green ovate *bracteas*, ſhorter than the flowers. The *ſeeds*, when moiſtened, become enveloped in denſe mucilage, and are therefore often uſeful to extract ſand, or any irritating particles, which may happen to get between the eye and the eyelids.

S. *multifida.* Many-cleft Sage. Sm. Fl. Græc. Sibth. v. 1. 17. t. 23. (Horminum ſylveſtre, inciſo folio, cæſio flore, italicum ; Barrel. Ic. t. 220.)—Leaves heart-ſhaped, many-cleft, cut, ſmooth. Stem leafy, unbranched. Appendages of the ſtamens abrupt. Native of paſtures about Conſtantinople, according to Mr. Ferdinand Bauer, who gathered it in company with Dr. Sibthorp. *Root* perennial, woody, throwing up ſeveral ſimple leafy *ſtems*, ſcarcely a ſpan high, which are hairy and viſcid. *Leaves* roughiſh at the edges only. *Spikes* ſolitary, terminal, about two inches long, with ſix pale violet *flowers* in each whorl, and broad *bracteas*, the length of the briſtle-pointed *calyx*. The appendage to each *ſtamen* is remarkably ſhort and obtuſe.

S. *clandeſtina.* Cut-leaved Sage. Linn. Sp. Pl. 36. Willd. n. 31. Vahl. n. 80. Ait. n. 27. Sm. Fl. Græc. Sibth. v. 1. 18. t. 24. Desfont. Atlant. v. 1. 23.—Leaves pinnatifid, with linear, ſerrated, very rugged, hairy ſegments. Stems leafy. Calyx pointleſs.—Native of the north of Africa ; frequent in cultivated fields in the iſland of Cyprus. *Root* biennial, ſlender. *Stems* numerous, aſcending, a ſpan high, ſlightly branched. *Leaves* hoary, very narrow. *Flowers* paler and more reddiſh than in the laſt, with a longer appendage to each *ſtamen*, and ſmaller *bracteas*. The *calyx* moreover is obtuſe, and deſtitute of briſtly points. Dr. Sibthorp long ago remarked to us, that Barrelier's t. 220, referred by Linnæus to this ſpecies, properly belongs to the laſt-deſcribed.

S. *amethyſtina.* Amethyſtine Sage. Sm. Pl. Ic. t. 27. Willd. n. 39. Vahl. n. 39.—Leaves heart-ſhaped, acute, ſerrated ; woolly beneath. Whorls without bracteas. Calyx three-cleft. Corolla downy.—Gathered in New Granada by Eſcallon, the fellow labourer of Mutis. This is a ſlightly ſhrubby ſpecies, conſpicuous for its handſome large *flowers*, of a rich violet hue, with a velvety upper lip.

S. *formoſa.* Shining-leaved Scarlet Sage. L'Herit. Stirp. 41. t. 21. Willd. n. 41. Ait. n. 34. Curt. Mag. t. 376. (S. leonuroides ; Gloxin Obſ. Bot. 15. t. 2. Vahl. n. 33. S. nodoſa ; Fl. Peruv. v. 1. 25. t. 41. f. *a.*) —Leaves heart-ſhaped, crenate, naked. Whorls axillary. Calyx three-cleft. Corolla ſhaggy. — Native of ſandy, argillaceous, or ſtony ground, at *Huanuco* in Peru, flowering all the year round, but eſpecially in May and June. It was ſent to Kew in 1783, by M. Thouin, and proves a hardy greenhouſe ſhrub, readily increaſed by cuttings. The *foliage* is deep green, ſhining and viſcid, paler beneath. *Flowers* ſix in each axillary whorl, on long ſtalks, with a few ſmall occaſional *bracteas*. *Corolla* large, of a rich and brilliant ſcarlet ; its upper lip clothed with hairs of the ſame colour. There are ſeveral other fine Mexican or Peruvian ſpecies of Sage, more or leſs allied to this and the preceding.

S. *aurea.* Golden African Sage. Linn. Sp. Pl. 38. Willd. n. 55. Vahl. n. 20. Ait. n. 45. Curt. Mag. t. 182. (S. africana fruticans, folio ſubrotundo glauco, flore magno aureo ; Comm. Hort. v. 2. 183. t. 92.) — Leaves roundiſh, glaucous ; the lower ones abrupt and toothed at the baſe ; the upper entire. Calyx hairy, pointleſs ; dilated when in fruit.—Native of the banks of rivulets, at the Cape of Good Hope ; flowering at various ſeaſons in our greenhouſes. The *ſtem* is buſhy, ſhrubby. *Leaves* hardly an inch long, much ſmaller than the *flowers*, which are oppoſite, not whorled, in ſeveral pairs at the ends of the branches ; their *corolla* of a browniſh-yellow, with a peculiar acid ſcent, reſembling the flavour of tamarinds. The *calyx* has really five lobes, though ſome of them are very ſhallow.

There are ſeveral Cape.

S. *Sclarea.* Common Clary. Linn. Sp. Pl. 38. Willd. n. 61. Vahl. n. 125. Ait. n. 50. Sm. Fl. Græc. Sibth. v. 1. 18. t. 25. (Gallitricum, ſive Horminum ; Ger. Em. 768.) — Leaves oblong-heart-ſhaped, rugged, villous, doubly crenate. Bracteas coloured, concave, longer than the calyx.—Native of Italy, Syria, and Bithynia. One of the exotic herbs which has been longeſt known in the Engliſh gardens, where it is a hardy biennial, flowering from July to September. The *ſtem* is two or three feet high. *Leaves* as large as the hand, viſcid and ſtrongly ſcented, like the reſt of the plant. *Flowers* and *bracteas* variegated with pale purple and yellowiſh-white, compoſing long whorled ſpikes. *Calyx* with five ſpinous teeth. This plant is ſometimes uſed for making wine, whoſe flavour reſembles that of cowſlip or elder flowers, and which likewiſe affects the head by its narcotic quality.

S. *craſſifolia.* Thick-leaved Sage, or Clary. Sm. Fl. Græc. Sibth. v. 1. 19. t. 26. S. candidiſſima; Vahl. n. 130. Sclarea orientalis, foliis rotundioribus candidiſſimis; Tourn. Cor. 10.)—Leaves heart-ſhaped, crenate, rugged, woolly on both ſides. Stem leafleſs. Bracteas ſhorter than the calyx.—Native of Armenia and Cyprus. A very woolly, thick-leaved, perennial ſpecies, about a foot high, with pale blueiſh *flowers*, whoſe lip is variegated, ſoon withering at the margin.

S. *argentea.* Silvery-leaved Sage. Linn. Sp. Pl. 38. Willd. n. 66. Vahl. n. 278. Ait. n. 53. Sm. Fl. Græc. Sibth. v. 1. 20. t. 27. Jacq. Hort. Schoenbr. v. 1. 4. t. 6. (Sclarea orientalis, verbaſci folio, flore partim albo, partim flaveſcente; Tourn. Cor. 10.)—Leaves oblong, doubly crenate, rugged, woolly. Bracteas ſhorter than the calyx. Upper whorls abortive.—Native of Crete. Gathered by Dr. Sibthorp likewiſe on mount Parnaſſus. That ingenious botaniſt conceived it might be the kind of *αιθιοπις* which Dioſcorides ſays grows on mount Ida. A large, biennial, hoary herb, whoſe *ſtem* aſſumes a panicled form, bearing many oppoſite whorled *ſpikes*, of large white *flowers* all turned one way; their palate yellowiſh.

S. *pinnata.* Winged-leaved Sage. Linn. Sp. Pl. 39. Willd. n. 68. Vahl. n. 12. Ait. n. 54. (S. orientalis latifolia hirſutiſſima viſcoſa pinnata, flore et calyce purpureis, inodora; Boerh. Ind. Alt. v. 1. 167, with a plate.) —“Hairy and viſcid. Leaves interruptedly pinnate; with oblong jagged leaflets, unequal at the baſe. Calyx inflated.” *Vahl.*—Native of the Levant. Miller had it at Chelſea, but we have not often met with the plant, even in dried collections. Boerhaave's figure is incorrect, as to the compoſition of the *leaves*, which are of a dull green, hairy, not hoary. *Flowers* in diſtant whorls, with a coloured *calyx*. The *root* is deſcribed as biennial.

S. *ringens.* Ringent Sage. Sm. Fl. Græc. Sibth. v. 1. 14. t. 18.—Leaves interruptedly pinnate, rugged, crenate, ſomewhat revolute. Flowering branches panicled. Corolla bent downwards, recurved.—Native of ſtony places on the ſides of mountains in many parts of Greece, where it was gathered by Dr. Sibthorp and Mr. Hawkins. The *root* is woody and perennial. *Stems* ſeveral, erect, a foot high; leafy below; naked in the middle; panicled, with oppoſite branches, above. *Leaflets* ovate; pale and woolly at the back. *Flowers* large, without *bracteas*. *Calyx* tubular, purpliſh. *Corolla* pale purple, ſingularly bent downwards, with a long tube, then recurved; its palate dotted.

S. *roſæfolia.* Roſe-leaved Sage. Sm. Pl. Ic. t. 5. Willd. n. 70. Vahl. n. 14. (S. orientalis, foliis alatis minoribus et crenatis, odore mari; Tourn. Cor. 11.)—Leaves pinnate, hoary; leaflets ſerrated. Calyx ringent. —Gathered by Tournefort in Armenia. An elegant ſhrubby ſpecies, with hairy *branches*, and ſimply pinnate *leaves*, conſiſting of two pair of ſtalked leaflets with an odd one. *Flowers* ſeveral in each whorl, rather large.

S. *Forſkælei.* Forſkall's Sage. Linn. Mant. 26. Willd. n. 73. Vahl. n. 123. Ait. n. 57. Sm. Fl. Græc. Sibth. v. 1. 16. t. 21. Curt. Mag. t. 988. (S. bifida; Forſk. Ægypt-Arab. 202.)—Leaves lyrate, crenate, rough. Stem nearly leafleſs. Upper lip of the corolla cloven half way down.—Native of the Levant. Dr. Sibthorp found it in ſhady woods on the Bithynian Olympus, as well as about the village of Belgrad, near Conſtantinople, flowering in July. The plant has recently been introduced into our gardens, and is a hardy perennial, flowering in July and Auguſt, conſpicuous for its copious large whorled purple *flowers*, whoſe palate is white, with purple dots and ſtreaks.

S. *Sibthorpii.* Sibthorp's Sage. Sm. Fl. Græc. Sibth. v. 1. 17. t. 22.—Leaves heart-ſhaped, lobed, crenate, rugged, rough. Stem almoſt leafleſs, branched. Appendages of the ſtamens dilated.—Native of Greece and the iſland of Zante. Dr. Sibthorp, on account of a purple ſtain on the diſk of each *leaf*, took this for the Linnæan *S. hæmatodes*; but it proving different, and very diſtinct, we have dedicated the ſpecific name to its worthy diſcoverer. The *ſtem* is twelve or eighteen inches high, with long *branches*, beſet with abundance of *whorls*, of ſmall, pale purple, *flowers*. *Calyx* bell-ſhaped. Appendage of each *ſtamen* remarkably dilated, or leaf-like.

S. *plebeia.* Vulgar Sage. Brown n. 1.—“Leaves lanceolate, crenate, very minutely downy, all ſtalked. Spikes ſomewhat panicled. Whorls diſtinct, with ſmall bracteas. The middle ſegment of the upper lip of the calyx minute.” —Gathered by Mr. Brown at Port Jackſon, New South Wales. We have no ſpecimen, nor are we certain where this ſpecies ought to be inſerted.

SALVIA, in *Gardening*, contains plants of the underſhrubby, herbaceous, and ſhrubby kinds, of which the ſpecies cultivated are, the garden ſage (S. officinalis); the broad-leaved garden ſage (S. grandiflora); the three-lobed ſage, or ſage of virtue (S. triloba); the common clary (S. ſclarea); the ſilvery-leaved ſage or clary (S. argentea); the vervain ſage or clary (S. verbenaca); the Indian ſage or clary (S. indica); the red-topped ſage or clary (S. horminum); the yellow ſage or clary (S. glutinoſa); the Mexican ſage (S. mexicana); the Canary ſage (S. canarienſis); the blue-flowered African ſage (S. africana); the gold-flowered African ſage (S. aurea); the apple-bearing ſage (S. pomifera); and the ſhining-leaved ſage (S. formoſa).

In the firſt ſort the varieties are: the common green ſage, the wormwood ſage, the green ſage with a variegated leaf, the red ſage, the red ſage with a variegated leaf, the painted or parti-coloured ſage with red leaves ſtriped with white, or white, red, and green mixed, found, ſays Johnſon, in a country garden, by Mr. John Tradeſcant, and by him imparted to other lovers of plants. There is alſo Spaniſh, or lavender-leaved ſage, in which the leaves are linear-lanceolate, very narrow, and quite entire, in cluſters on the ſide of the ſtalks; they are very hoary, and the branches are covered with a hoary down: the leaves on the upper part of the ſtalk are narrower than thoſe of roſemary; the flowers grow in cloſer ſpikes, and are of a light blue colour. But the variety with red or blackiſh leaves is the moſt common in cultivation; and the wormwood ſage is in greater plenty than the common green-leaved ſage.

The ſecond ſort is that which is frequently preferred for tea to all the others; it is often called balſamic ſage.

Of the fourth ſort a wine is ſometimes made from the herb in flower, boiled with ſugar, which has a flavour not unlike Frontiniac.

In the ninth ſort, the flowers are ſaid to be uſed in Holland to give a flavour to the Rheniſh wines.

In the fourteenth ſort, the branches have often punctures made in them by inſects, producing protuberances as big as apples, in the ſame manner as galls upon the oak, and the rough balls upon the briar. And it is remarked by Martyn, that the common ſage has the ſame excreſcences in the iſland of Candia or Crete, and that they carry them to market there under the name of ſage apples.

Method of Culture.—Theſe plants are in moſt of the ſorts raiſed without much difficulty or trouble.

Culture in the Sage Kind.—This, in this ſpecies and in all the varieties, may be effected by ſlips or cuttings of the young ſhoots from the ſides of the branches, ſometimes alſo by bottom-rooted offsets, and likewiſe by ſeed. Slips both of the former and the ſame year's growth may be uſed. Thoſe of the firſt ſort may be employed in April, but the latter not till May, or later: theſe, however, moſt readily ſtrike root, and aſſume a free growth. But in either caſe, moiſt weather ſhould be choſen; and having recourſe to ſome good buſhy plants, a proper quantity of the outward robuſt ſide-ſhoots, about five, ſix, or ſeven inches long, ſhould be ſlipped off, trimming off all the lower leaves, then planting them out in ſome ſhady border, with a dibble, in rows half a foot aſunder, putting them down almoſt to their tops, giving water directly, to ſettle the earth cloſe, as well as to promote an early emiſſion of root-fibres, and repeating the waterings occaſionally in dry weather; the ſlips in general ſoon emit fibres, and ſhoot freely at top: when they have a tendency to ſpindle up with ſlender ſhoots, or run up to flower, it is proper to top them ſhort, in order to force out laterals below to aſſume a buſhy growth: they moſtly form tolerably buſhy plants by the autumn, when, or in the ſpring following, they may be removed, with balls of earth about their roots, and be planted where they are to remain, either in four-feet beds, or in continued rows, a foot and a half aſunder, if deſigned as a cloſe plantation for uſe: thoſe deſigned for the pleaſure-ground ſhould be diſpoſed in the borders, &c. ſo as to afford variety.

And where there are rooted offsets, they may be ſlipped off ſeparately, with the fibres to them, either as the plants ſtand in the ground, or the bunches of plants taken up, and divided into as many ſeparate ſlips as are furniſhed with roots, being planted out at once where they are to remain. The plants raiſed from young ſlips generally form the ſtrongeſt and moſt buſhy plants.

In raiſing theſe plants from ſeed, which is but ſeldom practiſed, it ſhould be ſown in April, in a bed of light rich earth, raking it in: the plants ſoon come up; and when about two or three inches high, they ſhould be pricked out, the ſtrongeſt in nurſery rows, half a foot aſunder, to gain ſtrength till the autumn or ſpring following, and then planted out with balls where they are to ſtand.

Likewiſe in the after-culture of this ſpecies and varieties, all that is requiſite is the keeping them clean from weeds in ſummer, cutting down the decayed flower-ſtalks in autumn, and ſlightly digging between the rows in the ſame ſeaſon, to keep them clean and decent during the winter months, &c. But where this digging is not done in the autumn, it ſhould not be omitted in the ſpring.

With reſpect to the leaves of the ſage, they ſhould be gathered with care and attention, not to cut the tops too cloſe, to render the plants naked and ſtubby, eſpecially when late in autumn and winter; in which they would be more liable to ſuffer from ſevere froſt than when the head is preſerved ſomewhat full and regular: beſides, in this ſtate the plants continue longer in a proſperous free growth. But when, in any old plantation, naked, ſtubby, or decayed parts occur, they ſhould be cut out, and any ſtraggling irregular growths reduced to order by occaſional pruning in ſpring or ſummer, by which the plants will more readily emit freſh roots and form full heads. And freſh plantations of ſage ſhould be formed as the old ones decline. Alſo in continuing them where the ground is much impoveriſhed, a little dry rotten dung ſhould be pointed in lightly to give more vigour to the plants.

Culture in the Clary Kind.—Theſe, in the herbaceous kinds, are eaſily raiſed from ſeed, and in the perennial ſorts by parting the roots. The ſeed ſhould be ſown in March, in any bed or border of common earth, raking it in; and when the plants have got leaves of two or three inches growth, they ſhould be planted out in ſhowery weather, in rows eighteen inches diſtant, and at the ſame diſtance in the lines: they ſoon ſtrike root, and grow large, furniſhing large leaves, fit for uſe in autumn, winter, and the following ſpring. The perennial ſorts are raiſed from ſeed in the ſame manner, ſetting the young plants out in the ſummer in nurſery-rows till autumn, when they ſhould be planted out into the borders, &c. The annual ſorts may be ſown in ſpring in the borders, in patches to remain.

And the roots in the perennial kinds may be parted in autumn, or early in the ſpring, and planted out where they are to remain, when they will generally ſucceed very well.

Culture in the tender Shrubby Kinds.—Theſe are eaſily increaſed by cuttings of the young ſhoots; they ſhould be planted in pots in the ſpring, and plunged in a hot-bed, where they ſoon emit roots at bottom and ſhoots at top, and ſhould be gradually hardened to the full air: but cuttings planted in ſummer will often ſtrike without the aid of a hot-bed, when planted either in pots or in a bed of natural earth, under frames and lights, or covered cloſe with hand-glaſſes, and ſhaded from the mid-day ſun, being occaſionally watered. The young plants ſhould afterwards be potted off ſeparately, and managed as other ſhrubby exotics of the greenhouſe.

But the laſt ſort requires a warm dry greenhouſe in winter, and to be very ſparingly watered in the ſummer months. See GREENHOUSE *Plants*.

Of theſe different plants, ſome are uſeful as culinary herbs, others for the purpoſe of ornament in the borders, &c. and the tender ſorts in greenhouſe collections among others of ſimilar kinds.

SALVIA, in the *Materia Medica*. See SAGE.

SALVIAC, in *Geography*, a town of France, in the department of the Lot, and chief place of a canton, in the diſtrict of Gourdon; 6 miles S. of Gourdon. The place contains 2647, and the canton 11,606 inhabitants, on a territory of $152\frac{1}{2}$ kiliometres, in 9 communes.

SALVIANUS, in *Biography*, a celebrated preſbyter of Marſeilles, who flouriſhed in the fifth century, was probably born at Cologne, and is ſaid to have been deſcended from a family of rank, and enjoyed the advantages of a liberal education, by which he became thoroughly converſant with profane and ſacred literature. He married a lady who was not a Chriſtian, but who became, through his means, a convert to the religion which he eſpouſed. We firſt find him in a public capacity in the office of preſbyter at Marſeilles. According to Cave he began to flouriſh about the year 440, when he finiſhed one of his principal works, *viz.* "A Treatiſe concerning the Providence of God;" and from this time his reputation greatly increaſed, and became widely diffuſed. He was living in 495, and had at that period attained to a good old age. It was at this time that Gennadius wrote his account of him, obſerving, that he might well be called "a maſter of biſhops," ſince he wrote many homilies which were preached by biſhops not ſo well qualified to compoſe for themſelves. His works that remain are written with force and elegance, particularly when he is declaiming againſt the irregular manners of the times; ſo that he has had the title given to him of "the Jeremiah of the fifth century." The works of Salvianus that have come down to us conſiſt of "De Providentia et Gubernatione Dei, deque Juſto ac preſenti ejus Judicio, Lib. viii. ;" " Adverſus avaritiam præſertim Clericorum et Sacerdotum, Lib. iv." publiſhed under the title of Timothy, and " Epiſtolæ IX." Of his works that are loſt, an account will be found in Cave's Hiſt. vol. i.

SALVIATI, Francisco Rossi, called *Il Salviati*, from the favour and patronage of the cardinal Salviati, was the ſon of Michelangiolo Roſſi, and was born at Florence in 1510. He was firſt placed as a pupil under Andrea del Sarto, and afterwards with Baccio Bandinelli. The cultivation of his talents under theſe two able maſters enabled him to rival in fame the beſt artiſts, after the deceaſe of the great luminaries who had conducted painting ſo near to perfection ; and he is celebrated by his fellow pupil, Vaſari, as the greateſt painter then in Rome. The power which he exhibited was not ſuffered to lie unemployed. For the church of La Pace he painted the Annunciation, and Chriſt appearing to Peter ; and ſoon afterwards was engaged by his patron, the cardinal, to adorn his chapel with a ſeries of freſcoes, the ſubjects being taken from the life of St. John Baptiſt. He produced a ſet of cartoons of the hiſtory of Alexander, as patterns for tapeſtries ; and, in conjunction with Vaſari, ornamented the apartments of the Cancellaria with paintings in freſco.

From Rome he went to Venice, where he painted many pictures, both for public edifices and private collections, particularly the hiſtory of Pyſche for the Palazzo Grimaldi. He afterwards travelled through Lombardy, and made ſome ſtay at Mantua, ſtudying with much delight the works of Julio Romano. At Florence, he was employed by the grand-duke to adorn the Palazzo Vecchio : in one of the ſaloons he repreſented the victory and triumph of Furius Camillus, a work greatly admired for the truth and taſte of the imitation, and the vigour and ſpirit of the compoſition.

A reſtleſs habit, and a diſpoſition to rove, led Salviati to accept an invitation to France, made by the cardinal de Lorraine in the name of Francis I., then engaged in conſtructing and adorning his palace at Fontainebleau. He was received with diſtinction, and politely treated by F. Bimaticio, who had the ſuperintendance of the works ; but proud and turbulent, he ſoon became diſſatisfied, and returned theſe favours with unkindneſs and ingratitude. During his ſtay in France, he painted a fine picture for the church of the Celeſtines at Paris, of the Taking down from the Croſs. He ſoon after returned to Italy, and there fell into new diſputes with Daniel da Volterra and Pietro Ligorio ; and by continual agitation of mind brought on a fever, of which he died in 1563, at the age of 53.

Il Salviati poſſeſſed an invention fertile and well ſtored with materials, which he combined with care and originality ; introducing in his pictures magnificent deſign of architecture, and uniting in his execution celerity with correctneſs. His firſt character is that of a deſigner ; and indeed he was a complete example of the Roman ſchool, of which colouring by no means forms an agreeable feature, whilſt it had ſufficient to ſeparate and ſupport the forms. His unhappy diſpoſition, and his inclination to debaſe and vilify the works of others, cauſed him many enemies, and frequently led to the employment of leſs able artiſts, whoſe talents were conducted with a more engaging manner, and leſs captious temper.

SALVING Sheep, in *Rural Economy*, the dreſſing of them with tar and greaſe, againſt the ſcab and other diſeaſes. It is a practice which was formerly conſidered as indiſpenſable to the health and ſafety of ſheep, but which, in the ſouthern parts of the kingdom, according to the Survey of Northumberland, is not in uſe ; and in ſome of the leſs expoſed northern diſtricts it is wholly diſregarded ; even with ſome of the hill ſheep farmers, it is now ſaid to be laid aſide without any inconvenience being ſuſtained on the account. In reſpect to the material which is employed in this diſtrict, it is a mixture of 12lbs. of butter with four quarts of tar, well incorporated, by being put together while warm. This quantity is ſufficient for twenty-four ſheep. In Perthſhire, in the north of Scotland, according to Dr. Robinſon, the compoſition now in uſe is likewiſe tar and butter. Some take two Scotch pints of tar to a ſtone of butter ; others only five common pints of tar to that weight ; and others in various proportions between theſe extremes. This quantity ſuffices for ſalving fifty-five or ſixty ſheep, at the rate of three-pence or four-pence each, according as there is more or leſs tar in the mixture. Formerly ſhepherds uſed tobacco-juice and ſoap, and in ſome caſes chamber-ley ; but theſe are laid aſide as leſs efficacious. This ſort of buſineſs is, in ſome places, done in November. In Perthſhire the ſtore-maſters ſmear their lambs about the beginning of October, and if the weather be favourable they continue their work without intermiſſion, till all the ſheep they intend be ſmeared. In ſome places they ſmear only the weaker ſheep, in other places the whole. One man ſmears twenty or twenty-four in a day, leaving about an inch betwixt every ſhed of the wool. In regard to the benefit expected from this practice, it is, that it makes the ſheep hardier and warmer, that it cleans them from vermin and cutaneous diſtempers, and that it prevents their loſing the wool. They contend further, that the wool pays very nearly the whole expence ; the ſame number of fleeces of ſmeared and white wool bringing an equal ſum in the market, becauſe what the ſmeared wool wants in quality it has in weight ; and laſtly, it is urged, that the more butter there is in the compoſition, the grain of the wool is ſofter, and more ſilky ; that by the practice of ſmearing, the young ſheep are raiſed on the bone ; are preferred in the market ; and fetch a better price. Notwithſtanding all theſe arguments in favour of ſmearing, others condemn the practice totally. However, there is little doubt that it forms a cruſt about the animal's body, and contributes to defend it from the cold, and thus it may be proper in a ſtormy ſituation, while it is unneceſſary where there is plenty of ſhelter. See Sheep.

And in Argyleſhire, according to the Agricultural Report of that diſtrict, the curing or ſalving of the ſheep with tar and butter, in October, is a general practice ; but ſome ſmear them more than others, according to the difference of ſituations. All ſmear the lambs and tups, and ſome ſmear all except the old wedders. The purpoſe of it is to defend them from the cold, ſcab, and vermin, and to increaſe the quantity and mend the quality of the wool. Different people mix the ingredients in different proportions ; a quantity from three to four pounds (Engliſh) of butter, and one Scotch pint of tar, is conſidered as a proper allowance for nine or ten ſheep. The more butter and the leſs tar, the more the wool will be meliorated. But in the Roxburgh Agricultural Report, it is ſtated, that many allow only 2lbs. of butter to the pint of tar, or a ſtone of 24lbs. to the 12 pints, which is very hurtful to the wool. The moſt approved mixture is 3½lbs. (Engliſh) of butter to the Scotch pint of tar. The better the butter is the further the ſalve will go. The beſt is that which appears yellowiſh, and riſes when rubbed againſt a board with the finger, as this waſhes better out of the wool. It is found that two pints of butter-milk, added to ſix Scotch pints of tar, and its proportion of butter, will ſmear four ſheep more than the ſame quantity of tar and butter will do by themſelves. If the butter-milk be a week or two old, it is ſo much the better. It makes the tar and butter incorporate more cloſely, renders the ſalve firm, and draws much finer upon the thigh than without it. The ſalve thus prepared is fit for immediate uſe.

But Mr. Richardſon ſays, that there is reaſon to believe that a mixture of tobacco-liquor and ſpirits of turpentine with a little brimſtone, anſwers fully as well as tar and butter, for the great object of ſmearing, which is that of killing the vermin and preventing the ſcab. Something ſimilar to this is practiſed in the pariſh of Lochlee in Auguſt; the lambs are ſmeared in autumn with tobacco-juice. As tar is not eaſily procured, ſometimes it might be of conſequence to the farmer to know that ſuch things may be uſed as a ſubſtitute for butter; but the butter, when it can be got, is better.

However, though ſmearing or ſalving is thought here to be of abſolute neceſſity, it may perhaps be doubted whether it might not be diſpenſed with, or at leaſt done in an eaſier way. In Wales this practice is unknown, though the country is colder than this. And it has been given up in other diſtricts, as ſeen above. But the writer of the above report ſays, that the ſtore-maſters however ſpeak of its utility with confidence, founded, they ſay, upon experience. If this be well aſcertained, it would be improper to give up the practice. But even on the ſuppoſition that it ought to be continued, ſome think that the operation might be performed when the ſheep are ſhorn (which would be attended with much leſs expence and trouble), with butter or oil and a decoction of tobacco-juice, oak-bark, or broom, without any mixture of tar, ſo hurtful to the wool. This decoction would kill the vermin and their eggs, and the butter or oil would improve the wool, the natural and ſufficent clothing of the animal. If the practice cannot be given up now, it probably however may hereafter, when the breed is more naturalized to our climate.

It is obſerved, in the Statiſtical Account of Linton, in Scotland, that Columella and Celſus anciently preſcribed oil for improving the wool. And that a few years ago, a farmer in Selkirkſhire, being unſucceſsful in the competition for the premium granted for the beſt wool, ſmeared next ſeaſon with butter only, without tar, and eaſily gained the premium. This experienced farmer thinks tar of no uſe but to kill the vermin, which may be effected with other materials that will not hurt the wool.

The ſalving of ſheep is likewiſe practiſed in moſt of the counties in the north of England, and ſtill thought indiſpenſably neceſſary to the ſafety of the animals. In Lancaſhire the Rev. Mr. Stainbank, who is extremely correct, and has beſtowed much attention on the ſubject, thinks, that ſheep in that diſtrict would certainly become ſcabbed without it, as there is a ſcurf conſtantly forming upon the ſkin of the ſheep in the beginning of autumn. Mr. Wright, of Hornby caſtle, is of the ſame opinion, and the cuſtom is general over the whole county.

The beſt and moſt proper ſeaſon for performing the operation, in the idea of the farmer, is in the early autumn, about the beginning of November, as it ſuits the ewes, and the ſcurf then begins to form. The compoſition which he conſiders as the beſt, is formed from one gallon of common tar, ten pounds of the beſt butter, one pound of ſoft ſoap, and three gills of train oil, by liquefying them over a gentle fire, and then ſetting them by to cool. The expence of ſalving a ſheep in this way, with the labour, is about 8*d.* each, when of the common ſize. The ſheep are ſalved all over in narrow ſheds. The South Down and new Leiceſter ſheep, in Mr. Wright's practice, are ſalved with a compoſition prepared from ſixteen pounds of butter to four quarts of good tar, mixed by gently diſſolving the butter over a ſlow fire, and then pouring it on the tar, ſtirring them well together until the whole is nearly ſet. The ſalving is performed in the above manner, and is thought to greatly improve the wool and keep the ſheep more healthy.

SALVINI, ANTON-MARIA, in *Biography*, a learned Italian, was born of a noble family at Florence in 1654. He became profeſſor of Greek in his native city, and was a diſtinguiſhed member of the Della Cruſca, to the perfection of whoſe dictionary no one contributed ſo much. He paſſed his life in literary purſuits, and died in 1729, at the age of 76. During his life he was not much known as an author, but after his deceaſe a great number of works from his pen appeared, either in a ſeparate form, or inſerted among the writings of other learned men. He diſplayed great induſtry in tranſlations, and gave metrical verſions, compriſing the Iliad and Odyſſey of Homer; Heſiod; Theocritus; Anacreon; and many of the minor poets and epigrammatiſts: the Clouds and Plutus of Ariſtophanes; parts of Horace and Ovid; Perſeus; part of the Book of Job and the Lamentations; Boileau's "Art Poetique;" Addiſon's "Cato" and "Letters from Italy," and other pieces. He obtained the character of a very faithful tranſlator; and it is ſaid he has not omitted a ſingle epithet of Homer, hence he was obliged to introduce into the Tuſcan language a multitude of compound terms never before hazarded. There have been publiſhed of this author, "Sonnets and other original Poems;" "A hundred Academical Diſcourſes;" "A funeral Oration for Antonio Magliabecchi," and other works. He had a younger brother, a canon of Florence, who died at an advanced age in 1751, and who was alſo a diſtinguiſhed man of letters, and publiſhed a work, entitled "Faſti conſolari delle' Academia Fiorentina," alſo the Lives of Magalotti and Migliorucci.

SALVINIA, in *Botany*, was ſo named by Micheli, in compliment to Antonio Maria Salvini, a Florentine nobleman, profeſſor of Greek, much celebrated for the extent of his taſte and learning, but of whoſe botanical merits we are not informed.—Schreb. 753. Mich. Gen. 107. t. 58. (Marſilea; Guettard in Mem. de l'Acad. des Sciences for 1762, 543. t. 29.)—This is the *Marſilea natans* of Linnæus, Sp. Pl. 1562, a common plant in the ditches of Italy. We have not examined its parts of fructification, which Mr. Brown, Prodr. Nov. Holl. v. 1. 167, ſays require to undergo a ſcrutiny, though he does not doubt the genus being diſtinct from MARSILEA, ſee that article, as well as from the *Azolla* of himſelf and Lamarck. The herbage is hairy, floating, with oppoſite, ſtalked, two-ranked, ovate, or ſomewhat heart-ſhaped, entire, coriaceous *leaves*, of a fine green, each near an inch long. *Fruit* globular, in radical cluſters, under water. The *flowers* are ſaid to be monoecious, the males in the ſame cluſter with the females.

SALUM, in *Geography*, a river of Africa, which traverſes the country of Burſali, or Salum, and runs into the Atlantic, N. lat. 12° 45′.

SALUMBERGO, a town of Italy, in the Friuli; 13 miles W. of Udina.

SALUMKA, a town of Abaſcia; 15 miles W. of Iſgaur. N. lat. 43° 20′. E. long. 40° 6′.

SALVO, a town of Sweden, in the province of Waſa; 4 miles S. of Waſa.

SALVORA, a ſmall iſland in the Atlantic, near the coaſt of Spain. N. lat. 42° 29′. W. long. 9°.

SALVORI, PUNTA DI, a town of Iſtria; 3 miles N. of Umago.

SALURN, a town of the county of Tyrol, taken by the French in 1797; 10 miles N. of Trent.

SALUSANDRIA, in *Botany*, a name given by ſome authors to the nigella, called in Engliſh *gith*, or *fennel-flower*.

SALUTATION, the act or ceremony of ſaluting, greeting, or paying reſpect or reverence to any one.

Salutatio, among the Romans, was daily homage paid by clients and inferiors to their ſuperiors.

Among the great, *atrium* was the place appointed for this purpoſe; but among people of middling condition, the *veſtibulum* only. See each.

This practice of ſalutation was not confined to the city, but took place in the army likewiſe; it being uſual for the private ſoldiers to go very early in the morning to ſalute their centurion, who at their head proceeded to ſalute the tribune, and then the tribune with the reſt went and ſaluted the imperator, or commander-in-chief.

The women, too, had their crowds of ſaluters attending them every morning.

The manner of receiving thoſe who came to pay their reſpects, was to receive thoſe of the better ſort with a kiſs, and the poorer ſort had a ſmall entertainment given them, and were even feaſted by ſuch as wanted to be thought more liberal than ordinary.

There is a great variety in the forms of ſalutation: we ſalute God by adorations, prayers, &c.; kings by genuflexion, &c. In England, we ſalute one another by uncovering the head, inclining the body, &c. The orientals ſalute by uncovering their feet, laying their hands on their breaſt, &c. The pope makes no reverence to any mortal but the emperor of Germany, to whom he ſtoops a very little, when he admits him to kiſs his mouth.

It was believed by the ancients, that the ſtatue of Memnon, in a temple of Egypt, ſaluted the ſun every morning at his riſing: the cheat conſiſted in this, that the ſtatue being hollow, when the warmth of the morning began to rarify the including air, it was driven out through a narrow duct in the mouth; this made a gentle murmur, which the prieſts interpreted a ſalutation.

In the *Army*, the ſalute is performed by a diſcharge of artillery, or ſmall arms, or both; the men preſenting their arms. The colours likewiſe ſalute royal perſonages, and generals commanding in chief, which is done by lowering the point to an inch above the ground. In the field, when a regiment is to be reviewed by the king, or his general, the drums beat a march as he paſſes along the line, and the officers ſalute one after another, bowing their half pikes or ſwords to the ground, then recover, and take off their hats. The enſigns ſalute altogether by lowering their colours. When his majeſty, or any of the royal family are preſent, when the word of command, "to ſhoulder," is given, the officers recover their ſwords, and the enſigns raiſe their colours.

At *Sea*, this ceremony is variouſly performed, according to the circumſtances, rank, or ſituation of the parties. It conſiſts in firing a certain number of cannon, or volleys of ſmall arms, in ſtriking the colours or top-ſails, and in one or more general ſhouts of the whole ſhip's crew, mounted in the maſts or rigging for that purpoſe.

Ships always ſalute with an odd number of guns; galleys with an even one. A veſſel under the wind of another is always obliged to ſalute firſt.

To ſalute with muſquets, is to fire one, or two, or three volleys, which is a method of ſalutation that ſometimes precedes that of the cannon, and is chiefly uſed on occaſion of feaſts.

After the cannon, they ſometimes alſo ſalute or hail with the voice, that is, a joint ſhout of all the ſhip's company three times, which ſalutation alſo occaſionally obtains where they carry no guns, or do not care to diſcharge any.

Saluting with the flag, is performed two ways, either by holding it cloſe to the ſtaff, ſo as it cannot flutter; or by ſtriking it ſo as it cannot be ſeen at all, which is the moſt reſpectful ſalutation.

Saluting with the ſails, is performed by hovering the top-ſails half-way of the maſts. Only thoſe veſſels which carry no guns ſalute with the ſails.

When there are ſeveral ſhips of war together, the commander alone ſalutes.

Father Fournier has an expreſs treatiſe of ſea ſalutes and ſignals. See SIGNAL.

The principal regulations with regard to ſalutes in the royal navy are as follow.

When a flag officer ſalutes the admiral and commander-in-chief of the fleet, he is to give him fifteen guns; but when captains ſalute him, they are to give him ſeventeen guns. The admiral or commander-in-chief of the fleet is to return two guns leſs to flag-officers, and four leſs to captains. Flag-officers ſaluting their ſuperior or ſenior officer, are to give him thirteen guns. Flag-officers are to return an equal number of guns to flag-officers bearing their flags on the ſame maſt, and two guns leſs to the reſt, as alſo to captains.

When a captain ſalutes an admiral of the white or blue, he is to give him fifteen guns; but to vice and rear-admirals, thirteen guns. When a flag-officer is ſaluted by two or more of his majeſty's ſhips, he is not to return the ſalute till all have finiſhed, and then to do it with ſuch a reaſonable number of guns as he ſhall judge proper. In caſe of the meeting of two ſquadrons, the two chiefs only are to exchange ſalutes. And if ſingle ſhips meet a ſquadron conſiſting of more than one flag, the principal flag only is to be ſaluted. No ſalutes ſhall be repeated by the ſame ſhips, unleſs there has been a ſeparation for ſix months at leaſt.

None of his majeſty's ſhips of war, commanded only by captains, ſhall give or receive ſalutes from one another, in whatſoever part of the world they meet.

A flag-officer commanding in chief ſhall be ſaluted, upon his firſt hoiſting his flag, by all the ſhips preſent, with ſuch a number of guns as is allowed by the firſt, third, or fifth articles.

When any of his majeſty's ſhips ſhall meet with any ſhip or ſhips belonging to any foreign prince or ſtate within his majeſty's ſeas (which extend to Cape Finiſterre), it is expected that the ſaid foreign ſhips do ſtrike their top-ſail, and take in their flag, in acknowledgment of his majeſty's ſovereignty in thoſe ſeas: and if any ſhall refuſe or offer to reſiſt, it is enjoined to all flag-officers and commanders to uſe their utmoſt endeavours to compel them thereto, and not ſuffer any diſhonour to be done to his majeſty. And if any of his majeſty's ſubjects ſhall ſo much forget their duty, as to omit ſtriking their top-ſail in paſſing by his majeſty's ſhips, the name of the ſhip and maſter, and from whence, and whither bound, together with affidavits of the fact, are to be ſent up to the ſecretary of the admiralty, in order to their being proceeded againſt in the admiralty-court. And it is to be obſerved, that in his majeſty's ſeas, his majeſty's ſhips are in no wiſe to ſtrike to any; and that in other parts, no ſhip of his majeſty's is to ſtrike her flag or top-ſail to any foreigner, unleſs ſuch foreign ſhip ſhall have firſt ſtruck, or at the ſame time ſtrike her flag or top-ſail to his majeſty's ſhip.

The flag-officers and commanders of his majeſty's ſhips are to be careful to maintain his majeſty's honour upon all occaſions, giving protection to his ſubjects, and endeavouring what in them lies to ſecure and encourage them in their lawful commerce; and they are not to injure in any manner the ſubjects of his majeſty's friends and allies.

If a foreign admiral meets with any of his majeſty's ſhips, and ſalutes them, he ſhall receive gun for gun. If he be a vice-admiral, the admiral ſhall anſwer with two guns leſs. If a rear-admiral, the admiral and vice-admiral ſhall return two leſs. But if the ſhip be commanded by a captain only, the flag-officers ſhall give two guns leſs, and captains an equal number.

When any of his majeſty's ſhips come to an anchor in a foreign port or road, within cannon-ſhot of its forts, the captain may ſalute the place with ſuch a number of guns as has been cuſtomary, upon good aſſurance of having the like number returned, but not otherwiſe. But if the ſhip bears a flag, the flag-officer ſhall firſt carefully inform himſelf how flags of like rank, belonging to other crowned heads, have given or returned ſalutes, and to inſiſt upon the ſame terms of reſpect.

It is allowed to the commanders of his majeſty's ſhips in foreign parts, to ſalute the perſons of any admirals, commanders-in-chief, or captains of ſhips of war of foreign nations, and foreign noblemen or ſtrangers of quality, as alſo the factories of the king's ſubjects, coming on board to viſit the ſhip; and the number of guns is left to the commander, as ſhall be ſuitable to the occaſion, and the quality of the perſons viſiting; but he is nevertheleſs to remain accountable for any exceſſes in the abuſe of this liberty. If the ſhip viſited be in company with other ſhips of war, the captain is not to make uſe of the civilities allowed in the preceding article, but with leave and conſent of the commander-in-chief, or the ſenior captain.

Merchant ſhips, whether foreigners, or belonging to his majeſty's ſubjects, ſaluting the admiral of the fleet, ſhall be anſwered by ſix guns leſs; when they ſalute any other flag-ſhips they ſhall be anſwered by four guns leſs; and if they ſalute men of war commanded by captains, they ſhall be anſwered by two guns leſs. If ſeveral merchant ſhips ſalute in company, no return is to be made till all have finiſhed, and then by ſuch a number of guns as ſhall be thought proper; but though the merchant ſhips ſhould anſwer, there ſhall be no ſecond return.

None of his majeſty's ſhips of war ſhall ſalute any of his majeſty's forts or caſtles in Great Britain or Ireland, on any pretence whatſoever. Regulations and Inſtructions for the Sea Service.

SALUTATION, *Angelical*, is an addreſs, which the Romaniſts make to the Virgin, containing the formula in which the angel ſaluted her, when he acquainted her with the myſtery of the incarnation.

SALUTATO, LINO COLUCCIO PIERO, in *Biography*, one of the reſtorers of literature in Italy, was born in 1330, at the caſtle of Stignano, in Tuſcany. His father, a ſoldier and hero, having been exiled by the prevalent faction in his country, retired to Bologna on the invitation of its lord, whom he ſerved till his death. Coluccio received his education in that city, and by his father's command applied himſelf to the ſtudy of the law, which he quitted for the more pleaſing and elegant purſuits of rhetoric and poetry, as ſoon as he became his own maſter. In the year 1368, he was the colleague of Franceſco Bruni in the office of Apoſtolical ſecretary to pope Urban V. It is probable, that when this pontiff returned to France, Coluccio quitted the papal court and married. He had, however, previouſly to this, acquired ſo high a reputation for eloquence, that various ſtates and ſovereigns ſent him invitations to enter into their ſervice, but his attachment to his native country cauſed him to give a decided preference to the Florentine republic, of which he was, in 1375, made the chancellor, an office which he held many years: during this period he was engaged in almoſt every important tranſaction that had occurred in Italy. Such was his influence and the force of his eloquence, that Giangaleazzo, duke of Milan, was accuſtomed to ſay, that a ſingle letter of Coluccio did him more miſchief than a body of a thouſand Florentine horſe. In the midſt of his public occupations, he was attentive to the intereſts of literature, which few perſons of his time promoted with more aſſiduity. He died in 1406, in the 76th year of his age. On account of his great merit a public funeral was decreed to him, and on this occaſion the whole city ſpontaneouſly attended, and a garland of laurel was ſolemnly placed on his bier. Of his writings, which were numerous, none have been publiſhed, except a treatiſe "De Nobilitate Legum ac Medicinæ," a ſonnet, ſome Latin poems, and two collections of letters made by Metius and Rigacci. The letters contain many curious particulars of the literature and politics of the time. He wrote a treatiſe concerning the corruption of the manuſcripts of ancient authors, and the means of remedying it by the careful collation of different copies; and he himſelf collected 600 volumes, which was a vaſt library for the period, conſidering that the art of printing had not been then diſcovered. His own compoſitions, in proſe and verſe, obtained the higheſt eulogies from his contemporaries, who were diſpoſed to give him rank by the ſide of Cicero and Virgil, to which, by the way, he had no claim whatever. He was, nevertheleſs, a man of very extenſive erudition, and well acquainted with the literature then chiefly in eſteem. With the Greek language he was unacquainted, but his reputation as a poet cauſed the Florentines to obtain from the emperor the privilege of conferring on him the poetic laurel, but from cauſes not explained, this honour, as we have ſeen, was not beſtowed till after his death.

SALUTATORIUM, in *Nunneries*, a place where the nuns receive the ſalutation of thoſe that come to ſee them.

Salutatorium is alſo uſed for the veſtry, or place where the biſhop was dreſſed, and received the ſalutation of viſitants before divine ſervice.

SALUTE, an ancient name of a coin made by king Henry V. after his conqueſt in France, on which the arms of France and England were ſtamped and quartered.

SALUTIGERULI, among the Romans, were ſervants chiefly employed by the women in carrying ſalutations to one another.

SALUTIS ELIXIR. See ELIXIR *Salutis*.

SALUZZO, in *Geography*, a town of France, in the department of the Stura, late capital of a marquiſate in Piedmont; ſituated at the foot of the Maritime Alps, not far from the Po, and in ſight of mount Veſalius, which ſeparates the Maritime from the Cottian Alps. Its ſituation on a hill commands an extenſive proſpect, and renders the air ſalubrious. Its ancient palace was once the reſidence of the marquis of Saluzzo. It was elevated into a biſhopric by pope Julius II., and depends immediately on the ſee of Rome. Beſides the cathedral, Saluzzo contains two churches, and ſeveral religious houſes. The marquiſate was annexed to the duchy of Savoy in the beginning of the 17th century; 20 miles S.W. of Turin. N. lat. 44° 33′. E. long. 7° 29′.

SALUZZUOLO, a town of France, in the department of the Seſia; 18 miles W.N.W. of Vercelli.

SALWARP, a river of England, which runs into the Severn at Worceſter.

SALWATTI, one of the Papuan iſlands, in the Pacific ocean, near the N.W. coaſt of New Guinea, from which it is ſeparated by a narrow channel, called "Revenge-ſtrait." This iſland is of an oval form, approaching triangular, about 90 miles in circumference, populous, and governed by a raja, but ſubject to the controul of the Dutch. The people of this iſland and of the neighbouring one, called Wadjoo, reſemble thoſe of the main land of Papua, and are a ſingular race, of humble appearance and great ferocity. They live on fiſh, or turtle and ſago, the tree producing this nutritious article of diet abounding in Papua, but the ſubſtance is chiefly prepared by the people of Wadjoo. S. lat. 1° 6′. E. long. 131° 15′.

SALWEN, a town of Semigallia; 25 miles S.W. of Seelburg.

SALZ, Sulz, *Saltz*, or *Sultz*, a ſort of brine or pickle made of ſalt, diſſolved by the coldneſs or moiſture of a cellar.

Salz, in *Geography*, a river of Germany, which runs into the Werra, two miles S. of Salz Uffan, in the county of Lippe.

SALZA, a river of Baden, which runs into the Rhine, near Philipſburg.—Alſo, a river of Stiria, which runs into the Enns, near Reiffling.

Salza, *Great*, a town of the duchy of Magdeburg, to which belong two ſalt-ſprings and 34 ſalt-pans. The ſalt manufactured here, under the direction of a corporation conſiſting of the chief proprietors of the ſalt-works, and a reſident overſeer, is ſent by land-carriage to Froſe, on the Elbe, where it is ſhipped off for the ſalt offices at Dreſden, Meiſſen, and other places in the electorate of Saxony; 12 miles S. of Magdeburg. N. lat. 52°. E. long. 12°

Salza, *New*, a town of Saxony, in the margraviate of Meiſſen; 19 miles E. of Stolpen.

Salza, or *Salzach*, a river that riſes in the S. part of the archbiſhopric of Salzburg, on the borders of Tyrol, and paſſing by Hallein, Salzburg, &c. runs into the Inn, 5 miles N.N.E. from the laſt-named town.

SALZBURG, a city of Germany, and capital of the archbiſhopric of the ſame name, ſituated between three mountains, on the river Salza, which divides the city into two parts, that communicate by a bridge. This city is well fortified; the part to the right of the river being ſurrounded with eight baſtions, and that on the left ſide with three. The mountain-caſtle, ſituated in the former, is ſtrong, on account of its lofty ſituation and its works: this contains the principal arſenal. The ſtreets are narrow, and ill paved, but in other reſpects the city is well built. The archbiſhop's palace is ſpacious, magnificent, and commodious. Before it is a beautiful fountain, and oppoſite to it another noble palace, called the "Neuebau," in which the diet of the country is held, and in which are the meetings of the ſeveral colleges, and the archbiſhop's library. The biſhop's palace of Chiemſee, the chapter-houſe, and the apartments for the canons, are elegant buildings. The amphitheatre, cut out of a rock, in the W. part of the city, and 220 feet long, and alſo the ſtables on the ſide of the Monehberg, are entitled to particular notice. The cathedral of St. Rupert, conſecrated in 1628, is built of free-ſtone and marble; it has five organs, a number of embelliſhments, and a grand treaſury. The church of St. Peter is the oldeſt in the city, and near it is a monaſtery of Benedictine monks, in which is a fine library. The univerſity church, conſecrated in 1707, is alſo a noble building. The univerſity of Salzburg was founded by archbiſhop Paris in 1620. This city is conveniently ſituated for trade; 68 miles E.S.E. of Munich. N. lat. 47° 47′. E. long. 13°.

Salzburg is alſo an archbiſhopric and principality of Germany, in the circle of Bavaria, bounded on the N. by Upper Bavaria, on the E. by Auſtria and Stiria, on the S. by Carinthia and Tyrol, and on the W. by Upper Bavaria. Its greateſt extent from E. to W. is 100 miles, and 64 from N. to S. It is defended on all ſides by mountains and narrow paſſes, and conſiſts wholly of mountains and vallies. As no grain is ſown here, it derives all its ſupplies of corn from Bavaria; but its hay is of excellent quality, and affords ſubſiſtence for breeds of valuable cattle. Its horſes are highly extolled for beauty, hardineſs, and vigour. At Hallein, about two miles from the city of Salzburg, are ſalt-works, belonging to the ſovereign; in which rock-ſalt of various colours is converted into the fineſt ſalt, and in ſuch abundance, that the operations of the ſummer ſeaſon furniſh an ample ſupply not only for home conſumption, but for all foreign demands. This ſalt is exchanged in Bavaria by a compact between the princes for corn. Here are alſo conſiderable mines of gold, ſilver, copper, lead, iron, and lapis calaminaris; and a great quantity of ſteel and braſs is manufactured into ſwords, ſabres, bayonets, muſquets, cannon, and mortars. This archbiſhopric contains ſix cities, and 25 market-towns. The peaſants being univerſally allowed the uſe of arms are eaſily formed into a military body; and the country being by oppreſſion deprived of its nobility, their eſtates are now in the hands of the church. The only form of religion that is tolerated is the Roman Catholic; but Lutherans, notwithſtanding all the attempts of injudicious and intemperate zeal to extirpate them, are numerous. In the year 1732, they were perſecuted with ſuch violence, that they obtained leave from the diet to withdraw, and to take with them their effects: of this indulgence about 30,000 perſons availed themſelves, and removed to the other Proteſtant countries of Germany and Pruſſia, and even to the Engliſh colonies in America. The favourable treatment which they received encouraged ſubſequent emigrations. After the extinction of the archbiſhopric of Magdeburg, the archbiſhops of Salzburg became primates of Germany without any competition. The lands belonging to this archbiſhopric are of great value; and its annual revenues ariſing from the lands have been eſtimated at no leſs than between three and four millions of guilders. Its military force conſiſts only of one regiment of foot, containing 1000 men, beſides 50 halberders, and as many trabants or horſe-guards, maintained for ſupporting the dignity and ſplendour of the court. By an article of the treaty of Campo Formio, the French republic engaged its intereſt to obtain this archbiſhopric for the emperor; and by the peace of Luneville in 1802, it was ſecularized and transferred to the archduke, who had reſigned the duchy of Tuſcany. At the peace of Preſburg it was annexed to Auſtria, and Wurzburg given to the archduke.

SALZDALEM, a town of Weſtphalia, in the principality of Wolfenbuttle, deriving its name from a ſalt-work in its vicinity, diſcovered in the 13th century. At preſent it owes its chief diſtinction to the ſplendid and beautiful ſeat, built here by duke Anthony Ulrich; 4 miles N.E. of Wolfenbuttle.

SALZ-DELFURT, a town of Weſtphalia, in the biſhopric of Hildeſheim; 8 miles S.E. of Hildeſheim.

SALZ-DER-HELDEN, a town of Weſtphalia, in the principality of Grubenhagen, on the Leine, with a ſalt-work; 2 miles S. of Einbeck.

SALZ-HOMENDORF, or Salzemmendorf, a town of Weſtphalia, in the principality of Calenberg, containing three ſalt-ſprings, and twelve boiling-houſes, three belonging to the ſovereign, and nine to the company. The town is ſubject to its own magiſtracy, and it obtained other rights and privileges by grant of king George II. in the year 1732; 19 miles W.S.W. of Hildeſheim.

SALZKOTTEN, or Soltkott, a town of Weſtphalia, in the biſhopric of Paderborn, which owes its name to the ſalt-ſprings found here; 6 miles S.W. of Paderborn. N. lat. 51° 36′. E. long. 81° 22′.

SALZLIEBENHALL, or Salzgitter, a town of Weſtphalia, in the biſhopric of Hildeſheim, near which are ſalt-ſprings belonging to the duke of Brunſwick; 11 miles N. of Goſlar.

SALZOLA, a town of Naples, in Capitanata; 6 miles E.S.E. of Aſcoli.

SALZUNGEN, a town of Germany, in the county of Henneberg, on the Werra, celebrated for its ſalt-ſprings; 7 miles N.W. of Schmalkalden.

SALZ-USTEN, a town of Weſtphalia, in the county of Lippe, on the Salz, deriving its name from a rich ſalt-ſpring; 11 miles N. of Detmold.

SALZWEDEL, or Saltwedel, a town of Brandenburg, in the Old Mark, ſituated on the Jetze, in a marſhy ſoil, and divided into the Old and New Towns by a branch of the Jetze, each of which has its ſeparate churches and magiſtracy. It was formerly one of the Hanſe towns. The principal trade of the inhabitants conſiſts in brewing beer, and manufactures of cloth, ſerge, ſtockings, &c. 26 miles N.W. of Stendel. N. lat. 52° 40′. E. long. 11° 20′.

Salzwedel, *Old*, a town in the Old Mark of Brandenburg; 5 miles S. of Salzwedel.

SAM, in *Rural Economy*, a term uſed provincially to curdle milk for cheeſe, or ſet the curd. See Dairying.

Sam-*Ground*, a term applied to coarſe-ground oats or barley uſed for fattening different ſorts of live-ſtock, as neat cattle and hogs, as well as for the feeding of horſes in ſome caſes. It is much uſed in the northern diſtricts. The meal of this coarſe-ground grain is never ſifted, but the whole is eaten together by the animals. In this way it is found to anſwer better than when paſſed through the ſieve for different purpoſes.

SAMA, in *Geography*, a town of Hindooſtan, in Mewat; 12 miles E.S.E. of Cotputly.—Alſo, a town of Spain, in the province of Aſturias; 7 miles W. of Oviedo.

Sama, or *Schama*, a town of Africa, in the diſtrict of Antæ, on the Gold Coaſt, where the Dutch have a fort.

Sama, or *St. John*, a river of Africa, worſhipped as a divinity by the natives; after traverſing the Gold Coaſt, it diſcharges itſelf into the Atlantic, N. lat. 4° 51′. E. long. 1° 35′.

SAMAAB Kurb, an iſland in the Red ſea. N. lat. 28° 15′.

SAMACHINA, a town of Ruſſia, in the government of Irkutſk; 60 miles N.W. of Ilimſk.

SAMACHON, or Amacon, *Lake of*, in *Ancient Geography*, a lake of Paleſtine, near the city of Dan, and the ſpring-head of the Jordan, which runs quite through it, being about 100 furlongs N. of the ſea of Tiberias or of Galilee. According to Pococke it is now no more than four miles at its greateſt breadth, and in other places not above two. It is ſuppoſed to have derived its name from the thickneſs of its water. Joſephus ſays, that the whole adjacent territory was full of marſhes; and that the city of Hazor, where reigned Sabin, one of the kings of Canaan, was ſeated upon it, as that of Seleucia hath ſince been.

SAMADANG, in *Geography*, a town of the iſland of Java, ſeated on a river, in the interior part of the iſland; 160 miles S.E. of Batavia.

SAMADAVA, a town of the Arabian Irak, on the Euphrates; 115 miles S. of Bagdad.

SAMADERA, in *Botany*, a barbarous name, Gærtn. v. 2. 352. t. 156. See Vitmannia.

SAMADET, in *Geography*, a town of France, in the department of the Landes; 15 miles S. of Mont de Marſan.

SAMADJE, or Samagi, a town of Perſia, in the province of Irak; 60 miles E.N.E. of Gnerden.

SAMAGALOVA, a town of Ruſſia, in the government of Tobolſk, on the Tera; 60 miles N. of Kreinſk.

SAMAK, an iſland in the S.W. part of the gulf of Perſia, about 11 leagues in circumference. N. lat. 26° 40′. E. long. 48° 35′.

SAMALOUT, a town of Egypt, on the W. ſide of the Nile; 14 miles S. of Abu Girgé.

SAMALUM, in *Botany*, a name by which Pliny and ſome other authors have called the *pulſatilla*, or paſque-flower.

SAMANA, in *Geography*, an iſland near the E. coaſt of Hiſpaniola, 33 miles long, and from ſeven to nine broad; ſeparated from it by a channel, called Samana bay. N. lat. 19° 13′. W. long. 69° 12′.

Samana, or *Crooked Iſland*, one of the Bahama iſlands. N. lat. 22° 50′. W. long. 74° 4′.

SAMANAH, or Semanah, a town of Hindooſtan, in the ſubah of Delhi; 85 coſſes W. of Delhi, and 42 miles S. of Sirhund. N. lat. 30° 1′. E. long. 75° 58′.

SAMANAP, a town on the S.E. coaſt of the iſland of Madura. S. lat. 7° 2′. E. long. 113° 58′.

SAMANDRAKI. See Samotraki.

SAMANEANS, in *Antiquity*, a kind of magi, or philoſophers, erroneouſly confounded by ſome with the Brahmins, or Brachmans, who, proceeding from Ariana, a province of Perſia, and the neighbouring countries, ſpread themſelves in India, and taught new doctrines. According to ſome writers, the Brahmins, before their arrival, were in the higheſt period of their glory; they were the only oracles of India, and their principal reſidence was on the banks of the Ganges, and in the adjacent mountains; while the Samaneans were ſettled towards the Indus. Others ſay, that the Brahmins derived all their knowledge from the Samaneans, before whoſe arrival it would be difficult to prove that the Brahmins were the religious teachers of the Indians. The moſt celebrated and ancient of the Samanean doctors was Boutta, or Budda, who was born 683 years before Chriſt. His diſciples honoured him as a god; and his doctrine, which conſiſted chiefly in the tranſmigration of ſouls, and in the worſhip of cows, was adopted not only in India, but alſo in Japan, China, Siam, and Tartary. It was propagated, according to M. de Sainte Croix, in Thibet, in the eighth century, and ſucceeded there the ancient religion of Zamolxis. The Samaneans, or Buddiſts, were entirely deſtroyed in India by the jealous rage of the Brahmins, whoſe abſurd practices and fables they affected to treat with contempt; but ſeveral of their books are ſtill reſpectably preſerved on the coaſts of Malabar; and, moreover, we are told, that ſeveral of the Brahmin orders have adopted their manner of living, and openly profeſs the greateſt part of their doctrines. L'Ezour Vedam, ou Ancien Comment. du Vedam, publiſhed by M. de S. Croix, Paris, 1779. See BRACHMANS, and SCHAMANS.

SAMAR, or SAMAL, in *Geography*, one of the Philippine iſlands, 120 leagues in circumference, ſeparated by a narrow ſea from the S.E. extremity of the iſland of Luçon. The ſoil of this iſland is extremely fertile, of eaſy cultivation, and recompenſes the induſtry of the agriculturiſt at leaſt forty-fold; rice, which, beſides other grain, the Indians ſow in great abundance, is wholly appropriated for the uſe of the parochial clergy, the ſettlement of Manilla, and the governor of the province. The common food of the natives conſiſts of a ſpecies of potatoe, yams, and a root named "gaby." Pork is likewiſe part of their ſupply; and from the ſap of the cocoa, nipe, and cabonegro-trees, they obtain materials for an excellent ſpecies of brandy. The laſt of theſe owes its name to the black colour of its fibres, which are manufactured into cables, and different kinds of cordage. The ſubſtance of the cocoa-nut is alſo another article of Indian food. The only inſtrument uſed by the Indians, for the purpoſes both of induſtry and war, is a cris, or campilan. Sugar-canes, cabbages, garlic, onions, melons, Chineſe-oranges, lemons, vegetables, and ſeveral other kinds of fruit, little known in Europe, are cultivated on this iſland. Bees are alſo objects of particular attention. The woods of Samar ſwarm with birds of almoſt every deſcription, particularly the common fowl; and alſo afford, in great plenty, large monkies, roe-bucks, wild buffaloes, and other quadrupeds. From the folds of the root of the tall ſpecies of the fig-bannan, the natives manufacture a ſpecies of linen, which is rendered ſmooth and pliable by a preparation of lime; and the ſame ſubſtance is uſeful for the purpoſes of cordage. The bamboo, which ſhades the rivers, and the nipe and roulan, low ſhrubs with which the woods ſupply them, and which anſwer all the purpoſes of nails, ſerve for the conſtruction of their habitable huts. The inhabitants are ſaid to be diſtinguiſhed by their innocent and gentle manners: the deportment of the men is eaſy, open and affable; and the women are gay and lively. Without much propenſity to labour, they are addicted to vanity and lying, the only immoralities which M. De Pages obſerved among them. The common ſalute between the ſexes, and of affection among relations, is here preceded by a gentle aſperſion of incenſe on that part of the face to which the lips are applied. With the campilan already mentioned, and which is the only edged tool in uſe among the Indians of Samar, they are dextrous in the manufacture of the violin and guitar, and alſo in the conſtruction of canvas. To muſic and the mechanic arts they ſeem to be peculiarly inclined. The mat is one of the moſt curious productions of art, which they manufacture of extraordinary fineneſs, and ornament with deſigns and elegant colours, extracted from different trees. Silk, cotton, and the fibres of the fig-bannan, furniſh the Indian with the raw materials for his beſt manufactures in cloth; he makes a kind of lace, and embroiders his ſilk ſtuffs with ſurpriſing elegance and addreſs. Every family is provided with a loom for domeſtic purpoſes. The natives have a cuſtom, implied in the word "maſſarer," of cracking the joints, and rubbing the fleſh all over the body, which, as they conceive, tends to promote the free circulation of the blood, and obviate humours. They alſo rub the limbs of children with oil; and inſtead of cupping, they uſe ſevere pinchings on the neck and ſhoulders, which they continue to exerciſe until they have attained their end. They let blood by inciſions made in the ſkin; and as to phyſic, they are acquainted with the virtues of many flowers, balms, and plants, the uſe of which they owe to nature and their own experience. Their dreſs is formed of large trowſers, covered with a ſhirt deſcending to the middle of the thigh, and a handkerchief twiſted round the head like a turban; and on occaſions of ceremony they appear with a round hat, and banyan or bedgown, conſiſting of ſilk and cotton. The women wear an apron, which, after paſſing ſeveral times round the waiſt, falls down to the toe, and ſome uſe a petticoat ſo fine and tranſparent, that modeſty obliges them to tuck up a corner of it to the fore-part of the girdle, by which one leg is completely expoſed; their ſhift deſcends only to the top of the hip; and the head-dreſs reſembles that of the men, excepting only that they roll their hair high upon the head, ſo as to appear like a crown. On extraordinary occaſions they wear a gown. The hair of both ſexes is remarkably fine, particularly that of the women; they comb it with great care, and anoint it frequently with oil of the cocoa-nut in order to render it of a deep black. The noſe is ſhort and depreſſed; but the writer whoſe account we are citing, did not obſerve one ugly or ill-favoured woman on theſe iſlands; the features are ſmall, and not always regular; but they have beautiful eyes, and faces uncommonly expreſſive and intereſting. The natives of Samar have plenty and variety of fiſh from their rivers, as well as the ſea-coaſt, the latter of which ſupplies them with very elegant pearls. The iron-tree, ebony, and dyeing wood grow in every part of the iſland; and gold-duſt is found in ſome quantities in its more interior regions; but the monks have taken care, from reſpect to the morals of the people, to take this dangerous branch of traffic into their own hands. The natives, and eſpecially thoſe who reſide near the coaſt, were formerly Mahometans; but the miſſionary Jeſuits have converted them to the religion and allegiance of Spain. De Pages' Travels, vol. i. Eng. ed. N. lat. 11° 15′ to 12° 45′. E. long. 124° 15′ to 125° 52′.

SAMARA, in *Botany*, a Linnæan name, apparently borrowed from *Samara*, the fruit of an Elm; but we do not perceive the motive for its application to the genus which now bears it.—Linn. Mant. 144. Schreb. 80. Willd. Sp. Pl. v. 1. 665. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 1. 263. Juſſ. 379. (Rapanea; Aubl. Guian. v. 1. 121. Juſſ. 288. Lamarck Illuſtr. t. 122.)—Claſs and order, *Tetrandria Monogynia*. Nat. Ord. *Dumoſæ*, Linn. *Rhamni*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, minute, in four deep acute ſegments, permanent. *Cor.* Petals four, ovate, ſeſſile, with a longitudinal furrow in their lower part. *Stam.* Filaments four, awl-ſhaped, long, oppoſite to the petals, and ſunk in the furrow of each; anthers nearly heart-ſhaped. *Piſt.* Germen ſuperior, ovate, half the length of the corolla, ending in a cylindrical *ſtyle*, exceeding its own length; ſtigma funnel-ſhaped. *Peric.* Drupa roundiſh. *Seed* ſolitary.

Eſſ. Ch. Calyx in four deep ſegments. Petals four. Stamens embraced by the baſe of each petal. Stigma funnel-ſhaped. Drupa with one ſeed.

1. S. *læta*. Bright Samara. Linn. Mant. 199. Willd. n. 1; excluding Burmann's ſynonym.—Leaves obovate, obtuſe. Flower-ſtalks longer than the flowers.—Native of the Eaſt Indies, and of China. A *ſhrub*, or *tree*, with many ſmooth purpliſh *branches*. *Leaves* alternate, ſtalked, entire, ſmooth, an inch or inch and half long; paler beneath. *Flowers* ſmall, yellowiſh, many together in axillary tufts, which are ſhorter than the footſtalks. Burmann's ſynonym belongs to a ſpecies of *Memecylon*. His figure, copied in Lamarck's *Illuſtr.* t. 74, has the ſtamens alternate with the petals.

2. S. *coriacea.* Coriaceous Samara. Swartz Ind. Occ. v. 1. 261. Willd. n. 2.—Leaves elliptic-lanceolate, acute. Flowers nearly ſeſſile.—Native of woods, on the mountains of the ſouthern part of Jamaica. *Swartz.* A *tree*, whoſe *trunk* is twenty or thirty feet high; the *branches* erect, alternate, angular and ſmooth. *Leaves* longer and narrower than in the former, acute at each end. *Flowers* in ſmall lateral tufts, with very ſhort ſtalks. *Fruit* the ſize of a pepper-corn. Swartz ſays ſome individual trees bear male *flowers* only.

3. S. *pentandra.* Pentandrous Samara. Ait. n. 1. Willd. n. 3.—Leaves elliptic-obovate, bluntiſh; veiny beneath. Flowers five-cleft, with five ſtamens.—Native of the Cape of Good Hope. Introduced at Kew about the year 1770. A greenhouſe *ſhrub*, flowering in winter. The *leaves* are three inches long, coriaceous, rather glaucous, with many tranſverſe veins. *Flowers* much larger than either of the preceding, on ſhort, thick, tufted ſtalks.

4. S. *floribunda.* Many-flowered Samara. Willd. n. 4. (Rapanea guianenſis; Aubl. Guian. v. 1. 121. t. 46.)—Leaves obovate; not perceptibly veined beneath. Flowers five-cleft, with five ſtamens. — Gathered by Aublet, in thickets about the ſavannas of Cayenne and Guiana, bearing flowers, as well as fruit, in December. A *ſhrub*, five or ſix feet high. *Leaves* larger, broader, and more fleſhy, than in the laſt, on broad thick footſtalks; their upper ſide ſhining, finely veined; lower opaque, without veins, the midrib rather leſs prominent than in our third ſpecies, with which Swartz ſeems to have confounded the preſent. The *flowers* are very copious, white, in lateral tufts, on ſhortiſh ſtalks. *Fruit* violet-coloured, of one cell, but, according to Aublet, containing five or ſix *ſeeds*, ſo that we preſume the character of *Samara* requires amendment; or elſe that *Rapanea* of Aublet is a diſtinct genus.

SAMARA, in *Botany*, and *Vegetable Phyſiology*, is, according to Pliny, the proper appellation of the fruit of the Elm; ſee his Natural Hiſtory, book 16, chap. 17. Gærtner therefore uſes this term for a compreſſed, ſomewhat membranous, capſule, of one or two cells, never ſpontaneouſly burſting, and dilated at the ſides or extremity into a leafy form. The word is liable to the ſame exception as *Cotyledon*, being uſed for a generic name.

SAMARA, in *Ancient Geography*, a river of Gaul, now the *Somme*, which ſee.

SAMARA, in *Geography*, a river of Ruſſia, which riſes near fort Perevolotſkaia, and runs into the Volga, near Samara, in the government of Simbirſk.—Alſo, a town of Ruſſia, in the government of Upha, at the union of the rivers Salmiſch and Sakmara; 12 miles N. of Orenburg. N. lat. 53°. E. long. 55° 4'.—Alſo, a town of Ruſſia, in the government of Simbirſk, near the Volga, ſituated on a plain, furniſhed with a ditch and paliſades, and wooden towers mounted with cannon for defending it againſt the Tartars; 76 miles S.S.E. from Simbirſk. N. lat. 53° 20'. E. long. 49° 26'.—Alſo, a ſmall river of Ruſſia, which runs into the Volgivod, eight miles from New Moſcow, in the government of Ekaterinoſlav.

SAMARA, a town of the pachalic of Bagdad, near which are two forts, called Aſhouk and Muſhouk (the lover and beloved) about 30 miles from Degel, or the ancient Apamea. This place became conſiderable in the ninth century, as the reſidence of ſeveral caliphs of the houſe of Abbas. About 400 houſes are the only remains.

SAMARABRIÆ, in *Ancient Geography*, a people of India, on the other ſide of the Indus. Pliny.

SAMARAIN, or SERMIN, in *Geography*, a town of Syria, in the pachalic of Aleppo; 25 miles S.S.W. of Aleppo.

SAMARAMDA, in *Ancient Geography*, a town of India, beyond the Ganges. Ptolemy.

SAMARANG, in *Geography*, a town on the N. coaſt of the iſland of Java, and on the E. ſide of a river of the ſame name, which takes its riſe about three Dutch miles inland, and falls into the ſea about 200 roods below the place, being at its mouth not more than thirty or forty feet broad. Before the mouth of this river lies a bank, which is in ſome places compoſed of ſoft mud, and in others of hard ſand: at low water there is ſcarcely more than one foot of water upon it. The tide riſes here, as well as all along the coaſt of Java, only once in twenty-four hours. The ſhoalneſs of the coaſt makes the road of Samarang very inconvenient, both on account of the great diſtance at which large ſhips are obliged to lie from the ſhore, and of the landing, which is in a river that cannot be entered before the half-flood. Samarang is a fortified town, ſurrounded by a wall and a ditch; it has a very good hoſpital, and a public ſchool, chiefly for teaching the mathematics, and likewiſe a theatre. Its fortifications, however, are very bad; the walls that ſurround it being low and ruinous. It has a ſmall and neat church, and a temple of the Chineſe, which is a moderately large building, with two courts before it; decorated within with the gigantic images of their gods, ſtrongly gilt, and exhibiting a ſplendid appearance. The warehouſes and workſhops ſtand in a row under one roof, covering a piazza before them, 300 feet in length. It has a guard-houſe, and a government-houſe, formerly the reſidence of the governor, and three canpons or ſuburbs, the Chineſe, the Javaneſe, and the Bougineſe. Its garriſon, when complete, amounts to 150 men, beſides an independent company of dragoons, under the command of a captain-lieutenant. Samarang is the ſeat of the government of Java's N. E. coaſt; to which belong all the factories, commonly called reſidencies, which the Dutch company poſſeſs from Oelopampang, as far as the province of Cheribon. The ſea-coaſts belonging to the government of Samarang extend from Oelopampang to Tagal, 100 German miles in length, and its breadth inland is different in different parts. It is divided into nine reſidencies, *viz.* Oelopampang, Sourabaya, Griſſee, Samanap on the iſland of Madura, Rembang, Joana, Japera, Samarang, the chief produce of which diſtrict is rice and cotton-yarn, Pacalonga, and Tagal. Samarang lies about 230 miles E. of Batavia. The governor of Java's N. E. coaſt has a very lucrative office; it is eſtimated to yield from 80,000 to 100,000 rixdollars, or nearly 20,000*l.* ſterling, which revenue chiefly ariſes from the trade which he is enabled to carry on. In 1778, the following goods brought from Java's N.E. coaſt were ſold in Holland, *viz.* 20,000 lbs. of indigo, at 11*s.* ſterling *per* pound, which coſt the company 2*s.* 9*d.*; 50,000 lbs. of turmeric, and 65,000 lbs. of cotton-yarn. On the other hand, this colony takes a large quantity of opium (to the amount of about 136,000*l.* ſterling annually), ſilk clothes, India piece-goods, and European manufactures. In 1779, the balance in favour of the company was about 14,000*l.* ſterling. S. lat. 6° 57'. E. long. 110° 39'. Stavorinus's Voyage, vol. ii.

SAMARCAND, a celebrated city of Aſia, in Independent Tartary, the capital of a province in Great Bucharia, called Mawaralaadr, or Samarcand; ſituated in a delightful clime, on a little river named Sogd. It is ſuppoſed to be the Marakanda of the ancients. In the time of Alexander it was twelve leagues in circuit, incloſed by a wall, with twelve iron gates, at the diſtance of a league from each other,

other, and at every interval of two leagues was a fort capable of containing a body of troops: the walls were ſtrengthened by battlements and towers, and encompaſſed by a deep ditch, through which paſſed an aqueduct, that conveyed water to the city from the ſmall mountain-ſtream called Sogd, ſupplying every large ſtreet with a canal of water, and every houſe with a fountain, as well as water for its garden. It was in this place that Alexander is ſaid to have murdered Clitus, and married Roxana. In the year 1220, this city was taken and plundered by Jenghis Khan. At preſent it is the reſidence of a Tartar prince, and carries on a great trade with Perſia, Hindooſtan, Chineſe Tartary, &c. Although leſs ſpacious and magnificent than formerly, and much declined ſince the time of Timour, it is ſtill large and populous, fortified with ſtrong bulwarks of earth, containing many fine buildings, conſtructed of ſtone from quarries near this place, and furniſhing various kinds of excellent fruit, ſuch as pears, apples, melons, grapes, and in ſuch plenty, as to ſupply Hindooſtan, and great part of Perſia. The ſilk-paper that is manufactured here is the moſt beautiful in Aſia, and much valued through the Eaſt. This manufacture is ſaid to have been known A.D. 650. The province of Samarcand Mahwerlaadr, or *Mawar-ul-nera* (which ſee), is ſituated E. of Bucharia, and extends to the borders of Caſhgur, being being about 500 miles long from E. to W. and 450 from N. to S. It was formerly full of flouriſhing cities, moſt of which are now fallen into decay. Samarcand is ſituated, according to the obſervations of Ulugh Beig, in N. lat. 39° 37′ 23″, and, according to the ſtatement of major Rennell, in E. long. 64° 15′.

SAMARIA, in *Ancient Geography*, a country and town of Judea. The town was ſituated on mount Sameron, called alſo Samaria, and was the reſidence of all the kings of Iſrael from Omri, its founder, until the overthrow of this kingdom. All of them contributed to aggrandize and adorn it, till it became the largeſt and ſtrongeſt town of the kingdom of Samaria, *i. e.* of the ten tribes of which it was the capital. It ſuſtained ſeveral ſieges againſt Benhadad, king of Syria, but that which it reſiſted againſt Salmanazar, king of Aſſyria, laſted three years, after which he took it, and utterly deſtroyed the kingdom. (2 Kings, ch. xvii.) The country of Samaria comprehended the tribes of Ephraim and of Manaſſeh, on this ſide of Jordan, and its inhabitants were called *Samaritans*. (See the article.) Joſephus, in his "Antiquities," ſays, that Samaria was captured by Hyrcanus, ſon of Simon, one of the Maccabees, who pillaged it, razed its foundations, and cauſed torrents to overflow its ruins; but Aulus Gabinius, proconſul of Syria, began to re-eſtabliſh it, and Herod the Great completed the work, reſtored its ancient luſtre, built here a temple, and called it "Sebaſte," in honour of Auguſtus. (See SEBASTE.) The city of Samaria is ſeldom mentioned in the N.T. otherwiſe than in connection with the country of which it was the capital. (See Luke, xvii. 11. John, iv. 4. It is mentioned in Acts, viii. 1, 2, 3.) Samaria is never called Sebaſte in the N. T. though ſtrangers hardly know it by any other name. St. Jerom ſuggeſts that Obadiah was buried at Samaria. Here were alſo ſhewn the tombs of Eliſha, and of St. John the Baptiſt. There are many ancient medals ſtruck at Sebaſte or Samaria: and ſome biſhops of this city ſubſcribed to the acts of ancient councils.

SAMARIANA, a town of Aſia, in Hyrcania, according to Strabo.

SAMARIEN, in *Geography*, a town of Auſtria; 6 miles W. of Horn.

SAMARITANS, an ancient ſect among the Jews; ſtill ſubſiſting in ſome parts of the Levant, under the ſame name.

Its origin was in the time of Rehoboam; under whoſe reign, a diviſion was made of the people of Iſrael into two diſtinct kingdoms. One of theſe kingdoms, called Judah, conſiſted of ſuch as adhered to Rehoboam, and the houſe of David; the other retained the ancient name of Iſraelites, under the command of Jeroboam. The capital of the ſtate of theſe latter was Samaria; and hence it was that they were denominated Samaritans.

Some affirm that Salmanazar, king of Aſſyria, having conquered Samaria, led the whole people captive into the remoteſt parts of his empire: and filled their places with colonies of Babylonians, Cutheans, and other idolaters. Theſe finding themſelves daily deſtroyed by wild beaſts, it is ſaid, deſired an Iſraelitiſh prieſt to inſtruct them in the ancient laws and cuſtoms of the land they inhabited. This was granted them; and they thenceforth ceaſed to be incommoded with any beaſts. However, with the law of Moſes, they ſtill retained ſomewhat of their ancient idolatry. The rabbins ſay, they adored the figure of a dove on mount Gerizim. As the revolted tribes had no more of the ſcriptures than the five books of Moſes, ſo the prieſt could bring no others with him beſides thoſe books written in the old Phœnician letters, which, upon the return of the Jews, Ezra changed for the Chaldee, which we now call the Hebrew letters.

Upon the return of the Jews from the Babyloniſh captivity, and the rebuilding of Jeruſalem and the temple, the religion of the Samaritans received another alteration on the following occaſion. One of the ſons of Jehoiada, the high-prieſt, whom Joſephus calls Manaſſeh, married the daughter of Sanballat the Horonite; but the law of God having forbidden the intermarriages of the Iſraelites with any other nation, Nehemiah ſet himſelf to reform this corruption, which had ſpread into many Jewiſh families, and obliged all that had taken ſtrange wives immediately to part with them. (Nehem. xiii. 23—30.) Manaſſeh, unwilling to ſurrender his wife, fled to Samaria; and many others in the ſame circumſtances, and with ſimilar diſpoſition, went and ſettled under the protection of Sanballat, governor of Samaria. Manaſſeh brought with him ſome other apoſtate prieſts, with many other Jews, who diſliked the regulations made by Nehemiah at Jeruſalem; and now the Samaritans, having obtained an high-prieſt, and other prieſts of the deſcendants from Aaron, were ſoon brought off from the worſhip of the falſe gods, who were as much enemies to idolatry as the beſt of the Jews. However, Manaſſeh gave them no other ſcriptures beſides the Pentateuch, leſt, if they had the other ſcriptures, they ſhould then find that Jeruſalem was the only place where they ſhould offer their ſacrifices. From that time the worſhip of the Samaritans came much nearer to that of the Jews, and they afterwards obtained leave of Alexander the Great to build a temple on mount Gerizim, near the city of Samaria, in imitation of the temple at Jeruſalem, where they practiſed the ſame forms of worſhip.

To this mountain and temple the Samaritan woman of Sychar refers in her diſcourſe with our Saviour, John, iv. 20. The Samaritans ſoon after revolted from Alexander, who drove them out of Samaria, introduced Macedonians in their room, and gave the province of Samaria to the Jews. This circumſtance contributed in no ſmall degree to increaſe the hatred and animoſity between thoſe two people. When any Iſraelite deſerved puniſhment on account of the violation of ſome important point of the law, he preſently took refuge in Samaria or Schechem, and embraced the worſhip at the temple of Gerizim. When the affairs of the Jews were proſperous, the Samaritans did not fail to call themſelves Hebrews, and of the race of Abraham. But when the Jews ſuffered perſecution, the Samaritans diſowned them, and alleged that they were Phœnicians originally, or deſcended from Joſeph, or Manaſſeh his ſon. This was their practice in the time of Antiochus Epiphanes.

Notwithſtanding the charge above-mentioned, it is certain, the modern Samaritans are far from idolatry; ſome of the moſt learned among the Jewiſh doctors own, that they obſerve the law of Moſes more rigidly than the Jews themſelves. They have a Hebrew copy of the Pentateuch, differing in ſome reſpects from that of the Jews; and written in different characters, commonly called Samaritan characters; which Origen, Jerom, and other fathers and critics, ancient and modern, take to be the primitive character of the ancient Hebrews; though others maintain the contrary. The point of preference, as to purity, antiquity, &c. of the two Pentateuchs, is alſo much diſputed by the modern critics. See PENTATEUCH.

Origen, Jerom, and Epiphanius inform us, that the Samaritans rejected all the ſacred writings, except the five books of Moſes.

The Samaritans are now few in number; though it is not very long ſince they pretended to have prieſts deſcended directly from the family of Aaron. They were chiefly found at Gaza, Neapolis or Schechem (the ancient Sichem or Naplouſe), Damaſcus, Cairo, &c. They had a temple, or chapel, on mount Gerizim, where they performed their ſacrifices. They have alſo ſynagogues in other parts of Paleſtine, and alſo in Egypt.

Joſeph Scaliger, being curious to know their uſages, wrote to the Samaritans of Egypt, and to the high-prieſt of the whole ſect, who reſided at Neapolis. They returned two anſwers, dated in the year 998, of the Hegira of Mahomet. Theſe anſwers never came to the hands of Scaliger. They are now in the library at Paris, and have been tranſlated into Latin by father Morin, prieſt of the Oratory; and printed in the collection of letters of that father in England, 1662, under the title of "Antiquitates Eccleſiæ Orientalis." M. Simon has inſerted a French tranſlation, in the firſt edition of "Ceremonies et Coûtumes des Juifs," by way of ſupplement to Leo de Modena.

In the firſt of theſe anſwers, written in the name of the aſſembly of Iſrael, in Egypt, they declare that they celebrate the paſſover every year, on the fourteenth day of the firſt month, on mount Gerizim, and that he who then did the office of high-prieſt was called Eleazar, a deſcendant of Phinehas, ſon of Aaron. At preſent they have no high-prieſt. In the ſecond anſwer, which is in the name of the high-prieſt Eleazar, and the ſynagogue of Schechem, they declare, that they keep the ſabbath in all the rigour with which it is enjoined in the book of Exodus; none among them ſtirring out of doors but to the ſynagogue. They add, that on that night they do not lie with their wives; that they begin the feaſt of the paſſover with the ſacrifice appointed for that purpoſe in Exodus; that they ſacrifice no where elſe but on mount Gerizim; that they obſerve the feaſts of harveſt, the expiation, the tabernacles, &c. They add farther, that they never defer circumciſion beyond the eighth day; never marry their nieces, as the Jews do; have but one wife; and, in fine, do nothing but what is commanded in the law: whereas the Jews frequently abandon the law to follow the inventions of their rabbins.

At the time when they wrote to Scaliger, they reckoned one hundred and twenty-two high-prieſts; affirmed that the Jews had no high-prieſts of the race of Phinehas; and that the Jews belied them in calling them Cutheans; for that they are deſcended from the tribe of Joſeph by Ephraim. The truth is, the Jews impoſe abundance of things on the Samaritans: they frequently confound them with the Sadducees, as if they were infected with their errors. Rabbi Benjamin, who lived in the 12th century, confirms the beſt part of what we have ſaid of the Samaritans: he obſerves, they had prieſts of the tribe of Aaron; and who never married with any but thoſe of the ſame tribe: that they ſacrificed on mount Gerizim, where they had an altar of ſtone, raiſed by the Iſraelites after paſſing over Jordan. He adds, that they are of the tribe of Ephraim; that they change their habit to go to the ſynagogue, and waſh before they put it on.

SAMARITAN *Characters*, or *Letters*. See LETTER and HEBREW.

SAMARITAN *Medals*. In the cabinets of antiquaries we find ſome medals, uſually called *Samaritan* medals; the inſcriptions and legends of which are Hebrew; but the character different from the Hebrew of our bibles, which is the ſquare Hebrew, or Chaldee: and it is hence, *viz.* from the character, not from their being ſtruck by the Samaritans, that they are denominated *Samaritan*.

Theſe medals have been infinitely canvaſſed by the critics, both Jewiſh and Chriſtian, particularly rabbi Alaſcher, rabbi Bartenora, rabbi Azarias, rabbi Moſes, father Kircher, Villalpandus, Waſerus, Coringius, Hottinger, father Morin, Walton, Hardouin, Spanheim, &c.

The learned Jeſuit Souciet, in an expreſs diſſertation on the Samaritan medals, rejects all Hebrew medals, whoſe inſcriptions are in Chaldee characters, as ſpurious; and allows of none to be genuine but the Samaritan. Of theſe there are four kinds.

The firſt bear expreſsly the name of *Simon*, and the ſubject for which they were ſtruck, *viz.* the deliverance of Jeruſalem. The ſecond kind have not the name Simon, but only the deliverance of Sion, or Jeruſalem. The third kind have neither Simon nor the deliverance of Sion; but only the epochas, firſt year, ſecond year, &c. The fourth claſs have neither any inſcriptions, nor any thing whence one may judge of the time when they were ſtruck.

The three firſt kinds were certainly ſtruck after the return from the Babyloniſh captivity, and in the time of Simon Maccabeus, after Jeruſalem had been freed from the yoke of the Greeks. But though ſtruck after the captivity, father Souciet obſerves, their character ſhews itſelf to be that of the ancient Hebrew, which was uſed before the captivity, and the uſe of which was loſt by the people, during their ſojourn in Babylon and Chaldæa; but was again reſtored after their return, on the ſame footing as before. He adds, that the inſcriptions are pure Hebrew, ſuch as it was ſpoken before the captivity: that the character, therefore, is the true ancient Hebrew character: that it was the cuſtom to write each language in its proper character: that if they had departed from this rule, they had doubtleſs uſed the new character they brought with them from Babylon: that there could be no other reaſon, but that of ſettling all things on the ſame foundation they were on before the deſtruction of Jeruſalem, that could have induced them to uſe this character on their coins. And, laſtly, that theſe medals were not ſtruck by the Samaritans, but by the Jews, and in Jeruſalem.

F. Souciet is very full on all theſe points, and, to the proofs drawn from medals, he adds two others foreign thereto: the firſt drawn from the reſemblance of the Greek letters, introduced by Cadmus the Phœnician, with this Hebrew character, which was the ſame with that of the Phœnicians, as the language of thoſe people was the ſame with that of the Hebrews. The ſecond, drawn from ſeveral various readings in the ſcriptures, which cannot be well accounted for otherwiſe than by ſuppoſing, that the books written before the captivity were in the ſame characters with theſe medals, and which ſhew, that it is the conformity which certain letters have to that character, that has deceived the copyiſts.

From the whole he concludes, that this character of the medals is the true ancient Hebrew character; and, that to judge of the various readings of the Hebrew text, and the differences of the ancient Greek and Latin tranſlations, either from themſelves, or from the Hebrew text, recourſe muſt be had to this character.

SAMARITAN *Chronology*. See *Sacred* CHRONOLOGY.

SAMARITAN *Pentateuch*. See PENTATEUCH.

SAMAROBRIVA, AMIENS, in *Ancient Geography*, a town of Gaul, which in the time of Cæſar was a place or paſſage over the river, as its name indicates, and in which were held the ſtates of Gaul. It was the capital of the Ambiani in the time of the Notitia Imperii, and a place where arms were fabricated. See AMIENS.

SAMAROVSKOI, in *Geography*, a town of Ruſſia, in the government of Tobolſk; 176 miles N. of Tobolſk.

SAMARRA, a garment worn by thoſe condemned by the Romiſh inquiſition to be burnt; ſuch are impenitents, and thoſe who confeſs themſelves guilty of hereſy, but repent, and renounce their errors before the execution.

It is a kind of frock, made of ſackcloth, of a ſaffron colour, and painted with flames pointing downwards; ſometimes the unhappy ſufferer's picture is drawn to the life on it, and ſometimes devils are painted on it, dragging, as it were, the perſon along with them to hell: on their frock there is likewiſe put the croſs of St. Andrew, of a red colour on the back and heart: it is otherwiſe called *ſambenito*, or *bleſſed ſackcloth*, and *ſamaretta*.

SAMARSKAIA, in *Geography*, a fortreſs of Ruſſia, in the government of Upha; 40 miles W. of Troitzk.

SAMATA, a town of Egypt, on the left bank of the Nile; 7 miles N.W. of Dendera.

SAMATAN, a town of France, in the department of the Gers; 17 miles S.E. of Auch. N. lat. 43° 29′. E. long. 1° 1′.

SAMAVAT, called the celeſtial city, is a town of the Perſian empire, in the pachalic of Bagdad, near the Euphrates, about 90 miles acroſs the deſart from Meſhed Ali, containing a population of about 300 Arabs, under the government of an independent ſheick, who levies exorbitant contributions on all the pilgrims that take this route to the holy cities. To the ſouth of Samavat, the banks of the Euphrates are uninhabited.

SAMAUMA, a town of Braſil, in the government of Para; 25 miles S.W. of Para.

SAMBA, a ſea-port of South America, in the province of Carthagena; 30 miles N.E. of Carthagena. N. lat. 10° 40′. W. long. 75° 16′.

SAMBAC, in *Botany*, an Arabian name. See JASMINUM and NYCTANTHES.

SAMBACH, in *Geography*, a town of Bavaria, in the biſhopric of Bamberg; 4 miles S. of Bamberg.

SAMBACOONG, a ſmall iſland in the Eaſt Indian ſea. N. lat. 4° 6′. E. long. 117° 24′.

SAMBALACA, in *Ancient Geography*, a town of India, on the banks of the Ganges, according to Ptolemy, placed by D'Anville N.W. of Palibothra, towards the 27th degree of latitude.

SAMBALLAS, in *Geography*, the name of a numerous cluſter of iſlands near the coaſt of America, in the Spaniſh main: three of theſe cluſters are called "Caveſas," "Mulatas," and "Sagua." Theſe extend, in a ſcattered ſtate, at unequal diſtances, along the northern ſhore of the iſthmus of Darien: and moſt of them are ſeparated by navigable channels, affording occaſionally good anchorage in fair ſandy ground, and good landing, either on the iſlands or the main; and alſo good ſhelter from the wind. Theſe iſlands are moſtly low, flat, and ſandy, covered with a variety of trees, and abounding with various kinds of ſhell-fiſh; and ſome of them ſupply ſprings of freſh water, and convenient places for careening ſhips. The long channel between the Samballas and the iſthmus is from two to four miles in breadth, extending from Point Samballas to the gulf of Darien; and the coaſt of the iſthmus abounds with ſandy bays, with many brooks of freſh water. N. lat. 9° 26′. W. long. 78° 25′.

SAMBALLAS *Point*, or *Point San Blas*, a cape of America, on the N. coaſt of the iſthmus of Darien. N. lat. 9° 36′. W. long. 79° 14′.

SAMBAN, a town of the Birman empire, on the Irawaddy, famous for its iron manufacture; 8 miles S. of Meaday.

SAMBARA, the name of a tyrant in Hindoo legends, deſtroyed by Kama, the god of love, in puniſhment of indignities offered by him to his wife Reti, a perſonification of affection, who had been reduced, in one of her avataras, or incarnations, to the ſituation of cook to the tyrant Sambara. (See RETI.) This mythological legend is farther noticed under our article PRADYAMNA. It is frequently alluded to in Hindoo poetics, where Kama is called the deſtroyer, or foe of Sambara. Theſe epithets occur as names of the god of love in our articles KAMA and RADHA.

SAMBARRAH, in *Geography*, a town of Hindooſtan, in the circar of Bilſah; 20 miles E. of Bilſah.

SAMBAS, a ſea-port town of the iſland of Borneo, and capital of a kingdom of the ſame name, ſituated on the W. coaſt, and much frequented by the Chineſe, who carry piece-goods from Malacca and Johore, in exchange for gold, pearls, and bees-wax. The land is fertile, and in ſome places diamonds are found. N. lat. 2° 20′. E. long. 109°.

SAMBASTI, in *Ancient Geography*, a people of India, near the Indus, who, according to Diodorus Siculus, were vanquiſhed by Alexander the Great.

SAMBATELLO, in *Geography*, a town of Naples, in Calabria Ultra; 3 miles N. of Reggio.

SAMBAUOURA, a town of Africa, in Satadoo. N. lat. 15° 55′. W. long. 10° 33′.

SAMBELONG ISLANDS, two or three iſlands in the Indian ſea, among the Nicobar iſlands, N. of the Great Nicobar. N. lat. 41° 20′. E. long. 100° 36′.

SAMBENITO. See SAMARRA.

SAMBER, in *Geography*, a town of Hindooſtan, in the circar of Jyenagur, near a ſalt-lake; 30 miles W. of Jyepour.

SAMBHA, in *Hindoo Mythology*, a ſon of Kriſhna, by one of his wives named Jambavanti, who, in the extravagant allegories of that whimſical people, is related to have been the daughter of a bear, and won by ſome heroic exploit on the part of Kriſhna. This has been thought connected with ſome aſtronomical allegory; Kriſhna being the ſun. Several children are ſtated to have been the offſprings of this connection. Sambha ſtole a daughter of a Kuru rajah, which gives riſe to ſeveral battles in which the thief is made priſoner. The differences were healed for the time, but appear to have laid the foundation of the future wars deſcribed in the Mahabarat, ſee that article; JAMBA, and the three articles following it.

SAMBHU, a name of Siva, the deſtructive power of the Hindoo trimurti, or triad. (See SIVA and TRIMURTI.) Siva is often called by the name of Sambhu, which is ſaid to be an abbreviation of Swayambhu, or the ſelf-exiſting. See SWAYAMBHU.

SAMBLANCEY, in *Geography*, a town of France, in the department of the Indre and Loire; 10 miles N.W. of Tours.

SAMBO, in the *Hiſtory of South America*, denotes the offspring of a Negro man with an Indian woman, or of an Indian man with a Negro woman. His colour is nearly that of a grif or cobb, the produce of a Mulatto and Negro. The Sambo is well formed, muſcular, and able to endure fatigue; but all his faculties and inclinations are directed to vice. The mere name of Sambo ſignifies in the country an idler, drunkard, cheat, thief, and even an aſſaſſin. Of ten crimes that are committed, eight always pertain to this claſs of Sambos. Depons' Travels.

SAMBOANGAN, a town on the S.W. coaſt of Mindanao, where the Spaniards have a garriſon of 150 men, under a military governor. N. lat. 6° 45'. E. long. 122° 11'.

SAMBOROUGH, a ſmall iſland near the S. coaſt of Nova Scotia, with a light-houſe. N. lat. 44° 30'. W. long. 63° 32'.

SAMBORS, a town of Auſtrian Poland, in Galicia; 42 miles S.S.W. of Lemberg.

SAMBRA, or SAMBA, in *Ancient Geography*, a town of India, on the other ſide of the Ganges.

SAMBRACATE, an iſland of Arabia Felix, in the Indian ſea. Pliny.

SAMBRE, in *Geography*, a river of France, which riſes in the department of the Aiſne, and joins the Meuſe at Namur.

SAMBRE *and Meuſe*, one of the 13 departments of the region called the Reunited country of France, compoſed of a part of Namur, of Brabant, and of Luxembourg, ſituated in N. lat. 50° 20', and bounded on the N. by the departments of the Ourthe, Dyle, and Jemappe, on the E. by the departments of the Ourthe and the Foreſts, on the S. by thoſe of the Foreſts and Ardennes, and on the W. by thoſe of the Ardennes and Jemappe. Its territorial extent in kiliometres is 4605, or about 229 ſquare leagues, and its population conſiſts of 165,192 inhabitants. According to Haſſenfratz, its length in French leagues is 20, and its breadth 15. It is divided into four diſtricts or circles, *viz.* Namur, with 72,682 inhabitants; Dinant, having 37,321; Mache, 34,205; and St. Hubert, 20,984; 21 cantons; and 488 communes. According to Haſſenfratz, the number of its circles is 4, and that of its cantons 26; and its population comprehends 150,754 inhabitants. Its capital is Namur. Its contributions in the 11th year of the French era amounted to 1,333,152 fr. and its expences to 223,173 fr. This department is hilly, but moderately fertile; the circle of St. Hubert is almoſt covered with foreſts. It has good paſtures, iron mines, and other minerals.

SAMBROCA, in *Ancient Geography*, a river of Spain, in Tarragonenſis.

SAMBU, in *Geography*, a town of South America, in the province of Darien; 42 miles S.W. of St. Maria de Darien.

SAMBUCA, a town of Sicily, in the valley of Mazara; 12 miles N.N.E. of Sacca.

SAMBUCA, in *Ancient Muſical Inſtruments.* The ſambuca is ſaid to have been invented in Syria by a perſon of the name of Sambicus, and it is pretended that it was uſed by the firſt Sybil; Suidas, however, aſſerts it to have been invented by Ibycus.

Athenæus deſcribes it as an acute inſtrument with four ſtrings. Porphyry pretends that it was of a triangular form, and that its ſtrings were of different lengths. St. Jerom, St. Iſidor, and many others, aſſure us that it was a wind inſtrument. How unprofitable, alas! is all the information we are now able to acquire concerning the muſical inſtruments of the ancients: we are not only ignorant of their form and ſpecies, but even uncertain of their names. The prophet Daniel is the firſt who ſpeaks of ſymphony as an inſtrument, and of the ſambuca, when he deſcribes the magnificence of Nebuchadonoſor, at the time when he commanded every one to fall down and worſhip the golden calf.

SAMBUCA *Lincea*, an inſtrument of more modern times, invented in the 16th century by Fabio Colonna of Naples, deſcended from the illuſtrious Roman family of that name. This inſtrument had 500 ſtrings, and the inventor in deſcribing and recommending its uſe as a *perfect* inſtrument, publiſhed a tract in 4to. at Naples in 1618. It was not only to expreſs the three genera of the ancients, but to have diſtinct ſtrings for the major and minor tones and ſemitones of the modern diatonic genera. This *impracticable* inſtrument has been deſcribed by Merſennus, lib. 6. Harmonicorum, prop. 13, and Walther has given his diviſions of a tone into five parts, in his plates, tab. ix. fig. 7.

SAMBUCUS, the name of an ancient engine of war, uſed by Marcellus in beſieging the city of Syracuſe.

It was ſo big, that Plutarch, in the life of that general, obſerves, two ſhips were required to carry it.

SAMBUCUS, in *Botany*, a generic name occurring in the works of Pliny and other ancient authors, evidently adopted from σαμϐυκη, an inſtrument of muſic, "in the conſtruction of which," ſays De Thèis, "the wood of this tree, on account of its hardneſs, was uſed." — Linn. Gen. 147. Schreb. 198. Willd. Sp. Pl. v. 1. 1494. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 335. Prodr. Fl. Græc. Sibth. v. 1. 207. Ait. Hort. Kew. v. 2. 170. Michaux Boreali-Amer. v. 1. 181. Purſh v. 1. 129. Tournef. t. 376. Juſſ. 214. Lamarck Illuſtr. t. 211. Gærtn. t. 27.—Claſs and order, *Pentandria Trigynia.* Nat. Ord. *Dumoſæ*, Linn. *Caprifolia*, Juſſ.

Gen. Ch. *Cal.* Perianth ſuperior, of one leaf, very ſmall, five-cleft, permanent. *Cor.* of one petal, wheel-ſhaped, concave, cloven into five, obtuſe, reflexed ſegments. *Stam.* Filaments five, awl-ſhaped, the length of the corolla; anthers roundiſh. *Piſt.* Germen inferior, ovate, obtuſe; ſtyle none, but a ſwelling gland in its place; ſtigmas three, obtuſe. *Peric.* Berry roundiſh, of one cell. *Seeds* three, convex on one ſide, angulated on the other.

Eſſ. Ch. Calyx ſuperior, in five ſegments. Corolla five-cleft. Berry with three ſeeds.

1. S. *Ebulus.* Dwarf Elder. Danewort. Linn. Sp. Pl. 385. Engl. Bot. t. 475. Curt. Lond. faſc. 3. t. 18. Woodv. Suppl. t. 260. (Χαμαιακτη; Dioſc.)—"Cymes with three principal branches. Stipulas leafy. Stem herbaceous." Not uncommon throughout Europe in waſte places by the ſide of hedges, occaſionally occurring in Great Britain, and flowering in July. *Root* perennial, creeping. *Stems* herbaceous, ſimple, erect, three feet high, brittle, roundiſh, furrowed, rough, leafy. *Leaves* oppoſite, unequally pinnate, dark green, rather ſmooth, veined, ſerrated; leaflets unequal at the baſe, and more frequently glandular. *Stipulas* ſerrated, large. *Cyme* terminal, its branches hairy and many-

flowered. *Flowers* all ſtalked, of a dull blood-red or lilac colour. *Berries* globular, purpliſh-black, with three, ſometimes four, *ſeeds*. The whole plant is extremely nauſeous and violently cathartic, being ſtronger and more unpleaſant than the Common Elder. Moles will not come where the leaves of either ſpecies are laid, and no cattle will eat the Dwarf Elder at leaſt. The Engliſh name Danewort owes its origin to an antiquated notion that this noxious plant ſprung from the blood of the Danes.

A variety of this is ſometimes obſerved, ſmaller in all its parts, and with cut leaves, which is conſidered by Miller as a diſtinct ſpecies, and called by that author *S. humilis*.

2. S. *canadenſis*. Canadian Elder. Linn. Sp. Pl. 385. Mant. 358. Thunb. Japon. 128. "Schmidt. Arb. t. 142."—"Cymes with five principal branches. Leaves imperfectly bipinnate. Stem ſhrubby."—Native of North America and Japan, flowering from June to Auguſt. This is ſaid to riſe twenty feet from the ground in America, but in our gardens it is ſeldom more than half ſo high. Linnæus conſidered it "a middle ſpecies between *Ebulus* and *nigra*, having the habit of the latter, but pinnate *leaves*, with the lower leaflets ternate, and all more of an ovate form. It commonly periſhes down to the earth in winter. *Cymes* and *Stipulas* as in the Common Elder, the latter not expanded into leaflets, as in *Ebulus*."—*Flowers* ſmall, ſtrong-ſmelling. *Berries* globular, red, the ſize of Coriander ſeed, ſaid to be eſculent and ſweet.—Linnæus, in his Mantiſſa, hazards a conjecture that it may be only a variety of *S. Ebulus*.

3. S. *nigra*. Common Elder. Linn. Sp. Pl. 385. Engl. Bot. t. 476. Woodv. Med. Bot. t. 78. Fl. Dan. t. 545. (Ακτη; Dioſc.)—"Cymes with five principal branches. Leaflets ovate, ſerrated. Stem a tree."—Extremely common in hedges and groves in all parts of Europe, and particularly in this country. It flowers in June, and ripens its berries copiouſly in September.—A low buſhy *tree* or *ſhrub*, furniſhed with numerous, oppoſite, round, grey, ſmooth pithy *branches*. *Leaves* oppoſite, unequally pinnate; leaflets generally five, ſmooth. *Stipulas* ſcarcely any. *Cymes* terminal, in five principal branches, many-flowered. *Flowers* milk-white, fragrant, generally ſtalked. *Stamens* divaricated. *Berries* globular, dark purple, ſweetiſh, but unpleaſant to the taſte in a crude ſtate.

There are two Britiſh varieties of the Common Elder; one of them with cut leaves, and hence called Parſley-leaved Elder. The *berries* of both are whiter and more pleaſantly flavoured than in the original ſpecies. They are equally with that in great repute as affording a moſt excellent domeſtic wine. The properties of this highly uſeful tree are ſummed up in the following compendious, yet ſatisfactory, manner by the author of Engliſh Botany, who has moreover now ſuggeſted an obſervation to us "that the ſummer is eſtabliſhed when the Elder is in flower, and departs with the ripening of its fruit."

"This tree is, as it were, a whole magazine of phyſic to ruſtic practitioners, nor is it quite neglected by more regular ones. Ointments are made of the green inner bark, which is alſo a ſtrong purgative: the dried flowers infuſed in water are uſed in fomentations, or in tea, though in the latter capacity they are weakening to the nerves: the berries are boiled into a rob, which is really uſeful in ſore throats and catarrhs, and acts as a gentle laxative in febrile diſorders. The leaves laid into the ſubterraneous paths of the mole drive it away; and an infuſion of them is extremely uſeful for curious gardeners to ſprinkle over the buds of ſuch flowers as they wiſh to preſerve from minute caterpillars, as few inſects can bear the Elder. The *Phalæna Sambucaria*, however, feeds on this plant, and the colouring of its delicate wings ſeems to imitate the bloſſoms."

4. S. *japonica*. Japan Elder. Willd. n. 4. Thunb. Japon. 125.—"Cymes with three principal branches. Stipulas none."—Native of Japan.—*Stem* ſhrubby. *Branches* hollow, ſmooth, oppoſite, round, ſpreading. *Leaves* oppoſite, on ſmooth ſtalks, unequally pinnate; leaflets in three, five, or ſeven pairs, ovate, acute, ſmooth, white, and cartilaginous at the margin. *Cymes* terminal, more than twice compound, trichotomous, without bracteas, compoſed of white *flowers*. *Berries* unknown.

5. S. *racemoſa*. Red-berried Elder. Linn. Sp. Pl. 386. Jacq. Collect. v. 1. 36. Ic. Rar. t. 59.—"Flowers in compound, ovate cluſters. Stem a tree."—Native of mountains in the ſouth of Europe, flowering in April. The *trunk* of this elegant *tree* riſes to the height of nine or ten feet. *Branches* numerous, grey dotted with white, ſolid. *Leaves* oppoſite, ſtalked, unequally pinnate, ſmooth; leaflets lanceolate, acute, ſerrated, light green. *Flowers* yellowiſh-white, in thick, terminal, erect *cluſters*. *Berries* round, cluſtered, of a brilliant red colour. The *ſeeds*, which are greedily devoured by little birds, are yellow, and imbedded in an acid pulp.

Michaux enumerates another ſpecies of *Sambucus*, which he calls *pubens*, hinting that it is very nearly akin to *racemoſa*.

Sambucus, in *Gardening*, contains hardy deciduous trees, with ſhrub and herbaceous perennials, of which the ſpecies cultivated are, the common elder (S. nigra); the red-berried elder (S. racemoſa); the dwarf elder (S. ebulus); and the Canadian elder (S. canadenſis).

In the firſt ſort there are varieties with white or green berries, with variegated leaves; and the parſley-leaved elder, which has the leaflets narrower, and cut into ſeveral ſegments, which are again deeply indented on their edges regularly, in form of winged leaves; the ſtalks are much ſmaller, and the ſhoots are ſhort; the leaves have not ſo ſtrong an odour, and the berries are a little ſmaller. There are alſo the gold-ſtriped-leaved, the ſilver-ſtriped-leaved, and the ſilver-duſted elder.

The third was formerly called wallwort or walewort, and danewort, and differs from the firſt ſort in being herbaceous, in having a creeping root, and narrower leaflets, more numerous, and ſometimes lobed. There is a variety alſo with cut leaves, in which the roots do not creep ſo much, nor the ſtems riſe ſo high: the leaves have ſeldom more than ſeven leaflets, and towards the top only five, longer and narrower than in the above, deeply cut on their edges, and ending with winged acute points.

Method of Culture.—The firſt and ſecond ſorts may be readily increaſed from cuttings, or by ſowing their ſeeds; but the former being the moſt expeditious method, it is generally practiſed. The ſeaſon for planting the cuttings is any time from the autumn to the ſpring; in doing of which, there is no more care neceſſary than to thruſt them about ſix or eight inches into the ground, as they take root readily, and may afterwards be planted out where they are to remain, which may be upon almoſt any ſoil or ſituation, as they are extremely hardy: if their ſeeds be permitted to fall upon the ground, they often produce plenty of plants the ſucceeding ſummer. They are often planted for fences, on account of their quick growth; but as their bottoms become naked in a few years, as well as for ſeveral other reaſons, they are not by any means proper for that purpoſe. In this intention, however, the cuttings ſhould be planted in one or two rows, where they are to remain. And if they be arranged and put in chequer-ways, they will render the fence ſtronger, and more immediately fenceable againſt cattle or other animals. Alſo in all caſes where they are deſigned merely as a fence, they ſhould be cut and trained only to a very moderate height, being afterwards kept cloſe and regular by an annual clipping.

But this ſort of plants ſhould not ever be planted near habitations, as at the ſeaſon when they are in flower they are ſaid to emit ſuch a ſtrong ſcent as to occaſion violent pains in the heads of thoſe who abide long near them.

The firſt ſort ſucceeds in any ſoil or ſituation, and the third is increaſed rapidly, wherever it is once planted, by its creeping roots; the fourth puts out roots from cuttings almoſt as eaſily as the common ſort; but being liable to injury from ſevere froſts, it ſhould be planted in a ſheltered ſituation, and rather dry ſoil. All the ſeveral varieties of theſe plants ſhoot ſtrong, and are very ſoft while in their young growth, but become woody as they advance in age, which old wood is hard and ſolid, becoming fit for various uſeful purpoſes.

All the different ſorts afford diverſity in large ornamental plantations, the common ſorts being only thinly introduced.

The fruit of the common ſort is frequently made uſe of for the purpoſe of making wine from it. And the bark, buds, leaves, as well as the flowers, are not ſeldom employed medicinally in various intentions with the greateſt advantage.

SAMBUCUS, in the *Materia Medica*, &c. See EBULUS and ELDER; and alſo the preceding articles.

SAMBULOR, in *Ancient Geography*, a mountain of Aſia, towards Meſopotamia, celebrated on account of a temple dedicated to Hercules. Tacit. Annal. l. 12. c. 13.

SAMBUNARA, in *Geography*, a town of Africa, with a gold mine to which it gives name, in the kingdom of Bambouk; 60 miles S. of Galam.

SAMBURGH HEAD, a cape of Scotland, at the S.E. extremity of the iſland of Shetland. N. lat. 59° 44′. E. long. 1° 39′.

SAMBUS, in *Ancient Geography*, a river of India, which, according to Arrian, fell into the Ganges.

SAMCOCK, one of the Ladrone iſlands, in which ſhips may obtain good water. On the ſummit of this iſland is a heap of granite rocks, from whence there is an extenſive proſpect of all the paſſages leading through the Ladrones. The Chineſe pilots look out from thence for veſſels coming from ſea towards their ports. N. lat. 22° 9′. E. long. 112° 41′.

SAMCUR, a town of Perſia, in the province of Adirbeitzan; 87 miles W. of Tauris.

SAME, a town of Cephalonia; 8 miles N.E. of Cephalonia.

SAMEE, a town of Africa, in Kajaaga, on the Senegal; 20 miles E. of Joag.

SAMEGA, in *Ancient Geography*, a city of Judea, taken by Hyrcanus, according to Joſephus, probably the ſame as the Shema. Joſh. xv. 26.

SAMEL BRICKS. See BRICK.

SAMEN, in *Geography*, a mountainous province of Abyſſinia, celebrated for its iron. A large chain of rugged mountains, in which is the Jews' rock, the higheſt eminence, reaches from the ſouth of Tigré down near to Walldwobba, the low, hot country, that bounds Abyſſinia on the north. It is about 80 miles in length, in few places 30 broad, and in ſome much leſs. It is in great part poſſeſſed by Jews, and there Gideon and Judith, king and queen of that nation, and, as they ſay, of the houſe of Judah, maintain ſtill their ancient ſovereignty and religion from very early times. Bruce.

SAMEN, or *Geſſenay*, a town of Switzerland, and capital of a landvogtey, in the canton of Berne, on a river of the ſame name; 35 miles E.S.E. of Lauſanne.

SAMER, a town of France, in the department of the Straits of Calais, and chief place of a canton, in the diſtrict of Boulogne; two poſts S.S.E. of Boulogne. The place contains 1608, and the canton 9652 inhabitants, on a territory of 200 kiliometres, in 19 communes.

SAMEREIN, a town of the duchy of Stiria; 4 miles N. of Knitterfeld.

SAMERIUS, HENRY, in *Biography*, a learned Jeſuit, was born at Manche, a ſmall city in the duchy of Luxemburg, in the year 1540. He entered the ſociety at the age of 21, in their college of Cologne, and during the progreſs of his ſtudies became diſtinguiſhed for a deep knowledge in hiſtory and chronology. He was well qualified for the duties of a miſſionary into Proteſtant countries, by the addreſs with which he could aſſume a borrowed character. It was on this account, that, when Mary queen of Scotland, then a priſoner in England, had expreſſed a deſire to have a prieſt of the Jeſuits' order to attend upon her, he was ſent into this country in the character of a phyſician. Under this diſguiſe he gained acceſs to that princeſs, and attended her ſome years, officiating privately as her confeſſor. At length he had ſome reaſon to believe, that the agents of Elizabeth began to ſuſpect him, and he made his eſcape to the continent. After this he was ſent as a miſſionary into the United Provinces; where, on the capture of Steenwyck, in Overyſſel, by the Engliſh auxiliaries in the year 1592, he was diſcovered and thrown into priſon. Through the grace of count Maurice he obtained his liberty, and permiſſion to retire to his native country. He died at Luxemburg in 1610, in the 70th year of his age. As an author, his chief work was entitled "Chronologia Sacra ab orbe condito uſque ad Chriſtum natum," 1608. This work is ſaid to poſſeſs the merit of correcting a vaſt number of errors which had been made by preceding writers. Gen. Biog.

SAMGANOODKA HARBOUR, in *Geography*, a harbour on the N. coaſt of the iſland of Oonalaſhka, in the North Pacific ocean. N. lat. 53° 55′. W. long. 166° 30′.

SAMGUNGE, a town of Bengal; 20 miles S.E. of Iſlamabad.

SAMI, in *Botany*, the Sanſcrit name of the *Adenanthera aculeata*, of the wood of which the Brachmans, who devote themſelves to the prieſthood, are in certain ſects conſtrained to kindle a fire by the proceſs of attrition. This is done on entering their ſacerdotal office by means of a ſimple machine called *Arani*, which is thus conſtructed and uſed: a piece of plank of a foot in length, and half that in diameter, has a ſmall conical hole or ſocket in the upper ſide, into which is introduced the end of a pin, about a foot long and an inch in diameter, the other end of which forms a moveable handle: this is held ſteady in the left hand of the operator, who with a bow, having its ſtring twice wound looſely round the upright pin, twirls it quickly backwards and forwards with his right hand. The pin and ſocket fitting cloſely, the attrition of the two pieces of hard wood ſoon produces fire. The flat piece of wood is uſually laid on the ground, or floor, previouſly purified by a plaſtering of cow-dung and appropriate prayers, &c. and ſteadied by the foot of the operator, as well as by the preſſure of the upright pin. Every officiating Brachman, it is ſaid, ought to poſſeſs one of theſe machines, with which to light the fire for his own funeral pile, as well as for his nuptial ceremonies and the obſequies of departed anceſtors, and for the performance of ſolemn ſacrifices. See of this under the articles SAGNIKA and SRADHA.

The important element of fire is moſt myſtically contemplated by the enthuſiaſtic Hindoo, who in its phenomena ſees profundities without end; and from his proneneſs to mythologize every thing, has ſurrounded the regent or perſonification of fire, Pavaka, with a vaſt maſs of allegory, phyſical, theological, aſtronomical, &c. including what appears to our preſent perceptions whimſical and ridiculous. Fire being a ſymbol of the ſun, and the ſun of their ſupreme being, Brahm, and of his preſervative and deſtructive energies, perſonified in Viſhnu and Siva, a myſtic has vaſt ſcope for his enthuſiaſm in contemplating the phenomena of this all-pervading element. Under our articles O'M, Pavaka, a name of Agni, the *ign*eous god, Parvati, Siva, Surya, and others thence referred to, inſtances of this exuberance will be found.

It may be here obſerved, that fire being ſo curiouſly, and, to the ignorant, ſo wonderfully produced, by the operation of the Arani, that the inſtrument and the proceſs, as well as the product, are objects of admiration and ſuperſtition. Volumes of legends might be produced from the Puranas, and other romantic works, of continued igneous allegory. Siva, as well as Pavaka, being a perſonification of fire, and a cone being its type, as the form naturally aſſumed by aſcending flame, that figure is alſo a type of Siva. The pin of the Arani terminates in a cone; but an inverted cone is a ſymbol of Viſhnu, who, as well as fire, is alſo a perſonification of water, which, in its natural property of deſcent, aſſumes the ſhape of an inverted cone. Thus this part of the Arani reminds the myſtic of Siva, as well from the form of its termination, as from its erect poſition; and alſo of Viſhnu from the poſition of its cone: but principally of Siva, whoſe peculiar emblem the linga, or phallus, is thus doubly exhibited in both form and poſition; while the other portion of the Arani, the hollow conical receptacle, is no leſs ſtriking to ſuch viſionaries, as the figure of the ſacred Yoni, the moſt myſterious of forms, the ſymbol of the Sakti, or conſort of the generative Siva. Of theſe wild allegories, theſe "loves of the triangles," the enquirer will find further inſtances under the articles Linga, Yoni, and Meru, the latter being a mythological mountain; and as all ſuch muſt, when inſulated, be of a conical or pyramidal form, it is, with all ſuch mountains or hills, and all pyramids and cones, ſymbolical, like the phallus of the Greeks, of Siva, the Jupiter generator of the Hindoo Pantheon.

The produce of the fiction of two ſuch cones is thus moſt myſterious, and is in the eſtimation of the Saktas, or adorers of the female principle, ſacred to the conſort or energy of Siva, (ſee Sakta,) who is hence worſhipped under the name of Sami, or Sami-devi, meaning the goddeſs of the Sami tree. Another of her names is Rami; and theſe two names joined, as they are in ſome mythological legends, produce, as nearly as etymologiſts can expect, the Semiramis of the Greeks; and in truth there are many coincidences in the tales of the heroines, as well as ſimilarity in their names. See Sami-devi, and Rami.

In the article Parvati is mentioned under what a variety of names that multiform goddeſs is worſhipped. Being a perſonification of nature, ſhe is almoſt as varied as her archetype. It is mentioned alſo, that under many of her names and attributes ſhe cloſely reſembles the Juno of the Greeks. Samos was the reputed birth-place of the latter, and was peculiarly ſacred to her, and ſhe was hence called Samia. Parvati, in *her* name of Samia, is annually recalled to life by ceremonies performed to her honour under the Sami tree, a ſpot peculiarly ſacred to her. In the evening of a particular day, ſet apart for theſe ceremonies, fires are there lighted, offerings are made of rice and flowers, and ſometimes of ſpirits; the votaries ſing her praiſe, and in praiſe of the tree; ſome of the leaves of which, and ſome of the earth from the conſecrated ſpot, are carried home, and kept till the feſtival of the enſuing year.

A ſynonime of the Sami, is Siva, and it is ſacred of courſe to the united pair. Saktaphala, or the flower of the Sakta, is another. Babul is a vulgar name by which it is commonly known. The gum of this ſpecies of mimoſa is more tranſparent than that of the Nilotic or Arabian. Another ſpecies is called Ladjalu, meaning the *modeſt* or *baſhful*: this is, of courſe, our ſenſitive plant. See Ladja.

Sami, in *Geography*, a town, or rather a ſmall village, of Africa, in the kingdom of Ludamar; 84 miles E. of Benowm. It is ſituated within two days' journey of Goomba, the frontier town of Bambara.

Sami *Iſſuram*, a paſs of Hindooſtan, from the Carnatic to the circar of Cuddapa, on the N. ſide of the river Pennar; 16 miles N.E. of Cuddapa.

SAMIA Terra, in the *Materia Medica*, an earth of the marle kind, found in the iſland of Samos, and much uſed both in medicine and in the pottery of the ancients.

It is of two kinds, a white dull-looking one, called the *collyrium Samium*, and a browniſh and glittering one, called the *aſter Samius*.

The *collyrium Samium* is ſtill to be found in the place from whence they had it, and from whence it has its name; and is a very fine and pure earth, of a cloſe, equal, and regular texture, and yet remarkably light. It is of a fine bright white colour, and of a ſmooth, even, and gloſſy ſurface. It is ſoft to the touch, adheres firmly to the tongue; it is eaſily broken between the fingers, and does not at all ſtain the hands; but drawn along a rough ſurface, leaves a fine clean white line. It melts ſlowly in the mouth, and does not ferment with acids. Theſe are the characters by which it is to be diſtinguiſhed from the white earths; to which may be added its manner of lying in the earth; which is not, as that of moſt of the other earths, in a continued ſtratum, or bed, but in the perpendicular fiſſures, and horizontal cavities in the ſtrata of ſtone, in the manner of the European earths, called the *medullæ ſaxorum*, but in ſubſtance very different from them all.

The other kind of Samian earth, called *aſter Samius*, is ſtill found in the place from whence they had it, and lies in the ſame manner in which they have deſcribed it, in a horizontal cavity between two rocks.

It is a looſe, lax, and crumbly earth, of a mixed colour, between a duſky white and a pale brown, and all over ſpangled with ſmall glittering particles. It is of a looſe and incoherent ſtructure, but uſually breaks away into flat pieces, and ſeems ſomewhat of an obſcurely laminated make. It is of a dry duſty ſurface, falls to pieces very readily between the fingers, and though it duſts the hands, does not at all ſtain them. It melts very readily in the mouth, and when thrown into water parts immediately, with a hiſſing noiſe, into a number of flaky pieces, and from thence moulders into a looſe powder. It makes no efferveſcence with acid menſtrua, and when its glittering particles are ſeparated, and ſtrictly examined, they are found to be ſo many thin flakes of that ſpecies of foſſils called *ſelenites*.

This, as well as the other ſpecies, or collyrium, was prepared by calcination and waſhing, and uſed by the ancient phyſicians internally in fluxes and hemorrhages, and externally in inflammations. Theſe were alſo ſome of the moſt valued earths in the Roman pottery.

There is alſo a *Samian ſtone*, λιθος Σαμιος, taken out of the mines in the ſame iſland. It is white, and ſticks to the tongue when applied to it; it is held aſtringent, and cooling;

ing ; and is alſo uſed by the goldſmiths to burniſh their gold, and give it a greater luſtre.

SAMIARII, among the *Romans*, were a kind of furbiſhers, who, with Samian earth, poliſhed the arms of the prætorian ſoldiers, and emperor's life-guards.

SAMIAVERAM, in *Geography*, a town of Hindooſtan, in the Carnatic ; 10 miles N. of Tritchinopoli.

SAMICUM, in *Ancient Geography*, a territory in Triphylia, ſituated near the coaſts, N.W. of Lepreum. Near it are a temple of Neptune, held in great veneration, and two grottoes, conſecrated, the one to the nymphs "Aſſigrides," and the other to the "Atlantides."

SAMI-DEVI, in *Mythology*, a name of the Hindoo goddeſs Parvati, meaning the goddeſs of the Sami tree, under which ſhe is annually worſhipped, with appropriate ceremonies, as mentioned under the article SAMI. She is alſo called Sami-Rami, whence, and from other coincidences, ſhe has been thought the ſame with the Semiramis of the Greeks. Her appearance in this character aroſe from a mutilation of her ſpouſe Mahadeva, or Siva, who, by the imprecation of an offended Muni, was deprived of his linga or phallus ; and her wanderings and lamentations on this occaſion have reminded an ingenious etymologiſt (Mr. Wilford, ſee Aſiatic Reſearches, vol. iv.) of the wanderings of Dematur, and the lamentations of Bacchus, as noticed in the latter part of the ſecond column of our article MUNI. The world being thus deprived of its vivifying principle, generation and vegetation were at a ſtand ; gods and men were alarmed ; and having diſcovered the cauſe of it, ſearched for, and found, the ſacred linga, grown to an immenſe ſize, and endowed with life and motion. Having worſhipped the ſacred pledge, they cut it into thirty-one pieces, each of which, polypus-like, became a perfect linga. The Devatas, or gods, left one and twenty of them on earth, carried nine to heaven, and one to the inferior regions, for the benefit of the inhabitants of the three worlds. To ſatisfy Devi, and reſtore all things to their former ſituation, Mahadeva was born again in the character of Baleſwara, or Iſwara *the infant ;* but ſuddenly became a man, under the title of Lileſwara, or Iſwara *who gives delight ;* and after various adventures met his conſort, then in the character of Sami-Rami, who, by the ſweetneſs of her voice, in chanting her own metamorphoſis and that of Lileſwara, attracted the notice of her former and future ſpouſe, in his preſent character, till now entirely indifferent to the female ſex. The goddeſs ſoon became Lileſwara, and happily re-united to her lord. Under our articles ISWARA and LILESWARA, ſome particulars connected with theſe names of the Hindoo god and goddeſs will be found ; and under almoſt all, at any rate under ſome hundreds of the articles of this work, relating to the mythology of Egypt, Greece, Italy, and India, ſomething may be diſcovered having reference to them under ſome one or other of their various names, attributes, incarnations, or adventures.

SAMIE', in *Geography*, a town of Thibet ; 24 miles S. of Laſſa.

SAMIEN, a ſmall iſland in the North ſea, near the coaſt of Lapland. N. lat. 68° 42'.

SAMILITAM, a river on the W. coaſt of New Mexico, 12 miles from Point Artila on one ſide, and ſix farther to Copalita river. At its mouth is an Indian town, where a ſhip's company may find proviſions and freſh water.

SAMINGAVA, a town of Japan, in the iſland of Xicoco ; 22 miles S.W. of Ovutſi.

SAMINTHUM, in *Ancient Geography*, a town of the Peloponneſus, on the confines of the Argolide and Laconia, according to Thucydides.

SAMIR, a town of Paleſtine, in the mountains of the tribe of Judah, according to the book of Joſhua.

SAMIRA, or SERRAMENRAI, in *Geography*, a town of the Arabian Irak, on the Tigris, built by the caliph Motaſſem VIII., and made the place of his reſidence. Scarcely any thing of notice remains in this decayed town but its moſque, to which pilgrims frequently reſort ; 70 miles N.N.W. of Bagdad. N. lat. 34° 20'. E. long. 43° 7'.

SAMI-RAMI, in *Mythology*, a name of the Hindoo goddeſs *Parvati,* which ſee ; ſimilar, perhaps, to *Sami-devi ;* ſee that article.

SAMISAT, in *Geography*, a town of Aſiatic Turkey, in the government of Maraſch, on the Euphrates ; 30 miles E. of Maraſch. N. lat. 37° 10'. E. long. 37° 20'.

SAMISENA, in *Ancient Geography*, a country of Aſia, in Galatia, towards Bithynia, according to Strabo.

SAMLAND, in *Geography*, a province of Pruſſia, bounded on the N. by the Baltic and the Curiſch Haff, on the E. by Pruſſian Lithuania, on the S. by Natangen, and on the W. by the Baltic ; about 70 miles long, and 20 broad ; abounding in large foreſts and lakes, with a ſoil generally ſandy, and principally producing barley and rye. The foreſts abound with junipers, and the lakes with fiſh. Its capital is Konigſberg.

SAMLET, SALMULUS, in *Ichthyology*. See SALMO.

SAMMA, in *Geography*, a town on the S. coaſt of the iſland of Bourro. S. lat. 3° 50'. E. long. 127° 15'.

SAMMADE, a town of France, in the department of the Landes ; 9 miles S.S.E. of St. Sever.

SAMMAEL, in *Fabulous Mythology*, an evil angel, who, as the rabbins pretend, deceived Eve, mounted on the old ſerpent ; they add, that he is the angel of the dead, the prince of the air, and the chief of the demons. Other rabbins repreſent him as the prince of the angels, and believe that he is to preſide at the laſt judgment ; on which account they preſent offerings to him on the day of ſolemn expiation, to appeaſe his anger.

SAMMAN, in *Geography*, a town of Arabia, in the province of Nedsjed ; 120 miles S.S.W. of Cathem.

SAMMANGER-FIOERD, a bay of the North ſea, on the coaſt of Norway, 16 miles long, and 1½ wide ; its entrance is 12 miles S. of Berghen.

SAMMARTINO, a town of Italy, in the department of the Mincio ; 11 miles W. of Mantua.

SAMMATTI, a town of Sweden, in the province of Nyland ; 24 miles N. of Eknas.

SAMMEE, a town of Africa, in Bambara ; the largeſt on the banks of the Niger. N. lat. 14° 4'. W. long. 3° 25'.

SAMNITES, in *Antiquity*, an order of gladiators, armed by the Campanians after the faſhion of the country of the Samnites. They wore a ſhield broad at the top, to defend the breaſts and ſhoulders, and growing more narrow toward the bottom, that it might be moved with the greater convenience ; they had alſo a ſort of belt coming over their breaſts, a greave on their left foot, and a creſted helmet on their heads. Livy, lib. ix.

SAMNITES, a conſiderable people of Italy, who inhabited the country called *Samnium ;* which ſee. They were deſcendants of the Sabines, and Strabo ſays expreſsly that they were called Sabellins, and that the Greeks called them Samnites. From them proceeded the Hirpini, Lucani, and Brutii. The Samnites were, like the Sabines, from whom they ſprung, a warlike people ; and engaged in frequent conteſts with the Romans. In the year of Rome 420, they attacked the Sidicini, a people of Auſonia, on the other ſide of the Liris, but upon their recurring for ſuccour to the people of Campania, the Samnites turned their arms againſt the latter, who, being an effeminate people, were defeated in two pitched battles, and their metropolis Capua was beſieged. The Campanians, thus diſtreſſed by the Samnites, ſurrendered themſelves and their country to the Roman republic. The Roman ſenate interpoſed, and diſpatched ambaſſadors to intreat the Samnites, as friends, to ſpare a province which belonged to Rome. The Samnites, however, paid no regard to the meſſage, but prepared for ravaging Campania. This inſult incenſed the Romans, who declared war againſt them. The ſucceeding conteſt was ſevere; and though the Samnites were defeated by the conſul Valerius, the Romans owned that they had never engaged with a more intrepid enemy; nor would they have known that they had gained the victory, if the Samnites had not deſerted their camp in the night, and abandoned it to the conquerors. In a ſubſequent engagement, the Romans, under the command of Decius, obtained a complete victory, and plundered their camp, after having cut in pieces above 30,000 of the enemy. The Samnites having raiſed new forces, appeared before Sueſſulo, a town ſituated between Nola and Capua; but they were again defeated by Valerius with great loſs. Notwithſtanding repeated defeats, the Samnites renewed their hoſtilities; and under the command of Pontius, an experienced and able officer, gained ſo deciſive an advantage over the Romans, that they were conſtrained to ſue for peace. At length the conſul ſignified to the Samnite general, that they intended to lay down their arms, and paſs under the yoke. This intimation was followed by a conference, the reſult of which was, that the Romans promiſed to quit Samnium, to evacuate the places where they had planted colonies, and to ſuffer the Samnites to live in peace according to their own laws. In order to ſecure the performance of this convention, the Samnites demanded 600 Roman knights as hoſtages, with this condition, that they might cut off their heads, if the republic did not perform the conſul's promiſes. As ſoon as the terms were made known, ſorrow and rage filled the hearts of the Roman ſoldiers; but whilſt the legions were lamenting their hard fate, the conſuls paſſed firſt under the yoke, ſtripped of their habits, and half-naked; the inferior officers followed according to their rank, and at laſt the ſoldiers, one by one. The Samnites inſulted them as they paſſed; and if any Roman returned merely a fierce look, he was immediately knocked down or killed. The Romans declared this treaty null; and ſoon formed an army conſiſting almoſt wholly of volunteers, burning with rage againſt the Samnites; and having marched from Rome to the neighbourhood of Caudium, where their army had ſuffered diſgrace, they prepared to ſurrender the officers in due form to the Samnites. But preferring an open war to this act of vengeance, and demanding a fulfilment of the treaty, they releaſed the hoſtages, and deſired them to return, unmoleſted, to their camp. The Romans renewed the war; and the Samnites having ſurpriſed Fugellæ, a Roman colony, offered quarter to all who ſhould lay down their arms; upon which many ſubmitted; but the Samnites not thinking themſelves obliged to keep their word with any of the Roman name, cauſed all who had ſurrendered to be burnt alive. The Samnites ſuffered a diſaſtrous defeat at Apulia, and few of them eſcaped alive. At length Lucania, whither the Samnites had retired, was taken, and Papirius, afterwards conſul, inſiſted that all the ſoldiers in the place, to the number of 7000, ſhould, unarmed, and with one garment each, paſs under the yoke, and Pontius at the head of them. Theſe conditions were accepted, and the Romans had the pleaſure of retaliating upon Pontius and his Samnites, the ignominy which he had made them and their conſuls undergo at the Caudine forks. They alſo recovered the hoſtages which had been delivered up to the Samnites, as ſecurities for the execution of a ſhameful treaty. After ſeveral ſucceſſive defeats, the Samnites obtained a renewal of their alliance with Rome; nevertheleſs they ſoon renewed their hoſtility; and having ſuſtained great loſs both of men and territory, they were at length driven out of their own country, and took refuge in Hetruria. Uniting with the Hetrurians, Umbrians and Gauls, they prepared for war againſt the republic, and were defeated by Fabius and Attilius, &c. in ſeveral engagements. The war with the Samnites having furniſhed the Roman generals with 24 triumphs, counterbalanced by many ſevere loſſes of men and money, the republic became tired of engaging the ſame enemy; and therefore conſented, in the year of Rome 467, to enter into an alliance with them for the fourth time. In the year of the city 486 the Samnites loſt all in a ſingle battle, and thus terminated a bloody war, which had laſted 72 years, and procured for the Roman generals 30 triumphs.

We know nothing of the language of the Samnites, except from two medals, bearing two inſcriptions. On the one is a head, probably that of a chief, with "Embratur," denoting, in Latin, "Imperator;" and on the other is the word "Saminius," which Pellerin takes for the name of the Samins.

Strabo informs us that no father of a family could diſpoſe of his children in marriage at his own pleaſure; but the ſtate choſe ten beautiful young females and ten comely and virtuous young men. The moſt diſtinguiſhed of the latter married the moſt beautiful of the former, and thus in ſucceſſion till the whole number was diſpoſed of.

SAMNIUM, in *Ancient Geography*, a country of Italy, the central part of which is part of the Apennine, between the Marſi and Peligni to the N.W., the Frentani to the E., Apulia to the S.E., Lucania to the S., and Campania to the S.E. Its limits, however, have varied at different periods, and have been differently ſtated by geographers. The principal rivers of Samnium were the Sagrus, which ran to the eaſt; the Vulturnus, which purſued a ſouthern courſe for a conſiderable interval, and then ran weſtward into the ſea; the Trinius and Tifernus, which flowed eaſtward into the Adriatic ſea; the Tamarus, &c. Its principal towns were Alinum, Æſernia, Aliſæ, Bovianum, Caudium, Sapinum, Volona, Palumbinum, Aculanum, Cominium, Romalea, Aquilonia, Morgantia, Ferentum, and Beneventum.

SAMOCRAT, in *Geography*, a town of Egypt, on the weſt branch of the Nile; 6 miles S. of Faoué.

SAMOIEDES. See SAMOYEDES.

SAMONIUM PROMONTORIUM, in *Ancient Geography*, a promontory on the eaſtern part of the iſle of Crete, according to Ptolemy. It is called "Samonium Orientale" by Strabo and Mela, and "Sammonium" by Pliny.

SAMOENS, in *Geography*, a town of France, in the department of the Leman, and chief place of a canton, in the diſtrict of Bonneville; 34 miles W. of Geneva. The place contains 3129, and the canton 5569 inhabitants, on a territory of 192½ kiliometres, in 4 communes.

SAMOGITIA, a province of Poland, bounded on the north by Courland, on the eaſt by Lithuania, on the ſouth by Pruſſia, and on the weſt by Pruſſia and the Baltic; about 150 miles long, and 90 broad. This country formerly belonged to Lithuania, and, together with that province, was governed by one duke or ſovereign, or formed an oligarchy. In the year 1304 Samogitia was ceded to the Teutonic knights, from whom it was taken within about four years. In 1411 the knights were promiſed that it ſhould revert to them, after the death of king Uladiſlaus Jagello, and the great duke Alexander. In the year 1413 the inhabitants embraced the Chriſtian religion; and a biſhop's ſee, with other eccleſiaſtical offices, was erected in this duchy. The country is woody, and has many fertile ſpots. Its cattle are numerous, and its horſes are excellent. Its foreſts abound with bears and elks. Bees are much cultivated, and yield a great quantity of honey and wax. The inhabitants are robuſt and clowniſh, but repreſented as honeſt and juſt in their dealings. A ſingular cuſtom is ſaid to prevail here, which is, that no young woman is permitted to walk abroad in the night without a light in the hand, and two bells at the girdle. The province is ſubdivided into 25 diſtricts: its chief towns are Roſienne and Medniki.

SAMOLUS, in *Botany*, a name in Pliny, for a plant uſed by the ancient Gauls to cure diſeaſes of oxen and hogs; hence, according to De Theis, its name is derived from *ſan*, ſalutary, and *mos*, a hog. Others have ſuppoſed the herb in queſtion to be a native of Samos, in which iſland Valerandus, a botaniſt of the time of the Bauhins, is ſaid to have gathered what is now called *Samolus Valerandi*, but which it would be difficult to prove that of Pliny.—Linn. Gen. 89. Schreb. 119. Willd. Sp. Pl. v. 1. 927. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 259. Ait. Hort. Kew. v. 1. 365. Brown Prodr. Nov. Holl. v. 1. 428. Juſſ. 97. Tourn. t. 60. Lamarck Illuſtr. t. 101. Gærtn. t. 30. (Sheffieldia; Forſt. Gen. t. 9. Juſſ. 96. Labill. Nov. Holl. v. 1. 40.)—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Preciæ*, Linn. *Lyſimachiæ*, Juſſ. *Primulaceis affine*, Brown.

Gen. Ch. *Cal.* Perianth half ſuperior, in five deep, erect, permanent ſegments. *Cor.* of one petal, ſalver-ſhaped; tube ſhort, wide, the length of the calyx; limb nearly flat, in five deep, obtuſe ſegments, with five intermediate, converging ſcales at their baſe. *Stam.* Filaments five, ſhort, oppoſite to the ſegments, and inſerted at their baſe; anthers converging, concealed by the ſcales. *Piſt.* Germen half inferior; ſtyle thread-ſhaped, the length of the ſtamens; ſtigma capitate. *Peric.* Capſule ovate, encompaſſed by the calyx, of one cell, ſplitting half way into five valves. *Seeds* numerous, ſmall, ovate, inſerted upon a large, globoſe, central *receptacle*.

Eſſ. Ch. Corolla ſalver-ſhaped, five-cleft, with five intermediate ſcales. Stamens inſerted into the tube, oppoſite to each ſegment. Capſule half inferior, of one cell, with five teeth.

Obſ. Mr. Brown eſteems the five ſcales to be imperfect ſtamens.

1. S. *Valerandi*. Common Brookweed, Water Pimpernel. Linn. Sp. Pl. 243. Willd. n. 1. Ait. n. 1. Br. n. 1. Purſh v. 1. 158. Fl. Brit. n. 1. Engl. Bot. t. 703. Curt. Lond. faſc. 4. t. 20. Fl. Dan. t. 198. Bauh. Hiſt. v. 3. 791. (Anagallis aquatica rotundifolia; Ger. Em. 620.)—Stem erect. Leaves all obovate or oblong, obtuſe. Cluſters corymboſe. Bracteas about the middle of the flower-ſtalks. Capſule nearly globoſe.—Native of watery places in moſt parts of Europe, as well as of North America, Aſia, and Africa, flowering in ſummer. A pale, ſmooth, rather ſucculent, perennial herb, about a foot high, with entire *leaves*, and copious, ſmall, white, inodorous *flowers*. The *capſule* is more inferior than ſuperior. Mr. Brown obſerves that in the ſouth of Africa this ſpecies differs from its general appearance in being covered with minute white ſpots.

2. S. *littoralis*. Shore Brookweed. Br. n. 2. Ait. n. 2. Willd. Sp. Pl. v. 1. 833. (Sheffieldia repens; Linn. Suppl. 135. S. incana; Labill. Nov. Holl. v. 1. 40. t. 54.)—"Stem round, branched, leafy. Radical leaves ſpatulate; ſtem-leaves nearly lanceolate. Segments of the calyx acute."—Native of moſt parts of New Holland. *Brown*. A plant of various appearance, more ſlender in every part than the former, but with larger *flowers*; the herbage ſometimes rather hoary.

3. S. *junceus*. Ruſhy Brookweed. Br. n. 3.—"Stem erect, nearly ſimple, round, almoſt leafleſs, with diſtant ſcales. Radical leaves obovate or ſpatulate. Cluſter of few flowers. Segments of the calyx acute."—Gathered by Mr. Brown on the ſouth coaſt of New Holland.

4. S. *ambiguus*. Ambiguous Brookweed. Br. n. 4.—"Stem erect, round, panicled. Leaves diſtant, linear or awl-ſhaped. Cluſters lax. Calyx nearly inferior, obtuſe, concave at the baſe."—From the ſame country. *Brown*.

SAMO-POULO, in *Geography*, a ſmall iſland near the weſt coaſt of the iſland of Samos.

SAMORE-HILL, a mountain of Ireland, on the borders of Sligo and Leitrim, and in maps ſometimes placed in one, ſometimes in the other. It is to the north of Lough Gilly, and within a few miles of the town of Sligo.

SAMORIA, a town of Hungary, in the iſland of Schutt; 8 miles S.E. of Preſburg.

SAMOS, a town of Hungary; 10 miles N.N.E. of Caſchau.—Alſo, a river which riſes in Tranſilvania, 18 miles S. of Coloſvar, and runs into the Theyſs, 12 miles N. of Eſted, in Hungary.

Samos, a name given by the ancients to three diſtinct iſlands; *viz.* one ſituated near Thrace, called Samos of Thrace, or Samothrace, now "Samandrachi;" the ſecond, called by the Greeks Samos the ſteep, now Cephalonia; and the third lying near the coaſt of Ionia, of which we ſhall here give an accouut. Some authors affirm that the name Samos, which has ſuperſeded other appellations, was derived from a hero, who was born here. Others ſay, that the Greeks, calling all elevated places Samos, have thus deſignated an iſland, which preſents conſiderable eminences, inſomuch that it was a land-mark all over the Archipelago. It was formerly conſecrated to Juno, who is ſaid to have been born here, on the banks of the river Imbraſus, under the ſhade of an agnus-caſtus, or chaſte tree, a ſhrub common in this iſland, as well as in the other iſlands of the Archipelago. The magnificent temple that was erected here in honour of this goddeſs is totally annihilated, and the greateſt part of the ancient ſplendour of the iſland is loſt. Samos was alſo the cradle of Pythagoras, of the poet Charilus, of the mathematician Conon, contemporary of Archimedes, of Timanthus, one of the moſt famous painters of ancient Greece; and it was in this iſland that Herodotus, flying from tyranny, ſought an aſylum, and compoſed in this agreeable retreat the firſt books of his hiſtory. But with the ſtate of ſlavery into which this iſland has ſunk, genius and talents have diſappeared. The inhabitants, however, are repreſented as the mildeſt and the moſt witty of the Greeks; and their country is ſaid to poſſeſs every thing neceſſary to render it flouriſhing; good harbours, the beſt of which is that of Vathi, on the north ſide, a poſition of the iſland very advantageous for trade, a fertile ſoil, a ſalubrious climate, a pure air, and abundance of water. The fertility of Samos was anciently proverbial, and the poſſeſſion of it was much ſought for. At Samos it was commonly ſaid, that hens gave milk. The ancients found every thing excellent here, except the wine, which forms one of the beſt revenues of the iſland; its muſcadine wines, properly managed, being capable of attaining the qualities of thoſe of Cyprus. Athenæus reports, that the fig-trees, apple-trees, and roſe-trees, and alſo the vines, bore fruit twice in a year. Pliny takes notice of the pomegranates of Samos. Wild fowl, partridges, woodcocks, ſnipes, thruſhes, wood-pigeons, turtle-doves, wheat-ears, &c. abound here. Although Samos has no rabbits, it has hares, wild boars, goats, and ſome deer. Cattle are bred here, but they have fewer ſheep than goats. Samos has ſome iron-mines, emery ſtone, and plenty of ochre. Its mountains conſiſt of white marble. They have ample ſupplies of melons, lentils, French beans, &c. The bread of the poor is made of equal parts of wheat, barley, and white millet. Some mix only barley and millet, which is plentiful: wheat is exported. The pine-trees are very productive of pitch. The ſilk is very fine, and the traffic of this article is conſiderable. The honey and wax are excellent. According to Pliny, the Samians were accounted the inventors of pottery. This iſland is about ten leagues in length, and half as much in its greateſt latitude. Its length, however, is interrupted by a narrow cape, which ſtretches very far towards the ſouth, called Cape Colonni, and a few fragments of which have been ſeparated by the ſea: theſe are called Samo-poulo, or Little Samos. Great Samos is itſelf but a fragment more conſiderable, detached from the continent, from which it is ſeparated only by a channel that is ſcarcely half a league in width. This little ſtrait is known to navigators under the name of Little Bogaz: the Great Bogaz of Samos, nearly two leagues in breadth, lies to the weſt, between that iſland and the ſmall Fournis iſlands, ſo called becauſe at a diſtance they have the figure of roofs of ovens: they were anciently called "Corſeæ inſulæ." This is a paſſage much frequented by ſhips ſailing from Conſtantinople to Syria and Egypt; and they there find good anchorage. There are four nunneries upon the iſland, and above 300 private chapels; yet the population does not exceed 12,000 perſons, the iſland, as Tournefort ſays, being entirely in the hands of churchmen, poſſeſſors of monaſteries. The ſwarms of Caloyers and Greek papas have made a deſart of this fine iſland, where the whole qualification neceſſary to become a prieſt, and live by the induſtry of others, is a talent of being able to repeat maſs from memory. The biſhop of Samos, who is alſo biſhop of Nicaria, enjoys an annual income of 2000 crowns, and has, beſides, a conſiderable revenue from the important ſervices he renders to the iſlanders, in bleſſing for them their water and their cattle in the month of May. All the produce of the dairies on that day belongs to him. He has alſo two beaſts out of every herd. Thus circumſtanced, one need not wonder at the change that has taken place between the ancient and the modern population of Samos. Tournefort ſays, that Samos is infeſted with wolves, and that tigers ſometimes arrive from the main land, after croſſing the Little Boghaz. In croſſing the Boghaz between Samos and Icaria, voyagers have been ſtruck by the extraordinary intenſity of the deep blue colour of the ſea; and this circumſtance, which is as diſtinguiſhing a characteriſtic of the Archipelago as the brightneſs of the ſky, has been noticed by no writer except our enchanting bard:

> "He that has ſail'd upon the *dark blue* ſea,
> Has view'd at times I ween a full fair ſight."
> Byron's Childe. Harold.

N. lat. 37° 43′. E. long. 16° 50′.

Samos, a town of Spain, in the province of Galicia; 18 miles S.E. of Lugo.

Samos, in *Ancient Geography*, a town of the Peloponneſus, in the Elide.—Alſo, a town of the Peloponneſus, in Meſſenia.—Alſo, a town of Aſia, in Lycia.

SAMOSATA, a town of Aſia, and capital of Comageni; ſituated on the right bank of the Euphrates. It was the reſidence of Antiochus, when Pompey granted to him this province, and which his ſucceſſors enjoyed until the time of Tiberius, who reduced it to a Roman province.

SAMOSATENIANS, Samosateni, in *Eccleſiaſtical Hiſtory*, a ſect of ancient Antitrinitarians, thus called from their leader, Paulus Samoſatenus, biſhop of Antioch, under the emperors Aurelian and Probus.

They are alſo called by St. Auguſtine *Pauliani*, and by the fathers of the council of Nice, Παυλιανιζοντες. See Paulianists.

St. Epiphanius will have the Samoſatenians to be real Jews, without any thing more than the name of Chriſtians: adding, that they uſe the ſame arguments againſt the myſtery of the Trinity that the Jews do; pleading againſt it, with them, on pretence of maintaining the unity of the Godhead: though they do not obſerve the ceremonies of the law.

SAMO-SIERRA, in *Geography*, a mountain of Spain, which forms the boundary between Old and New Caſtile.

SAMOSVIVAR, a town of Tranſilvania, on the Samos; 18 miles N. of Coloſvar. N. lat. 47° 9′. E. long. 23° 24′.

SAMOTHRACE, now called *Samandraki* or *Mandraki*, in *Ancient Geography*, a ſmall iſland of the Ægean ſea, at ſome diſtance to the north of Lemnos, over-againſt the mouth of the Hebrus. This iſland was alſo called Dardania, becauſe, according to Pliny and Pauſanias, Dardanus retired hither, and alſo Leucaſia and Leuconia. It derived its name Samothrace from a colony of Thracians, joined to ſome fugitives from Samos. It became celebrated for the worſhip of the Cabirian gods, in the myſteries of which all the heroes of antiquity were initiated. This iſland was formerly governed by its own kings: in proceſs of time, the government became republican; and this form terminated, when the iſland was ſubdued by the Perſians. Alexander reſtored to it its ancient privileges; but his ſucceſſors made it dependent. The Romans reſtored its liberty; but in the time of Veſpaſian, this, like the other ſtates of Greece, was reduced to the condition of a Roman province. Perſeus, king of Macedonia, ſought an aſylum in the temple of Caſtor and Pollux in this iſland, when he fled from the purſuing vengeance of the Romans. Having loſt its liberty, its other advantages have been of little avail: its ancient celebrity ceaſed. It is eight leagues in circumference.—Alſo, a town ſituated in this iſland, according to Ptolemy.

SAMOTMAT, in *Geography*, a town of Africa, in the kingdom of Sus, near the coaſt of the Atlantic.

SAMOTRAKI, a ſmall iſland of the Mediterranean; 4 miles W. of Corſu.

Samotraki, or *Samandraki*, an iſland of the Grecian Archipelago, ſituated between the iſland of Stalimene and the coaſt of Romania, anciently called "Samothrace" (which ſee). The town of the ſame name has a ſpacious harbour. N. lat. 40° 18′. E. long. 25° 19′.

SAMOTZIE. See Zamoscie.

SAMOUN, or Samiel, the name of a burning wind in Arabia, and particularly near the city of Mecca, which has occaſionally ſuffocated people in the middle of the ſtreets.

SAMOUTTY, in *Geography*, a town of Hindooſtan, in Malwa; 16 miles S. of Bopaltol.

SAMOYEDES, or Samoiedes, a people inhabiting the N.W. part of Ruſſia, towards the Frozen ſea. Of their origin and hiſtory little is known. Leading a romantic life in bleak and ſavage deſarts, without the arts of writing and chronology, they endeavour to ſave from oblivion the memory of their tranſactions and heroes only by ſongs; which, perhaps, with ſome truth for their foundation, are embelliſhed with ſo many fabulous additions, that even this mode of tradition affords us no means of becoming acquainted with their ancient ſtate. When the victorious Ruſſians, in the progreſs of their conqueſts, came up to this people, they found them already out of their paternal, probably more ſouthern, ſeats, of which they had been deprived at a much earlier period by the Tartars, and no where in their peculiar condition: a great part of them having ſeparated in their flight, from their correlative ſtems. The preſent home, as it may be called, of the "proper Samoyedes," is found on the coaſts of the Frozen ocean, from about the 65th degree of north latitude up to the ſea-ſhore. Nova Zembla, indeed, is not inhabited by them; but eaſtward acroſs the Yeniſſey extend the coaſts on which they ſwarm up to the 75th degree of latitude. In theſe regions, the coldeſt, rudeſt, and moſt deſolate of the earth, dwell the Samoyedes, ſolitary and ſcattered, from the White ſea to the other ſide of the Yeniſſey, and almoſt up to the Lena, both in Europe and in Siberia. They call themſelves "Nenetſch," perſons, or "Choſovo," men. The origin of their uſual appellative is uncertain. Thoſe on the weſtern ſide of the Ural, or the "European Samoyedes," were tributary to Ruſſia ſo long ago as the year 1525, and conſequently long before their Siberian relatives. The regions in this part, over which they ſtray, are about and between the rivers Meſen and Petſchora, in the governments of Archangel and Vologda, where they live independently, in a ſtate of ſeparation from other nations. The "Siberian Samoyedes," on the eaſtern ſide of the Uralian mountains, are in the government of Tobolſk, along the coaſts of the ſtraits of Waigat, or Vaigat, about the exit of the Oby and the Yeniſſey, and in the parts contiguous to the Lower Lena. Collectively, ſays Mr. Tooke, they are more numerous than the Oſtiaks, but like them only ſingly and diſperſed in the prodigious tracts of country occupied in common by them. (Tooke's Ruſſ. vol. i.) See Ostiaks.

Chantreau, in his "Ruſſian Travels," has deſcribed both the Oſtiaks and the Samoyedes. He repreſents the former as of middle ſtature and of a ſlender make. Their complexion is livid, and their features inexpreſſive. They are dirty as hogs, cowardly as the timid dove, and ſimple beyond what words can expreſs. They are much addicted to ſuperſtition, in which they are encouraged by their prieſts, who give themſelves out for ſorcerers, capable of controlling the elements, of diving into futurity, and of abſolving by certain magic ſpells a man overwhelmed by iniquities and crimes. Theſe Oſtiaks, to whom nature appears to have given only the form of men, poſſeſs an ungrateful ſoil, are induſtrious, hoſpitable, faithful to their engagements, and have a horror at theft. Among them the cares of the family devolve on the women, as does the labour of fiſhing, from which they draw their only ſupport. The dreſs of both ſexes is a kind of bag of the ſkin of fiſh or rein-deer, prepared as our tanners prepare their hides. The women veil themſelves, and are right in doing ſo. The Oſtiaks live ſolely on fiſh, with which nature has ſtocked their rivers in abundance, and of which they catch more than ſufficient to ſupply their wants. Their utenſils, arms, and oils, are made of the bones, ſinews, and fat of fiſh. They are all pagans, and their worſhip correſponds with their intellectual faculties. The bear is to them the moſt terrible enemy, but his ſkin is an object of adoration. Like the Kalmucks, they have Jurtes, winter villages, and ſummer camps.

The Samoyedes are neighbours to the Oſtiaks, from whom they differ very little in manners, cuſtoms, and dreſs, but much in their perſons. Their faces are round, and ſometimes agreeable. They are of a robuſt conſtitution, but they are leſs civilized than the Oſtiaks, and are impatient under the yoke of the Ruſſians, which hangs very lightly upon them. Their women do not uſe the veil, have no ſhirts, but wear drawers both day and night. They are far from being beautiful, and in our opinion would be not a little improved by the uſe of the veil. The Samoyedes are as dirty as the Oſtiaks, and ſtill leſs nice in what they eat. Even an animal in a ſtate of putrefaction does not offend them. A Samoyede treats his wife worſe than an Oſtiak does. The latter makes her labour, but condeſcends to make her a companion, whereas the Samoyede conſiders her only a ſervant. Yet it often happens that this wife has brought a portion, which is the only riches of her huſband. It is ſaid, that new married wives ſometimes continue virgins for a whole month, though lying every night at the ſide of their huſbands. If this be a fact, the huſbands muſt be very cool, or the wives muſt poſſeſs few attractions. Like the Oſtiaks they have ſorcerers, who pretend to be very knowing. Theſe ſorcerers uſe a tabor, or an inſtrument very like it, either to make his conjurations, or to aſſiſt him in the ſongs, by which he ſucceeds in turning the heads of his credulous countrymen. The Samoyedes too have their Bog. There is not a Jurte where one may not be found, and not a ſeaſon of the year, when a rein-deer is not ſacrificed to this ſuppoſed divinity.

Thoſe Samoyedes who live in the government of Archangel, are quite ſeparated from the reſt of their tribe, and in a manner excluded from any intercourſe with them. They have alſo a different dialect, though they agree perfectly in their religion and cuſtoms. They are all very poor, ſimple, and undeſigning; but their tawny complexion, long eyes, and puffed cheeks, make them appear very diſagreeable to ſtrangers. In ſize and make they reſemble the Laplanders; like them they uſe rein-deer to draw their ſledges. They know not what bread is; and they live in huts and caverns: but in other reſpects nature has diſtinguiſhed this ſpecies of men very viſibly from that of the Laplanders. The upper jaw of the Samoyedes is more prominent, advancing as far as their noſe: and their ears are placed remarkably high. Neither men nor women among them have any hair but upon the head; and their nipples are as black as jet. The Laplanders are not particulariſed by any of theſe ſigns. The Samoyedes have very little knowledge of a ſupreme being; but pay their adoration to mis-ſhapen wooden images of men, beaſts, fiſhes, birds, &c. They alſo worſhip the heads of beaſts of prey, particularly thoſe of bears, which they put up in the woods and fervently pray to them; that being an animal of which they are extremely afraid. They acknowledge a good and bad principle: and indeed the horrid climate in which they live, ſeems in ſome meaſure to excuſe that belief, ſo ancient among ſo many people, and ſo natural to the ignorant and unfortunate. Their prieſts, whom they call *ſhamanns*, or *kodeſniks*, are choſen from among ſuch as are moſt advanced in years; and they imagine that theſe men can reveal to them the will of their gods, foretell future events, and perform all kinds of magical operations. Neither theft nor murder is ever heard of among them; being almoſt without paſſions, they are without injuſtice. They have not even in their language any term to expreſs vice and virtue.

Their extreme ſimplicity has not yet allowed them to form abſtruſe notions: inſtinct alone directs them. Their marriages are attended with no other ceremony than merely an agreement between the parties. Moſt of them have but one wife; though polygamy is not prohibited among them. Like the Oſtiaks, they call their new-born children by the name of the firſt animal they meet; or if they happen to meet a relation, he generally names the child. The Samoyedes, male and female, are clothed alike; and as they are equally diſagreeable in their features, and the men have no beards, it is ſomewhat difficult to diſtinguiſh one ſex from the other. Their winter dreſs is made of rein-deer ſkin, with the hairy ſide outwards; and generally the cap, coat, gloves, breeches, and ſtockings, are ſewed together, ſo that the whole ſuit makes but one piece. In ſummer they dreſs themſelves with fiſh-ſkins; and, inſtead of thread, they uſe the tendons of wild beaſts cut into long filaments. They all ſubſiſt by hunting and fiſhing; the fleſh of rein-deer, bears, ſeals or ſea-dogs, fowls, dried fiſh, and turnips, being their uſual food. They ſometimes boil their fleſh meats, but commonly eat them raw; a practice which has made ſome unjuſtly call them man-eaters, and accuſe them of devouring their deceaſed friends, and priſoners taken in war. They eat even the raw entrails of any beaſts, according to Yſbrant, Ides, and Le Brun. Their hunting weapons are bows and arrows, and javelins pointed with bone; though they have alſo ſome darts bearded with iron. When they find it difficult to ſubſiſt in one place they immediately remove to another. Their ſummer huts are made of nothing but the bark of birch-trees; but in winter they are covered with ſkins of rein-deer. Their whole ſubſtance conſiſts in tents, clothes, and rein-deer. Till the reign of the czar Iwan Baſilowitz, the only magiſtrate among them was the oldeſt man in the family or village to whom the reſt were ſubject. But in the year 1563, one Anika Stroganow, a man of ſubſtance, and of ſome conſequence in his country, which was near Archangel, obſerving that thoſe people came yearly down a river which falls into the Dwina, with exceeding fine furs, ordered his ſon and ſome of his ſervants to follow them to their homes, and bring him word who they were and where they lived. They did ſo; and on their return Anika reported to the government what he had diſcovered. Some of thoſe ſavages were afterwards carried to Moſcow, where every thing filled them with admiration. They looked upon the czar as their god, and readily agreed that all their countrymen ſhould pay him a yearly tribute of two ſables a-piece. Colonies were ſoon eſtabliſhed, and forts erected, beyond the Oby and Irtiſh; and in 1595, a Coſſack was ſent, with a party of ſoldiers and a few cannon, who conquered their country, as Cortez ſubdued Mexico. By degrees the habitable places were occupied by Ruſſian governors, troops, and traders; and the Ruſſian laws were introduced. The Samoyedes made two attempts to ſhake off the yoke, but were ſoon reduced. Their furs, which they diſpoſe of to the Ruſſians for trifles, are the fineſt in the whole empire.

SAMP, in America, a name given to a ſort of bread made of the maize, or Indian corn.

They firſt water the corn for about half an hour, and then beat it in a mortar, or grind it in a hand-mill; they then ſift out the flour, and winnow the huſks from it; they then mix this into a thin paſte with water, and bake it in flat loaves, which they call ſamp-loaves, or ſamp-bread.

Beſide this they have another diſh prepared of this corn, which they eſteem a great delicacy, and call by the name of ſamp, without the addition of loaf or bread. To make this, they only bruiſe or grind the corn to the ſize of rice, and then winnowing away the huſks, they boil it gently till it is thoroughly tender, and then add to it milk and butter and ſugar: this is not only a very wholeſome, but a very pleaſant diſh. It was the firſt diet of our planters when newly ſettled there, and is ſtill in uſe, as an innocent food in ſickneſs as well as health.

The Indians, who feed on this ſort of food, are found never to be ſubject to the ſtone, and to eſcape ſeveral other painful diſeaſes.

The Engliſh have found a way of making a very good ſort of beer of the grain of this Indian corn: they do this either by uſing the bread made of it, or elſe by malting it as we do our own corn. When they make the beer of the maize-bread, they break or cut it into lumps as big as a man's fiſt; they maſh theſe in the ſame manner that we do malt, and boil up the wort in the ſame manner, either with or without hops. Phil. Tranſ. N° 142.

SAMPACCA, in *Botany*. See MICHELIA.

SAMPAKA, in *Geography*, a large town of Africa, in Ludamar, formerly belonging to the king of Bambara; but with other towns as far as Goomba, given up, for the ſake of peace, to the Moors. At this town Mr. Park lodged in the houſe of a negro, who underſtood and practiſed the art of making gunpowder; 55 miles E. of Benowm.

SAMPARA, a town on the W. coaſt of the iſland of Celebes. S. lat. 2° 21′. E. long. 112° 27′.

SAMPAT, a river on the S. coaſt of the iſland of Borneo. S. lat. 3° 18′. E. long. 112° 27′.

SAMPAT, the name of a fabulous bird, introduced among the mythological machinery of the Hindoos, and principally in the Ramayana, where it is made to reſiſt the tyrant Ravana in his rape of Sita. The faithful bird loſt his life in the attempt, and had magnificent obſequies performed in his honour, by his grateful maſter Rama. Sampat was endowed with ſupernatural proweſs, which it ſeems was ſeated in one of the long feathers of his tail: deprived of this he became like other birds. Ravana having treacherouſly gained this ſecret, gained alſo an eaſy victory after plucking the potential feather. Another name of this bird is Jettahi-pakſha, or Jatayu. One of his names ſignifies king of the vultures; but in pictures he is ſeen in gaudy plumage, more like a parrot or peacock. Of Rama, the Ramayana, Sita, &c. ſee thoſe articles.

SAMPEL, in *Geography*, a river of Brandenburg, which runs into the Ukeley, 4 miles S. of Plate.

SAMPFREA, one of the ſmaller Shetland iſlands of Scotland; 3 miles S. of Yell. N. lat. 60° 46′. W. long. 1° 26′.

SAMPHIRE, in *Botany*. See SAMPIRE.

SAMPHIRE, *Golden*, a ſpecies of the *inula*; which ſee.

SAMPHIRE, *Prickly*, a ſpecies of the *echinophora*; which ſee.

SAMPHIRE, in *Rural Economy*, the common name of a plant of the weed-kind, which is often found on land in the vicinity of the ſea-ſhores, and which is troubleſome to extirpate. Marſh-ſamphire, thrift, and other ſimilar plants, moſtly prevail on ſalt-marſhes, when they become fit for ſecuring againſt the ſea. See SALT-*Marſh*.

SAMPHORÆ, among the *Ancients*, were horſes marked with the letter Σ on their legs.

SAMPIERO, in *Geography*, a town of the department of Liamone, or iſland of Corſica, in the diſtrict of Ajaccio. The canton contains 3461 inhabitants.

SAMPIGNY, a town of France, in the department of the Meuſe; 4 miles S. of St. Mihiel.

SAMPIRE, in *Botany*, ſuppoſed to be a corruption of St. Pierre; the name of an herb uſed for pickling, moſtly called Samphire. The genuine ſort is *Crithmum maritimum*, gathered, as Shakſpeare has recorded, on Dover cliffs; but the moſt common Samphire is SALICORNIA; ſee that article.

SAMPIT, in *Geography*, a town of the iſland of Borneo, ſituated on the S. coaſt; near a river of the ſame name; 140 miles W. of Banjer-Maſſin.

SAMPLE *of Grain, Seeds*, &c. in *Agriculture*, the ſmall portion of any ſuch articles, which is taken to and exhibited in the markets or other places for the purpoſe of ſelling different quantities of them by. The ſample ſhould always agree perfectly in every particular with the portion that is ſold to be delivered according to it. Good ſamples of the grain kind ſhould conſtantly be full, plump, and without any ſort of ſhrivelled appearance, having a proper degree of clearneſs and fairneſs in the coats or ſkins of the grains. In thoſe of the ſeed kind the great recommendations are brightneſs, fineneſs of bloom, and the ready and eaſy ſliding of them over each other in the hand. In hops, beſides the bloom and mealineſs, the ſmell is to be taken into the account. See GRAIN and SEED.

Different ſorts of ſamples may ſuit different purpoſes and intentions of the purchaſers, according to the nature of the uſes to which they are to be put, as in ſowing, grinding, malting, and other proceſſes. It may farther be noticed, that culture and ſeaſons alſo produce differences in the ſamples for theſe applications. Barley after a wet ſeaſon has been found to malt beſt, in Eſſex, from turnip land; and in a dry one from ſtrong land. The ſame is the caſe in grinding, &c.

SAMPOGNA. See ZAMPOGNA.

SAMPOO, in *Geography*, a ſmall iſland in the Eaſt Indian ſea, near the S. coaſt of Java. S. lat. 8° 23′. E. long. 112° 26′.

SAMPSEANS, SAMPSÆI, in *Eccleſiaſtical Hiſtory*, ancient ſectaries; the ſame, according to St. Epiphanius, with the Elceſaites.

The Sampſeans were not properly either Jews, Chriſtians, or Gentiles; though they took their name from the Hebrew, *ſemes, ſun;* as if they adored the ſun.

They acknowledged one only God, waſhed themſelves often, and were attached, in almoſt every thing, to the religion of the Jews. Many among them abſtained wholly from eating of fleſh.

Scaliger, after Epiphanius, will have the Sampſeans to be the ſame with the *Eſſeni*. In reality, the *Elceſaites, Sampſeans, Maſſalians*, and *Eſſeni*, appear to be no more than ſo many different names for the ſame ſect; unleſs, perhaps, the firſt added ſomething to the opinions of the laſt.

SAMPSON, THOMAS, in *Biography*, was born about the year 1517, and educated in the univerſity of Oxford. He afterwards applied to the ſtudy of the law, and in his purſuit of this profeſſion he was converted from the Popiſh to the Proteſtant religion, and became himſelf ſo zealouſly attached to the reformed faith, that he converted many others to it, among whom was John Bradford, the famous martyr in queen Mary's reign. In 1549 he was admitted to holy orders by Cranmer and Ridley. He became rector of All-hallows in London, and was a very popular preacher during the reign of king Edward, in which he received ſome other preferment. Upon the acceſſion of queen Mary he withdrew into concealment, but felt a conſiderable intereſt for his ſuffering brethren, and employed himſelf, in connection with Richard Chambers, in collecting money from the citizens of London for the benefit of poor ſcholars in the univerſities, who had imbibed the reformed doctrines. At length the part which he took in this buſineſs being diſcovered, he found it neceſſary to quit the kingdom. He went to Straſburg, where he applied himſelf cloſely to theological ſtudies, in which he was aſſiſted by the learned Tremellius. He returned to his native country at the acceſſion of Elizabeth, and was again hailed as a popular preacher. In 1560 the queen offered to promote him to the dignity of biſhop, on a vacancy in the ſee of Norwich, but he declined the honour, becauſe he could not conform to the habits and ceremonies uſed at the induction; which, in his caſe, had been diſpenſed with at his ordination. In 1561 he was inſtalled dean of Chriſt-church, Oxford, an office which he retained till the year 1564, when he was cited, on account of his known Puritan principles, before the tribunal of archbiſhop Parker, the reſult of which was the expulſion of Mr. Sampſon from his deanery. The archbiſhop was actuated in this buſineſs either from principle, or with a deſire of pleaſing perſons in power, as he became the friend of Sampſon, and obtained for him ſome profitable employment, and even petitioned the ſecretary Cecil in his favour, urging upon him, "that as the queen's pleaſure had been executed upon him for example to the terror of others, it might yet be mollified to the praiſe of her clemency." After this he obtained the maſterſhip of the hoſpital of William de Wigſton, at Leiceſter, a prebend in the cathedral church of St. Paul's, London, and ſome other preferment. In 1574 he had a paralytic ſeiſure, which led him to a reſignation of his lectureſhip, and he retired to his hoſpital, where he died in 1589, in the 72d year of his age. He was author of ſeveral pieces highly eſteemed in their day, but which have no claim to be enumerated, being moſtly adapted to the times in which he flouriſhed.

SAMPSON, in *Geography*, one of the Scilly iſlands.

SAMPSON, a county of Fayette diſtrict, in North Carolina, bounded N. by Johnſon county and S. by Bladen; containing 6719 inhabitants, including 1712 ſlaves; the court-houſe is 36 miles from Fayetteville.—Alſo, a town of North Carolina; 20 miles E. of Fayetteville.

SAMPSON'*s Poſt*, in *Ship-Building*, a large pillar or ſtantion placed up diagonally on each ſide againſt the quarter-deck beam, and next afore the cabin bulkhead, with its lower end tenoned into a chaſe on the upper deck. It is uſed to bring the fiſh-tackle to, when fiſhing the anchor, &c. This name is alſo given to the pillar immediately under the hatchways, having ſcores on each ſide, as ſteps, to go up and down by. This pillar is of ſo much larger ſcantling than the other pillars, as not to be too much weakened by the ſcores.

SAMPSUCUS, in *Botany*, an old name for the Marjoram, or ORIGANUM; ſee that article.

SAMPUNIA, a pneumatic inſtrument of muſic among the ancient Hebrews, like our common bag-pipe.

SAMPUTA, in *Geography*, a town of Mexico, in the province of *Tlaſcala;* which ſee.

SAMSO, a town on the W. coaſt of the iſland of Celebes. N. lat. 0° 11′. E. long. 119° 38′.

SAMSOE, an iſland of Denmark, between North Jutland and Zealand, 12 miles long from N. to S., and at its greateſt breadth four, and in ſome places hardly one, from E. to W. The ſoil is generally fertile, and produces particularly good peas. The inhabitants carry on ſome commerce in ſmall veſſels. N. lat. 55° 56′. E. long. 10° 30′.

SAMSON, in *Scripture Hiſtory*, a judge of the Iſraelites, and celebrated for the extraordinary tranſactions by which he checked the pride of the Philiſtines, their oppreſſors, was born at Zorah, belonging to the tribe of Dan, about the year 1155 B.C. He was the ſon of a perſon called Manoah, whoſe wife, till ſhe became pregnant with Samſon, had long been barren. When ſhe had, probably, given up all hopes of a child, it was announced to her that ſhe ſhould conceive and bring forth a ſon, who would prove inſtrumental in commencing the emancipation of his country from the yoke of their tyrants. Upon the birth of the promiſed child, his parents called him Samſon; and as he advanced in years, we are informed that he exhibited early marks of extraordinary endowments. When arrived at the age of manhood, he conceived an affection for a young woman among the Philiſtines, and requeſted his parents to procure her for him in marriage. They accordingly accompanied him to Timnath, the place of her reſidence; and while they were paſſing through the vineyards, Samſon was attacked by a young lion, which he quickly deſtroyed. The terms of his intended marriage having been ſettled to the ſatisfaction of all parties, Samſon returned to his father's houſe, where he remained while the requiſite preparations were making for the ſolemnization of the nuptials. At the appointed time he ſet out, with his parents, to Timnath, in order that he might complete the contract: in his road he found that a ſwarm of bees had made their comb in the carcaſe of the lion which he had formerly ſlain. He took away a part of it, for the ſake of the honey which it contained, and which he ate as he travelled on, preſenting his father and mother with a portion of it. At the marriage feaſt he propoſed a riddle to the young Philiſtines, on the ſolution of which a wager was to depend. This riddle, in alluſion to the lion and the honey, was, "out of the eater came meat, and out of the fierce came ſweetneſs." Seven days were given for the young men to unravel the meaning of theſe words: after the expiration of three or four days without ſucceſs, they applied to Samſon's wife, deſiring her to obtain from her huſband the proper clue, and at the ſame time threatening her, if ſhe did not, to inflict the ſevereſt puniſhment upon her and all her kindred, as perſons who had introduced a ſtranger among them to plunder them of their property. Samſon yielded to her importunity, and diſcloſed to her the myſtery on the morning of the ſeventh day, and ſhe communicated it to her countrymen, who, by this means, won the prize. Filled with indignation at the treacherous arts by which the ſecret had been drawn from him, he took his revenge on the Philiſtines, and deſerted his wife.

When his reſentment had ſubſided, he went to ſeek his wife, but was then denied acceſs to her by her father, who told him, that, conſidering his ſudden deſertion of his daughter as a proof that ſhe did not poſſeſs his heart, he had given her in marriage to another. At the ſame time, dreading, however, the effects of his anger, he offered Samſon her ſiſter, who, as he ſaid, was younger and handſomer. This offer he did not accept, but departed with a determination of vengeance on a people who had offered him ſuch inſults. With this view he collected three hundred jackalls, and let them looſe among the ſtanding corn of the Philiſtines, having previouſly faſtened to their tails burning torches, by which means their crops of corn, their vines, and their olive-trees were deſtroyed. When the Philiſtines found that this device for the deſtruction of their property had been projected by Samſon, and attributing it to his reſentment for the injuries which he had ſuſtained from his wife and her father, they in their wrath aroſe in a tumultuous body and ſet fire to his houſe, cauſing both thoſe wretched perſons to periſh in the flames, as the original authors of their calamity. This ſavage act of vengeance Samſon amply retaliated, by falling on them, when they were aſſembled on ſome public occaſion, and making a great ſlaughter: he then withdrew to a faſtneſs in a rocky mountain belonging to the tribe of Judah.

The Philiſtines now raiſed an army, and marched againſt the men of Judah, who did not dare to meet them in the field; but, upon remonſtrating againſt the injuſtice of their invaſion, received a promiſe that hoſtilities ſhould not be commenced, provided they would deliver Samſon bound into their hands. To this they agreed, having firſt prevailed upon Samſon to ſubmit to be bound and led away towards his enemies. So ſoon as he was brought within ſight of the camp of the Philiſtines, they rent the air with ſhouts of joy, ſuppoſing that now their dreadful enemy was in their power. Their triumph, however, was of very ſhort duration, for Samſon burſt his bonds aſunder, and with no other weapon than the jaw-bone of an aſs, which lay upon the ground, attacked the exulting foe with ſuch irreſiſtible fury that he ſoon killed a thouſand of them, and put the reſt to ignominious flight. Some time afterwards Samſon went in diſguiſe to Gaza, one of the principal cities of the Philiſtines, where he was ſoon recognized: the citizens inſtantly faſtened the gates of their town, and thinking they had him quite ſecure they prepared to kill him. But Samſon, apprized of their deſigns, aroſe at midnight, and by the exertion of his bodily ſtrength tore up the poſts on which the gates of the city were hung, and carried both to a conſiderable diſtance from the place, on the top of a hill within ſight of Hebron, where they appeared a monument of his wonderful deliverance, both to the Iſraelites and Philiſtines. Some time after this, Samſon became enamoured of a woman named Delilah, whom the Philiſtines made uſe of as an inſtrument for betraying him, and after ſome vain attempts, ſhe at length found that his great ſtrength depended entirely upon his hair, ſaying, that if he were deprived of that, he ſhould become as weak as other men. She now cauſed his hair to be cut off, and then gave him up into the hands of his enemies, who put out his eyes and carried him away to Gaza, where he was thrown into chains, and condemned to the ſervile employment of grinding corn in the common priſon. In this ſituation he continued a conſiderable time, ſubject to a thouſand inſults, till at length his hair was again grown, and his ſtrength reſtored with it, when a great feſtival was to be celebrated by the Philiſtines, in honour of their god Dagon, and by way of thankſgiving, for his having delivered their dreadful enemy into their hands. On this occaſion, all the lords of the Philiſtines, and ſome thouſands of men and women, being aſſembled either in the temple of that idol, or, as ſome think, in a building erected for the purpoſe, Samſon was ſent for, that they might exult over him, and gratify themſelves by expoſing him to abuſe and deriſion. With this view he was placed in the centre, between the two pillars which ſupported the roof of the building, and he reſolved to humble the pride of the oppreſſors of Iſrael, though the act would prove fatal to himſelf. He accordingly tore away the pillars of the building, and the whole aſſembly was buried in the ruins. This happened about the year B.C. 1117. Samſon had been twenty years a judge in Iſrael.

SAMSOOM, in *Geography*, a diſtrict and town of Armenia, in the mountainous and rugged country S. of Mooſh. It is inhabited by two Curdiſh tribes, named Samanee and Mooſee, who united amount to about 18,000 or 20,000 ſouls. Theſe people form a ſmall independent republic, named Balagee, and are ſaid to be a moſt ſavage and illiterate race. Some of them profeſs Iſlamiſm, but the majority have no religion. They are brave and hardy, like all mountaineers, fond of liberty, and attached to their native ſoil. Their ſtrong hold is ſituated on the ſummit of a lofty and inacceſſible mountain, having a branch of the Tigris flowing at its baſe: it is impregnable to the attacks of the neighbouring chiefs, by whom theſe people are feared and hated. They cultivate a ſmall quantity of corn, hemp, and tobacco, make wine and brandy, and have abundance of fine fruit. Kinneir's Perſ. Emp. p. 330.

SAMSOUN, a ſea-port town of Aſiatic Turkey, on a bay of the Black ſea. It was originally founded by a colony of Greeks, and called "Amiſus." It afterwards fell to the kings of Pontus; 50 miles N.W. of Tocat. N. lat. 41° 4′. E. long. 36° 20′.

SAMSOUN *Kalaſi*, a town of Aſiatic Turkey, in the province of Natolia, anciently "Priene;" 16 miles N.N.W. of Milets.

SAMUDRA, in *Hindoo Mythology*, a perſonification of the ſea, who is called the lord of rivers. Hindoo writers ſuppoſe the ſea to move or flow with great rapidity, and the ſwiftneſs of Samudra is proverbial. Perhaps, however, the alluſion may be to its momentum, rather than its velocity. This perſonification of the ſea is frequently mentioned in Hindoo books. Nadit is another name of Samudra, and Sagara; under which latter article of our work, and under SOMA, farther mention will be found on the ſubject of this. We have never ſeen any picture or deſcription of the perſon or attributes of Samudra, and know not therefore how he is repreſented in thoſe particulars. His proverbial ſwiftneſs occurs in a tranſlation from the Ramayana, under our article TARA.

SAMUEL, in *Scripture Hiſtory*, an eminent prophet and judge of Iſrael for ſeveral years, was the ſon of Elkanah and Hannah, of the tribe of Levi, and of the family of Kohath. (1 Sam. i. 1, 2, 3, &c. 1 Chron. vi. 23.) Whether Samuel was a prieſt or not has been the ſubject of diſpute. By thoſe who maintain the negative, it is alleged that he was not of the race of Aaron, and that other perſons who were not prieſts wore the ephod, and offered ſacrifices in extraordinary caſes, and conſecrated kings. After the death of Eli, the high-prieſt, Samuel was acknowledged as judge and governor of all Iſrael. He commenced the exerciſe of his judicial office at about 40 years of age, and maintained it during his whole life. Towards the cloſe of his life, he appointed his ſons to the ſubordinate office of judges; but as they abuſed their truſt, the elders of Iſrael applied to Samuel, requeſting him to appoint a king over them: and ſoon after Saul was inducted into this office, during whoſe reign he retained a conſiderable degree of authority, both with reſpect to Saul himſelf, and to all the people. The laſt authoritative act which he ſeems to have performed was that of anointing David, and inveſting him with the royal authority in the place of Saul. After this act he retired to Ramah, and dwelt there during the remainder of his life, aſſociating with the prophets, who formed a kind of community under his conduct. Samuel died at the age of 98 years, about two years before Saul, A.M. 2947, B.C. 1057; and was buried at Ramah. (1 Sam. xxv. 1.) The body of Samuel is ſaid to have been tranſported from Paleſtine to Conſtantinople, in the time of the emperor Arcadius. The Roman martyrology places his feſtival on the 20th of Auguſt. Concerning the ſtory of the witch of Endor, to whom Saul applied in order to know the event of a war in which he was engaged, by raiſing the ghoſt of Samuel, we refer to the article WITCH *of Endor*.

To Samuel have been aſcribed the book of Judges, that of Ruth, and the firſt of the two books that bear his name. It is very probable that he compoſed the 24 firſt chapters of the firſt book of Samuel, as they contain nothing but what he might have written, and in which he had not a great ſhare. Nevertheleſs, in theſe 24 chapters there are ſome additions, which it is likely were inſerted after his death. The two firſt books of Kings bear the name of the books of Samuel; but it muſt be obſerved that he could not have been the author of the ſecond of theſe books, which contains an account of tranſactions that happened after his death; nor could he have written the latter part of the firſt, ſince his death is mentioned in the 25th chapter. It has been ſuppoſed, that as Samuel was the author of the firſt 24 chapters, the work was finiſhed by Gad and Nathan. This is the opinion of the Talmudiſts, which ſeems to be founded on 1 Chron. xxix. 29. But in order to juſtify this opinion, it ought to be proved, that the books of Samuel, Gad, and Nathan, mentioned in this paſſage, were the ſame with that of the firſt book of Kings: whereas theſe were three diſtinct books, which contained the life and actions of theſe three prophets. Diodorus of Tarſus, Theodoret, St. Athanaſius, and St. Gregory, have obſerved, that the four books of Kings are only an hiſtorical abridgment of ſeveral books or memoirs of the prophets, which are cited in ſeveral places of them. Grotius aſcribes this abridgment to Jeremiah, ſome to Iſaiah, and moſt to Ezra. Dupin has mentioned ſeveral circumſtances which ſhew that the books of Samuel, or the two firſt books of Kings, are neither Samuel's, nor Gad's, nor Nathan's. As for the two laſt books, which are thoſe only called by the Hebrews Malachim or Kings, ſince they contain the hiſtory of the kings of Iſrael and Judah, down to the captivity, which is related in the laſt chapter, they could not have been finiſhed till after that time. Several paſſages which ſhew that the kingdom of Judah was ſtill in being, ſerve to render it probable, that this hiſtory was compoſed out of ſeveral memoirs, or rather, that he who digeſted and wrote it, has inſerted thoſe things in it which he found in the more ancient records without changing the forms of expreſſion. The Talmudiſts attribute this work to Jeremiah, others to Iſaiah, but the generality to Ezra. The firſt book of Samuel, or of the four books of Kings, comprehends the events that occurred under the government of Eli the high-prieſt, Samuel the prophet, and the reign of Saul. The ſecond is the hiſtory of David's government. The two laſt books of Kings contain the hiſtory of Solomon, and afterwards the reigns of the ſeveral kings of Iſrael and Judah down to the deſtruction of Iſrael and the captivity of Judah. The four books contain the hiſtory of almoſt 600 years.

Samuel began the chain of the prophets, which was never broken from his time to that of Zechariah and Malachi. (Acts, iii. 24. Beſides the true hiſtory of Samuel, there are ſeveral traditions concerning this prophet among the Orientals. See D'Herbelot, Bibl. Orient. p. 735 and 1021. See alſo the Hiſtory of the Afghans in the ſecond volume of the Aſiatic Reſearches, p. 119, &c. Dupin's Canon.

SAMULCOTTA, in *Geography*, a town of Hindooſtan, in the circar of Rajamundry; 24 miles E. of Rajamundry.

SAMULIS, in *Ancient Geography*, a town of Aſia, in Cœleſyria. Ptolemy.

SAMUMA, in *Geography*, a town of Hindooſtan, in Oude; 15 miles N.E. of Goorackpour.

SAMUND, a town of the Middle Mark of Brandenburg; 4 miles S. of Potzdam.

SAMUR, a river of Perſia, in the province of Schirvan, anciently "Albanus," which riſes in the mountains of Laſgeſtan, and flows into the Caſpian. It is not above three feet in depth, but exceeds 300 in breadth; and its waters are obſerved to increaſe in the day, and diminiſh in the night.

SAMURA, a town of Perſia, in the province of Schirvan, on the Caſpian ſea ; 15 miles S. of Derbend.

SAMYDA, in *Botany*, σαμυδα, an ancient Greek name, ſuppoſed to belong to the Birch ; but its etymology, and its application to the preſent, chiefly American, genus, have not been explained.—Linn. Gen. 216. Schreb. 298. Willd. Sp. Pl. v. 2. 624. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 3. 60. Juſſ. 439. Lamarck Illuſtr. t. 355. Gærtn. Suppl. t. 224. (Guidonia ; Plum. Gen. 4. t. 24.)—Claſs and order, *Decandria Monogynia*. Nat. Ord. uncertain. Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, coloured on the inner ſide ; tube bell-ſhaped, with ten furrows ; limb in five ovate, flat, obtuſe, wide-ſpreading ſegments, two of them tipped with a point. *Cor.* Petals none. Nectary of one leaf, conical, abrupt, about as long as the calyx, and inſerted into the baſe of its limb, marked with from eight to eighteen furrows, its blunt orifice being furniſhed with as many teeth. *Stam.* Filaments none ; anthers oblong, erect, ſmall, as many as the teeth of the nectary, and inſerted upon them. *Piſt.* Germen ſuperior, ovate ; ſtyle awl-ſhaped, erect, the length of the nectary ; ſtigma capitate, obtuſe. *Peric.* Capſule roundiſh, furrowed, thick, coriaceous, of one cell, and four or five valves. *Seeds* numerous, nearly ovate, obtuſe, perforated at the baſe, attached to the valves, each inſerted with a pulpy tunic.

Eſſ. Ch. Calyx deeply five-cleft, coloured. Petals none. Nectary bell-ſhaped, bearing the ſtamens. Capſule ſuperior, of one cell, with four or five valves. Seeds with a pulpy tunic.

1. S. *nitida*. Gloſſy Samyda. Linn. Sp. Pl. 557. Willd. n. 1. Ait. n. 1. (S. n. 1 ; Browne Jam. 217. t. 23. f. 3, Guilandina.)—Stamens eight or ten. Leaves heart-ſhaped, ſmooth.—Native of Jamaica. Introduced at Kew in 1793, but has not yet flowered.

2. S. *macrophylla*. Broad-leaved Samyda. Willd. n. 2. —" Stamens eight. Leaves ovate, acute, ſmooth ; the origin of their veins villous at the under ſide. Corymb terminal."—Native of the Eaſt Indies. *Branches* round, ſmooth, ſcarred, yellowiſh. *Leaves* often ſix inches, or more, in length, obſcurely crenate, their ribs villous. *Flowers* ſmall, in a ſtalked, nearly terminal, corymb. *Willd.*

3. S. *multiflora*. Many-flowered Samyda. Cavan. Ic. v. 1. 48. t. 67. Willd. n. 3.—Stamens eight. Leaves elliptic-oblong, toothed ; tapering at each end ; downy beneath. Stalks axillary, aggregate, ſingle-flowered.—Native of Hiſpaniola. *Leaves* alternate, pointed, about two inches long and one broad. *Flowers* ſmall.

4. S. *villoſa*. Villous Samyda. Swartz Ind. Occ. v. 2. 758. Willd. n. 4.—Stamens ten. Leaves ovate, pointed, downy, with ſhallow ſerratures ; oblique at the baſe ; villous beneath. Flower-ſtalks axillary, ſolitary.—Native of mountains in Jamaica, flowering in the ſpring. A branched *ſhrub*, ſix feet high, with ſpreading downy *branches*. *Leaves* three inches long, alternate, on ſhort downy ſtalks. *Flowers* twice or thrice the ſize of the laſt, white, downy. Pulp of the *ſeeds* red or ſcarlet.

5. S. *glabrata*. Smooth Samyda. Swartz Ind. Occ. v. 2. 760. Willd. n. 5.—Stamens ten. Leaves elliptic-lanceolate, obtuſe, ſmooth and ſhining, nearly entire. Flower-ſtalks axillary, ſolitary.—Native of lofty mountains in the ſouthern part of Jamaica, flowering in October and November. A nearly ſmooth, branched, ſpreading *ſhrub*, ten or twelve feet high. *Leaves* ſcarcely an inch and a half long, on ſhortiſh ſtalks. *Flowers* white, nearly ſeſſile, almoſt as large as thoſe of *S. villoſa* ; the tube of their *calyx* longer than the limb.

6. S. *ſpineſcens*. Thorny Samyda. Swartz Ind. Occ. v. 2. 762. Willd. n. 6.—Flowers terminal. Stamens ten. Leaves lanceolate-ovate, obtuſe, crenate, ſmooth. Branches ſpreading, at length ſpinous. Calyx divided to the baſe.—Native of Hiſpaniola, flowering in December and January. A *ſhrub*, with horizontal lateral *branches*, whoſe points become ſtrong thorns. *Leaves* two or three inches in length, tapering at the baſe, ſtalked, chiefly about the ends of the ſhoots. *Flowers* pale, rather ſmall, in ſhort, denſe, downy, terminal *cluſters*, or *ſpikes*.

7. S. *pubeſcens*. Downy Samyda. Linn. Sp. Pl. 557. Willd. n. 7.—Stamens twelve. Leaves ovate ; downy beneath.—Native of South America. An obſcure ſpecies, unknown to us, as well as to Dr. Swartz. See his Fl. Ind. Occ. v. 2. 759.

8. S. *ſerrulata*. Elm-leaved Samyda. Linn. Sp. Pl. 558. Willd. n. 8. Ait. n. 2. Jacq. Coll. v. 2. 328. t. 17. f. 1. (Guidonia ulmi foliis, flore niveo ; Plum. Gen. 4.)—Stamens eighteen. Flowers ſolitary. Leaves ovate-oblong, downy, finely ſerrated.—Native of the Weſt Indies. Cultivated by Sherard at Eltham in 1723, according to Hort. Kew. It flowers in the ſtove about July. The whole plant is finely downy, eſpecially the backs of the *leaves*, which are veiny, rather acute ; on ſhort, thick, villous *ſtalks*. *Flowers* white, large, axillary, on ſhort thick *ſtalks*, ſolitary, not aggregate.

9. S. *roſea*. Roſe-coloured Samyda. Sims in Curt. Mag. t. 550. Ait. n. 3. (S. ferrulata ; Andr. Repoſ. t. 202. Guidonia ulmi foliis, flore roſeo ; Plum. Gen. 4.) —Stamens twelve or more. Flowers aggregate. Leaves oblong, very obtuſe, finely ſerrated, downy on both ſides. —Native of the Weſt Indies, from whence it was ſent to England by the late Mr. Alexander Anderſon. This ſhrub blooms copiouſly in the ſtove during the ſummer months. The drooping *branches* bear many axillary *flowers*, which are but half the ſize of the laſt, and red on both ſides, ſeveral of them growing together, on ſhort ſimple *ſtalks*, from the boſom of each leaf. We are convinced that Linnæus confounded two diſtinct plants of Plumier, under his *S. ſerrulata*.

We think it ſafeſt to omit Willdenow's *S. polyandra*, n. 9, which is *Meliſtaurum diſtichum* of Forſter, Nov. Gen. t. 72. There is much confuſion between the preſent genus, and Juſſieu's *Anavinga*, which is *Caſearia* of Jacquin, and whoſe fruit is alſo figured in Gærtner's Suppl. t. 224. Theſe genera are perhaps diſtinct, but we have not materials to define the limits of each.

SAMYDACA, in *Ancient Geography*, a town of Aſia, in Carmania. Steph. Byz.

SAN, in *Geography*, a river of Poland, which runs into the Viſtula, at Sandomirz.—Alſo, a river of China, which riſes in the frontiers of Tartary, N. lat. 40° 20′. E. long. 117° 14′ ; and runs into the gulf Leao-tong, N. lat. 39° 9′. E. long. 117° 28′.

SAN, or *Tanah*, a town of Egypt, on a canal which runs from the Nile into the lake Menzaleh, anciently called " Tanais ;" 26 miles E. of Manſora. N. lat. 30° 55′. E. long. 32° 7′.

SAN *Blas*, a town of the iſland of Cuba ; 59 miles E. of Havanna.

SAN *Carlos*, a town of South America, in the province of Venezuela, which owes its exiſtence to the firſt miſſionaries of this province, and its increaſe and beauty to the activity of its inhabitants. Its white population is moſtly compoſed of Spaniards from the Canaries, who by their diſpoſition to labour, excite the emulation of the Creoles. Live ſtock form the great maſs of the riches of its inhabitants; cattle, horſes, and mules, being in great abundance. Indigo and coffee are almoſt the only articles of cultivation. The quality of the ſoil is ſaid to give an exquiſite flavour to the fruits, particularly to the oranges, which are celebrated throughout the whole province. The city is large, handſome, and well divided. They reckoned 9500 inhabitants. The heat of this place is very great, and would be intolerable, if it were not counteracted by the violence of the north-eaſt wind. San Carlos is in 9° 20′ of N. lat.; 60° N.W. of Caraccas, 28 leagues S.S.W. of Valencia, and 20 leagues from St. Philip. Depons.

San *Diego*, a town of the iſland of Cuba; 50 miles W.S.W. of Havanna.

San *Felice*, a town of Spain, in the province of Leon; 12 miles N.N.W. of Civdad Rodrigo.

San *Felipe*. See St. *Felipe*.

San *Fernando of Apura*, a town of South America, in the government of Varinas, ſituated on the right bank of the river Apura. The property of almoſt all the inhabitants conſiſts in common fields, and breeding-farms for cattle and mules. They cultivate very few articles. The climate is hot, but healthy; the water is excellent. The city, which is not large, is tolerably well built. The population amounts to almoſt 6000 ſouls.

San *Giuliano*. See Giuliano.

San *Jayne*, a city of South America, in the government of Varinas; ſituated on a hillock of ſand, at the confluence of ſeveral rivers which empty themſelves into the Apura, about 12 leagues after their union. The inhabitants are for three months ſo environed by water, that they can neither leave nor return to their houſes without canoes. This city, conſiſting of mean edifices on a ſandy and dry ſoil, lies in N. lat. 7° 50′; 75 leagues to the S. of Caraccas.

San *Juan*, a town of the iſland of Cuba; 15 miles S.S.W. of Havanna.—Alſo, a town of the iſland of Cuba; 42 miles W.N.W. of St. Jago.—Alſo, a town of the above iſland; 15 miles S.W. of Villa del Principe.—Alſo, a town of Spain, in the province of Seville; 40 miles W. of Seville. See Juan.

San *Lorenzo*, a town of the iſland of Cuba; 105 miles S.W. of Havanna.

San *Luis*, a town of the iſland of Cuba; 25 miles S. of Spiritu Santo.

San *Marco*, a town of the iſland of Cuba; 70 miles N.W. of Villa del Principe.

San *Miguel*, a town of the iſland of Cuba; 50 miles S.W. of Havanna.—Alſo, a town of the ſame iſland; 40 miles N. of Trinidad. See St. *Miguel*, &c.

San *Paloi*, a ſmall iſland near the weſt coaſt of the iſland of Luçon. N. lat. 14° 45′. E. long. 120° 10′.

San *Pedro*, a town of Spain, in Old Caſtile; 15 miles N.E. of Soria.—Alſo, a town of the iſland of Cuba; 35 miles S. of Havanna.—Alſo, a town of Spain, in the province of Biſcay; 20 miles S. of Santander.—Alſo, a town of the iſland of Cuba; 65 miles S.W. of Havanna.

San *Pedro de Mayolon*, a town of the iſland of Cuba; 62 miles N. of Trinidad.

San *Pedro d'Arlanza*, a town of Spain, in Old Caſtile; 40 miles E.S.E. of Burgos.

San *Roque*, a town of Spain, in Biſcay; 16 miles S.S.E. of Santander.—Alſo, a town of Spain, in the province of Seville; 3 miles N. of Gibraltar.

San Martini, Giuseppe, in *Biography*. See Martini *of London*.

San Martini, Giovanni. See Martini *of Milan*.

SANA, in *Ancient Geography*, a town of Aſia, in the Greater Armenia.

Sana, in *Geography*, a river of Boſnia, which runs into the river Unna, oppoſite to Novi.

Sana, a city of Arabia, in the province of Yemen, ſituated at the foot of mount Nikkum, on which are ſtill viſible the ruins of a caſtle, which the Arabs ſuppoſe to have been built by Shem. On one ſide is the caſtle, and on the other ſide a rivulet; and near it is the "Buſtan el Metwokkel," a ſpacious garden, which was laid out by Imam Metwokkel, and has been embelliſhed, ſays Niebuhr, by the reigning Imam. The walls of the city, conſtructed of bricks, exclude this garden, which is incloſed within a wall of its own. The city, properly ſo called, is not very extenſive; as a perſon may walk round it in an hour. The city-gates are ſeven. Sana has a number of moſques, ſome of which have been built by Turkiſh pachas; and as gardens occupy a great part of the ſpace within the walls, it appears to be more populous than it is. It has only twelve public baths, but many noble palaces, built by the Imams, ſeveral of which belong to the royal family, who are very numerous. The materials of theſe palaces, which are conſtructed in a ſtyle of architecture different from ours, are burnt bricks or hewn ſtones; but the houſes of the common people are built of bricks that have been dried in the ſun. Glaſs windows are very rare. Moſt of the houſes, inſtead of windows, have ſhutters, which are opened in fine weather, and ſhut when it is foul. In this caſe, the houſe is lighted by a round wicket, filled with a piece of Muſcovy glaſs: ſome of the Arabians uſe ſmall panes of ſtained glaſs from Venice. At Sana, as well as other cities of the Eaſt, are great ſimſeras or caravanſeras for merchants and travellers. Each different commodity is ſold in a ſeparate market: in the market for bread, none but women are to be ſeen, and their little ſhops are portable. The ſeveral claſſes of mechanics work in particular quarters in the open ſtreets. Writers go about with their deſks, and make out brieves, copy-books, and inſtruct ſcholars in the art of writing; all which is done at the ſame time. There is one market in which old clothes are taken for new. Wood for fuel is very ſcarce: pit-coal and peat are uſed for this purpoſe. Fruits are very plenteous at Sana. Here are more than twenty different ſpecies of grapes, ſome of which the Arabs preſerve by hanging them up in their cellars throughout the whole year; and ſome are made into wine, and others are dried, ſo that the exportation of raiſins from Sana is very conſiderable. One ſort of theſe grapes has no ſtones. In the caſtle are two palaces, the mint, and a range of priſons for perſons of different ranks. The reigning Imam reſides in the city, but ſeveral princes of the blood royal live in the caſtle. The battery is the moſt elevated place; and upon this are ſeven ſmall cannons, partly buried in the ſand, and partly ſet upon broken carriages. Theſe, with ſix others near the gates, which are fired to announce the return of the different feſtivals, are the whole artillery of the capital of Yemen.

The ſuburb of "Bir el Aſſab" is nearly adjoining to the city, on the eaſt ſide: the houſes of this village are ſcattered through the gardens, along the bank of a ſmall river. Two leagues northward from Sana is a plain, named "Rodda," overſpread with gardens, and watered by a number of rivulets. By means of aqueducts from mount Nikkum, the town and caſtle of Sana are, at all times, ſupplied with abundance of excellent freſh water. Jews are not permitted to live in the city of Sana; but they live by themſelves in a village, named "Kaa el Ihud," near Bir el Aſſab. Their number amounts to 2000. In Yemen, however, they are treated more contemptuouſly than in Turkey; yet the beſt artiſans are Jews, particularly potters and goldſmiths, who come into the city, to work in their little ſhops by day, and retire at night to their village. Theſe Jews carry on a conſiderable trade. The diſgrace of one of their moſt conſiderable merchants, named Oroeki, who had gained the favour of two ſucceſſive Imams, drew upon the other Jews a ſevere perſecution; ſo that the government ordered 14 ſynagogues, which the Jews had at Sana, to be demoliſhed; and all the houſes in their village above 14 fathoms in height were deſtroyed, and they were forbidden to raiſe any of their buildings above this height for the future. The Banians in Sana are reckoned to be about 125: they pay 300 crowns a month for permiſſion to live in the city. The heirs of a deceaſed Banian are obliged to pay from 40 to 50 crowns; and if the deceaſed leaves no near relations in Yemen, his whole property devolves to the Imam. The Imam goes in great pomp, attended by a numerous proceſſion, to the moſque every Friday; and during divine ſervice, the city-gates are ſhut. The Imam treats the ſtrangers who viſit Sana with great hoſpitality, which is ſometimes abuſed by the intereſted and ſelfiſh. He ſent to Niebuhr and each of his companions a ſuit of clothes, with a letter to the dola of Mokha to pay them 200 crowns as a farewell preſent. Their clothes were like thoſe worn by the Arabs of diſtinction through Yemen. They wear the ſhirt over wide drawers of cotton cloth. The "jambea," a ſort of crooked cutlaſs, hangs by a broad girdle; and a veſt with ſtraight ſleeves is covered by a flowing gown. To ſtockings the Arabs are ſtrangers: they only wear on their feet and legs a ſort of half-boots or ſlippers. The military force of Sana conſiſts ordinarily of 4000 infantry and 1000 cavalry. Sana is 125 miles N.N.E. from Mocha. N. lat. 15° 20′. E. long. 44° 9′. Niebuhr's Travels. See Yemen.

Sana, or *Sann*. See Sanen.

Sana, or *Zana*, a town of South America, in Peru, and capital of a juriſdiction, in the biſhopric of Truxillo. The juriſdiction extends about 75 miles along the ſea-coaſt. The ſoil is level and fertile; but the heat is ſometimes almoſt inſupportable. The town is ſituated in a pleaſant valley, fertile in fruit and corn, and adorned with the moſt beautiful flowers, for which reaſon it has been ſometimes called "Mirafloris:" it is, however, in a ſtate of decay; 80 miles N. of Truxillo.

SANADA, a town of Japan, in the iſland of Niphon; 80 miles N. of Jedo.

SANADON, Noel-Etienne, in *Biography*, was born at Rouen in 1676. He was early initiated into the ſociety of the Jeſuits, of which he afterwards became a profeſſor at Caen, and other places. After nine years he was removed to the college at Paris, where he filled the rhetorical chair for ſix years; and in the courſe of that period he publiſhed a collection of Latin poems, by which he acquired conſiderable reputation. The want of health cauſed him to quit the metropolis, and he went to Tours, where he acted as prefect of the claſſes. In 1726 he was appointed preceptor to the prince of Conti; in 1728 he became librarian to the college of Louis le Grand; and in 1733 he died regretted, as well on account of his literary talents as his amiable qualities in private life. He was eſteemed one of the moſt elegant Latin poets of his time, and in that language compoſed odes, epigrams, eulogies, and various other pieces, which, after his death, were collected and publiſhed together. A collection of his diſcourſes, on various occaſions, was alſo publiſhed, which diſplay his powers as an orator. One of his firſt publications was a tranſlation of the "Pervigilium Veneris," with notes. But he is chiefly known by his verſion of the works of Horace, entitled "Traduction des Œuvres d'Horace avec des Remarques," which firſt appeared in 1727, Paris, 2 vols. 4to. It is a proſe tranſlation, but is more ornamented and poetical than that of Dacier and others. He printed with his own tranſlation the original Latin, in which he took great liberties in his various readings, and in changing the order of the poems; but his moſt noted effort of ingenuity was the "Carmen Seculare," which from a number of detached odes he formed into a grand connected piece of lyric compoſition. In his various alterations he frequently makes remarks, that diſplay much taſte and critical ſagacity; but he is apt to indulge his fancy in purſuing ſuppoſed allegories and alluſions to the events of the Auguſtan times.

SANAFIR, in *Geography*, a ſmall iſland in the Red ſea; 90 miles S.E. of Tor. N. lat. 27° 45′. E. long. 45° 0′.

SANAG, a town on the weſt coaſt of the iſland of Lombok. S. lat. 8° 27′. E. long. 115° 15′.

SANAGA, a town of Walachia; 50 miles N.N.E. of Buchareſt.

SANAIS, in *Ancient Geography*, a town of Aſia, in the interior of Media.

SANAISCHARA, in *Hindoo Mythology*, a name of Sani, the Hindoo regent of the planet Saturn: the name means *ſlow-moving*. See Sani.

SANAKA, one of the earlieſt productions of Brahma for the purpoſe of peopling the world. On this occaſion he is ſaid to have produced four perſons, *viz.* Sanaka, Sananda, Sanatana, and Sanatakumara; who, proving refractory, cauſed their parent to mourn. To comfort him, Siva iſſued from a fold in his forehead, and endowing Brahma with additional ſtrength, he produced other beings, as related under the articles Rishi and Rudra. Theſe fables have probably ſome alluſions to coſmogony, not eaſily explained nor worth explaining. The four perſons named above have ſometimes three others aſſociated with them, and are all called children of Brahma: ſometimes they are called Sanakadika, or the children of Sanaka. The names of the other three are Jata, Vodu, and Panchaſicha: but none of them are mentioned very often in Hindoo writings.

SANALIA, in *Surgery*, a name given by ſome authors to thoſe tumours, commonly called *meliceres*.

SANAMUNDA, in *Botany*, a name applied by Cluſius and other old botaniſts to ſeveral ſhrubs of the *Daphne*, *Paſſerina*, and ſimilar genera, which ſeems to allude to their purgative and ſcouring qualites. Theſe are, as phyſicians ſay, of the moſt heroic kind, and would probably require much heroiſm in the patient who ſhould be their unfortunate victim.

SANAN, in *Geography*, a town of Arabia, in Yemen; 36 miles N.N.W. of Abu-Ariſch.

SANAOS, in *Ancient Geography*, a town of Aſia Minor, in the Greater Phrygia. Strabo.

SANAPARA, in *Geography*, a town of Bengal; 20 miles N. of Mahmudpour.

SANARICA, a town of Naples, in the province of Otranto; 12 miles N.N.E. of Cervera.

SANASBYGOTTA, a town of Bengal, and chief town of the circar of Bootiſhazary; 68 miles N.E. of Purneah. N. lat. 26° 38′. E. long. 88° 28′.

SANASHYGOTTA, a town of Morung; 75 miles E. of Amerpour.

SANASHYGUNGE, a town of Bengal; 86 miles N.N.W. of Dacca.—Alſo, a town of Bengal; 56 miles N.E. of Nattore.

SANATES, among the Romans, an appellation given to thoſe people in the neighbourhood of Rome, who having revolted, ſoon ſubmitted themſelves again; on which account they had equal privileges with the other citizens, there being a law in the Twelve Tables ordaining *ut idem juris ſanatibus quod foretibus ſit*.

SANATODOS, in *Natural Hiſtory*, a name given by the people of Sicily to the ſpungy excreſcence found on the ſtalk of the dog-roſe, and more uſually called the *bedeguar*. This they greatly eſteem in all venomous bites, and uſe it in fine powder, both internally and externally, in many parts of that country. They uſe no other remedy for the bite of a viper: the wound is ſcarified, and ſome of the powder is ſprinkled on, and large doſes of it are alſo given internally in ſtrong wine.

In the bite of a mad dog they apply it to the wound, ſoftened into a ſort of poultice with oil, or with ſtrong wine; and they give it in repeated doſes internally in broths, and other weak fluids. They give it alſo in continual fevers, and in many other caſes, particularly in the colic. It is ſaid, that a ſingle doſe of a drachm of it in red wine, takes off all the pain of the colic in an hour.

There ſeems a very old opinion on the ſide of this medicine, in the cure of a bite from a mad dog; for Pliny tells us, that the root of the wild-roſe, from the ſtalks of which this ſubſtance grows, was revealed in a dream for the curing of this terrible diſeaſe. People, who have found out ſome one virtue in a plant, are generally ready to attribute a great many more to it; but though too much may be ſaid in praiſe of the virtues of this ſubſtance by the people of that part of the world, it is well worth trying whether it does not contain ſome of them, as it is a thing very common among us, and eaſily had in any quantities.

SANAUJA, in *Geography*, a town of Spain, in Catalonia; 12 miles N.N.E. of Cervera.

SAN BENITO, or SACO BENITO. See SAMARRA.

SANBORNTOWN, in *Geography*, a townſhip of America, in Stafford county, New Hampſhire, at the confluence of Winnipiſiogee and Pemigewaſſet rivers; incorporated in 1770, and containing 2884 inhabitants. Some pieces of baked earthenware have been found in this place, from which it is ſuppoſed that the Indians had acquired the potter's art; 45 miles N.W. of Portſmouth.

SANCAHA, a town of Abyſſinia; 20 miles N.W. of Tcherkin.

SANCATTY, a town of Hindooſtan, in Dowlatabad; 23 miles N. of Beder.—Alſo, a town of Hindooſtan, in Dowlatabad; 30 miles N.N.W. of Beder.

SANCERGUES, a town of France, in the department of the Cher, and chief place of a canton, in the diſtrict of Sancerre; 9 miles S. of Sancerre. The place contains 560, and the canton 8411 inhabitants, on a territory of 377½ kiliometres, in 19 communes.

SANCERRE, a town of France, and principal place of a diſtrict, in the department of the Cher; 12 miles N.E. of Bourges. The place contains 2511, and the canton 14,740 inhabitants, on a territory of 272½ kiliometres, in 18 communes. N. lat. 47° 20′. E. long. 2° 55′.

SANCEY *l'Egliſe*, a town of France, in the department of the Doubs; 9 miles W. of St. Hypolite.

SANCHEVILLE, a town of France, in the department of the Eure and Loire; 12 miles N.W. of Chateaudun.

SANCHEZ, FRANÇOIS, or *Sanctius*, in *Biography*, was a native of Las Brocas, in Spain, and has been dignified by his own countrymen with the pompous title of "le père de la langue Latine, et le docteur de tous les gens de lettres." He wrote, 1. An excellent treatiſe, entitled "Minervæ, aut de cauſis Linguæ Latinæ," which was publiſhed at Amſterdam in 1714. 2. The Art of Speaking, and the Method of Tranſlating. And 3. Several other learned pieces on grammar. He died in the year 1600, in his 77th year. This author is to be diſtinguiſhed from a phyſician of the ſame name, who died at Toulouſe in 1632, who was a Chriſtian, though he had been born of and educated by Jewiſh parents. His works were collected under the title of "Opera Medica: his juncti ſunt tractatus quidam philoſophici non inſubtiles." Theſe were printed in 1636.

SANCHEZ. See SANCTIUS.

SANCHONIATHON, an ancient Phœnician hiſtorian, was a native of Berytus. It is not at all aſcertained at what time he flouriſhed. He is however commonly referred to the age of the Trojan war. He is particularly known for a hiſtory which he compoſed in the Phœnician language, partly from the records of cities, and partly from the regiſters and inſcriptions preſerved in the temples of Phœnicia and Egypt. It was tranſlated into the Greek language by Philo of Byblos, in the time of Adrian, of which verſion there are ſome fragments in Porphyry, "De Abſtinentia," &c. Dodwell, in an expreſs treatiſe, has attempted to ſhew that the hiſtory of Sanchoniathon never exiſted, and Dupin has attempted entirely to deſtroy the credit of the ſuppoſed fragments; but other learned men conſider them as authentic. According to Suidas, Sanchoniathon wrote a treatiſe on the religious inſtitutions of the Phœnicians; another on the phyſiology of Hermes; and a third on the Egyptian theology.

SAN-CHOUI, in *Geography*, a town of China, of the third rank, in Chen-ſi; 15 miles N.E. of Ping.—Alſo, a town of the third rank, in Quang-tong; 25 miles W. of Canton.

SAN-CHOUI *Hotun*, a town of Corea; 570 miles E. of Peking. N. lat. 41° 9′. E. long. 226° 52′.

SANCIAN, or CHANG-TCHUEN-CHAN, an iſland in the Eaſt Indian ocean, near the coaſt of China, which is the burial-place of the famous Francis Xavier. The five villages contained in the iſland are chiefly inhabited by fiſhermen; 40 miles S.W. of Macao.

SANCOINS, a town of France, in the department of the Cher, and chief place of a canton, in the diſtrict of St. Amand; 13 miles S.W. of Nevers. The place contains 1400, and the canton 7001 inhabitants, on a territory of 385 kiliometres, in ten communes. N. lat. 46° 50′. E. long. 3° 0′.

SANCOL, a town on the E. coaſt of Mindanao. N. lat. 6° 37′. E. long. 126° 15′.

SANCORI. See SANGORI.

SANCOTY HEAD, the E. point of Nantucket iſland, on the coaſt of Maſſachuſetts. N. lat. 41° 15′. W. long. 69° 58′.

SANCROFT, WILLIAM, in *Biography*, an eminent Engliſh prelate of the 17th century, was born at Freſingfield, in Suffolk, in the year 1616. He was initiated into the elements of grammar learning at Bury St. Edmund's, and at the age of eighteen he was entered of Emanuel college, Cambridge, where he ſoon diſtinguiſhed himſelf in various branches of literature. He took his degrees, and was in 1642 choſen fellow of his college. This ſituation he retained till the year 1649, when, refuſing to conform to the wiſhes of the governing powers, he was ejected, upon which he withdrew to the continent, and travelled a conſiderable time in France and Italy. He was at Rome in 1660; but when meaſures were ripe for the reſtoration of Charles II. he returned to England, and was choſen one of the univerſity preachers at Cambridge. He was ſhortly after appointed chaplain to the biſhop of Durham, who preſented him to the rectory of Houghton-le-Spring, as well as a prebend in his cathedral church. In 1661 he was employed in making alterations

alterations and emendations of the liturgy, and in the following year he was created doctor of divinity at Cambridge, and elected maſter of Emanuel college. In 1664 he was promoted to the deanery of York, which he held only ten months, and is ſaid to have expended upon the buildings two hundred pounds more than he received for the duties of his office. At the cloſe of the year he was removed to the deanery of St. Paul's, which induced him to reſign his rectory and the maſterſhip of Emanuel college. One of the firſt objects of his attention was the repair of the cathedral, which had ſuffered great dilapidations from the fanatics during the civil wars; and afterwards he was occupied upon the means of rebuilding that edifice, after it had been deſtroyed by the dreadful fire of London. In 1668 the king preſented him to the archdeaconry of Canterbury, which he reſigned after he had held it two years; but being choſen prolocutor of the lower houſe of convocation, he was, while in that ſtation, unexpectedly raiſed to the archiepiſcopal ſee of Canterbury. This church preferment he obtained from his known attachment to high principles with regard to the royal prerogative; but it is probable that in the event he diſappointed the king and his brother, inaſmuch as his integrity would not allow him to ſacrifice his religion to pleaſe his patron. He is ſaid to have attended Charles II. on his death-bed, and to have ſpoken to the dying king with a degree of freedom that was ſcarcely to be expected. In 1686 he was nominated the firſt in king James's commiſſion for eccleſiaſtical affairs; but he refuſed to act under it, though he did not feel ſtrong enough to remonſtrate againſt its illegality. In a ſhort time after this, he afforded evidence of his zeal to counteract the king's inſidious deſigns for promoting the intereſts of popery, by refuſing, in his capacity of one of the governors of the Charter-houſe, to admit as penſioner in that hoſpital a papiſt, though ſtrongly recommended by the court. In 1688 he ſhewed his reſolution, by refuſing, with ſix other biſhops, to order the reading of the king's declaration of indulgence, and by ſigning, in conjunction with them, a petition to his majeſty, containing their reaſons for reſiſting the authority which he aſſumed. For this petition, as we have before ſeen, (ſee JAMES,) they were committed to the Tower, and tried at the bar of the king's bench; but were acquitted, to the great joy of the people at large, though to the diſappointment and mortification of the court. During the ſame year, the archbiſhop, in the circular letter which he ſent to the clergy of his dioceſe, exhorted them to cultivate a good correſpondence with the Proteſtant diſſenters, and he endeavoured to promote a plan which might, he thought, induce them to join the national church. In the autumn, when James had received intelligence of the deſigns of the prince of Orange to bring an army into England in ſupport of the liberties of the people, he ſent for archbiſhop Sancroft, and the other biſhops who were in London, to aſk their advice in that emergency; theſe plainly told him, that he muſt inſtantly ſhew a diſpoſition to a complete change in the meaſures of government, by redreſſing the grievances of the nation, and by calling a free and regular parliament. The king was, however, ſtill obſtinate, and in a few days he ſent for the archbiſhop, deſiring him to ſign a declaration of abhorrence of the prince of Orange's undertaking, which, however, he declined, and on the withdrawing of the ſovereign, Dr. Sancroft concurred with the lords ſpiritual and temporal, who aſſembled at Guildhall on the 11th of December, in ſigning a declaration to the prince of Orange for a free parliament, the ſecurity of the laws, liberties and properties of the people, and a due indulgence to Proteſtant diſſenters. Archbiſhop Sancroft had thus far given his countenance and ſupport to the meaſures neceſſary for oppoſing the ſteps taken by James to eſtabliſh arbitrary power, and the Popiſh religion; but when the church was ſecure, he ſeems to have been alarmed at the part which he had taken, and reſolved to wait the conſequences in inactivity and ſilence. For this behaviour he is condemned by Burnet, who denominates him "a poor-ſpirited and fearful man, who acted a very mean part in all this great tranſaction." His conduct certainly juſtifies the opprobrium of the hiſtorian, who in the caſe of the archbiſhop can ſcarcely be thought an impartial writer, as Sancroft had refuſed to conſecrate Burnet, becauſe he had been ſo zealous in behalf of the revolution.

After the convention had declared the throne vacant, and the government was ſettled upon king William, Sancroft refuſed ſubmiſſion to the new ſettlement of the crown. Accordingly, after the convention had been converted into a parliament, by a bill paſſed in January 1689, and they were proceeding to call over the members' names in the houſe of lords, that the new oaths of allegiance and ſupremacy might be tendered to them, the archbiſhop declined coming to the houſe, and his example was followed by ſeven other prelates. On the 1ſt of Auguſt, the time allowed by parliament for the clergy to take the oaths having expired, and the archbiſhop refuſing to qualify, he was ſuſpended *ab officio;* and on the 1ſt of February following he was deprived. He, nevertheleſs, reſided unmoleſted at Lambeth till the nomination of his ſucceſſor, Dr. Tillotſon, upon which he received an order to quit the palace in ten days. This was in May 1691, but he had made up his mind that he would not remove till he was ejected by law; he was accordingly cited to appear before the barons of the exchequer to anſwer a writ of intruſion, and as he avoided putting in any plea, judgment was paſſed againſt him. On the evening of the ſame day he withdrew to a private houſe near the Temple, and in a few weeks afterwards he retired to the country, where he ſpent the remainder of his days. He died in November 1693, in the 78th year of his age. He was reckoned an excellent, as well as a general ſcholar: of his integrity he gave the ſtrongeſt evidence, by ſacrificing his high dignity rather than violate his conſcience. His character is thus drawn by Dr. Birch. "Upon an impartial examination of his conduct and character, he will appear to have been ſlow, timorous, and narrow-ſpirited, but at the ſame time a good, honeſt, and well-meaning man. He was laborious in his ſtudies, and had amaſſed a vaſt collection of papers, having written perhaps more with his own hand than any perſon of his time. But the three ſermons which he publiſhed give us a very low idea of his taſte and judgment, and are more ſuitable to a diſciple of biſhop Andrews, than a contemporary of Dr. Tillotſon."

Beſides theſe ſermons, the other publications of Dr. Sancroft conſiſt of a Latin dialogue, compoſed partly by himſelf, and partly by two friends, entitled, "Fur Prædeſtinatus, ſive, Dialogiſmus inter quendam Ordinis Prædicantium Calviniſtam et Furem ad Laqueum damnatum Habitus:" "Modern Politics taken from Machiavel, Borgia," &c.: "Familiar Letters." His collections in MS. were purchaſed by biſhop Tanner, and preſented to the Bodleian library.

SANCTIFICATION, the act of ſanctifying, or making a thing holy, and ſeparate to God.

The reformed divines define ſanctification an act of God's grace, whereby a man is renewed inwardly, his deſires and affections are alienated from the world, and the man put in a courſe of dying to ſin, and living to righteouſneſs. See SAINT.

The *ſanctifying of the ſabbath,* among the Jews, is of divine right or inſtitution. By *ſanctifying* the ſabbath, is meant, the ſpending it in prayer, praiſe, &c. not in worldly concerns.

The firſt petition in the Lord's Prayer is, *Hallowed*, i. e. *ſanctified be thy name:* by which is meant, let thy name be ever accompanied with bleſſing and praiſe. The meaning of this phraſe may be beſt underſtood by its oppoſite, *i. e.* profaning the name of God, by vain ſwearing, blaſpheming, aſcribing his name to idols, and uſing it in a heedleſs manner, and on trivial occaſions: by furniſhing wicked men and infidels with occaſion for blaſpheming it by a wicked life, &c. &c.

SANCTION, Sanctio, the authority given to a judicial act; or that whereby it becomes legal and authentic.

The word is formed from the Latin *ſancire, to eſtabliſh.*

The royal aſſent gives the ſanction of ſtatutes, to all bills in parliament that have paſſed each houſe.

Sanction *of a law.* See Law.

Sanction, *Pragmatical.* See Pragmatic.

SANCTI VITI Chorea. See Vitus's *Dance.*

SANCTIUS, Jasper, commonly denominated *Sanchez*, in *Biography*, a learned commentator on the ſcriptures in the 16th and 17th centuries, was born at Cifuentes, in New Caſtile, about the year 1553. He became a member of the ſociety of Jeſus when he was about ſeventeen years old, and cultivated the different branches of literature and ſcience with ſuch ſucceſs, that he was ſelected by his ſuperiors to teach the learned languages and the belles-lettres in the colleges belonging to his order at Oropeſa, Madrid, and other places. After preſiding in theſe departments during thirty years, he was appointed profeſſor of ſacred literature in the college at Alcala. Here he ſpent thirteen years in commenting on the ſacred ſcriptures, and the reſult of his labours met with a favourable reception, not only from the Catholics but alſo the Proteſtants. Among the latter, our countryman Poole has made frequent reference to his judgment in his "Synopſis Criticorum." In 1628 Sanctius was called from Alcala, to fill a ſimilar profeſſorſhip at Madrid, but he died before he could enter upon the duties of his office, when he was about 75 years of age. His works are commentaries in the Latin language, on almoſt all the books in the Old Teſtament, and on the Acts of the Apoſtles.

SANCTORIAN Tables, are uſed to ſignify ſuch regiſters as exhibit the quantities of perſpiration, its proportion to ſtool or urine, &c. We have ſuch tables from the obſervations of Dr. Lining, at Charleſtown, South Carolina. See Phil. Tranſ. N° 470, and 475.

SANCTORIUS, Sanctorius, in *Biography*, an ingenious phyſician, who greatly diſtinguiſhed himſelf by his experiments on the inſenſible perſpiration, was born in the year 1561, at Capo d'Iſtria, a town on the borders of the gulf of Trieſte. He ſtudied medicine at Padua, where he received the degree of doctor of phyſic, and then went to Venice, where he ſettled, and entered into the practice of his profeſſion with conſiderable ſucceſs. In the year 1611, however, he was recalled to Padua, by an appointment to the profeſſorſhip of the theory of medicine in that univerſity; an office which he immediately undertook, and gave lectures to a large concourſe of auditors for the ſpace of thirteen years. His profeſſional reputation was now ſo high, that he was frequently ſent for to Venice by the people of diſtinction in that city; and, finding his health impaired by the fatigue of theſe journies, he reſigned his chair at Padua, in order to dedicate all his time to medical practice. His reſignation was accepted, but the gratuity was continued; and with this teſtimony of the public eſteem, he removed and ſettled finally at Venice. He had already attained the age of ſixty-three, and lived twelve years in the enjoyment of reputation and emolument at Venice, where he died in 1636, at the age of ſeventy-five. He was buried in the cloiſters, and a ſtatue of marble raiſed to his memory in the church of a religious order in that city. He bequeathed an annuity to the college of phyſicians at Venice, who, in gratitude for the gift, inſtituted an annual oration to commemorate his benevolence.

Sanctorius firſt called the attention of phyſicians to the function of cutaneous and pulmonary tranſpiration, the importance of which in the animal economy he demonſtrated, by proving the extraordinary proportion of ſubſtance, or weight, which was loſt in the courſe of twenty-four hours by this inſenſible exhalation. By weighing the quantity of *ingeſta*, that is, of the ſolid and liquid ſubſtances taken into the body, within this given period, and alſo the ſenſible and ponderable diſcharges which were emitted within the ſame ſpace of time, he found that "the inſenſible tranſpiration alone was wont to exceed conſiderably all the ſenſible diſcharges put together." (De Statica Medicina, ſect. i. aph. 4.) He calculated, in fact, that "if the meat and drink of one day amounted to *eight* pounds, the inſenſible tranſpiration uſually conſtituted about *five* pounds:" (Aphoriſm 6.) and of this he eſtimated that about *half a pound* paſſed off from the lungs by reſpiration. (Aph. 5.) In another place, he eſtimates theſe more ſpecifically; aſſerting, that "in the ſpace of one night about *ſixteen* ounces of urine, *four* of digeſted matter by ſtool, and *forty* or more of inſenſible perſpiration, are uſually diſcharged." (Aph. 59.) And that "in many perſons as much is evacuated in one natural day by inſenſible perſpiration, as in the courſe of fifteen days by the bowels." (Aph. 60.) He alſo ſtates, "I have found the inſenſible perſpiration to be about *forty* ounces in ſeven hours, *during ſleep;* but only *twenty* while *awake.*" Aph. 20. ſect. iv.

It is natural, when any new function or action is diſcovered, to aſcribe to it immediately a great influence in the common operations of the ſyſtem, which we have hitherto been able to explain imperfectly; and accordingly Sanctorius referred moſt of the deviations from health to irregularities and impediments in this inſenſible perſpiration. He affirms in his 42d aphoriſm, that "the firſt ſymptoms of diſeaſes are more ſurely detected from a change in the perſpiration than from diſorder of the functions;" and he has drawn up many aphoriſms, detailing the cauſes, internal and external, by which the perſpiration is deranged, as well as the effects which follow this derangement, and eſpecially the retention of the perſpirable matter. From theſe views he regulated the principles both of diet and medicine, and the modes of preſerving the health and curing diſeaſes.

We have already ſtated, that there are many ſound obſervations among the aphoriſms of Sanctorius, and that he conferred a benefit on medical ſcience, by directing the obſervation of medical men to the functions of the ſkin, (ſee Medicine, *Hiſtory of*); but unfortunately, the doctrines were extended much too far; and, coinciding with the *mechanical* principles, which were coming into vogue after the diſcovery of the circulation, as well as with the *chemical* notions, which were not yet exploded, they contributed to complete the eſtabliſhment of the *humoral pathology*, under the ſhackles of which the practice of medicine continued almoſt to our own times. The evils which reſulted from this pathology we have taken many occaſions to point out; and the diſcuſſion would be out of place here. See eſpecially the articles Humoral *Pathology*, and Miliary *Fever.*

The treatiſe of Sanctorius, entitled "Ars de Statica Medicina," was firſt publiſhed, in a ſmall duodecimo, in 1614, at Venice; but it has ſubſequently paſſed through more than twenty editions, including tranſlations, with various commentaries. The Latin ſtyle of Sanctorius is elegant and perſpicuous. He publiſhed ſome other works: *viz.* "Methodi vitandorum Errorum omnium, qui in Medicina contingunt, Libri xv." Ven. 1602; of which a Geneva edition of 1631, compriſed alſo an eſſay "De Inventione Remediorum." "Commentaria in primam Fen. primi Libri Canonis Avicennæ," 1625. "Commentaria in primam Sectionem Aphoriſmorum Hippocratis," 1629. And "Commentaria in Artem Medicinalem Galeni," 1613. All his works were collected, and publiſhed together, in four volumes, 4to. at Venice, in 1660.

Sanctorius was the author of ſeveral inventions. Beſides his ſtatical chair, by which the quantity of food taken was weighed, he invented an inſtrument for meaſuring the force of the pulſe; and ſeveral new inſtruments of ſurgery. He was the firſt phyſician who attempted to meaſure the heat of the ſkin by a thermometer, in different diſeaſes, and at different periods of the ſame diſeaſe. And he was an avowed enemy to empirics and empirical noſtrums, as well as to all occult remedies. See Eloy, Dict. Hiſt. de la Med. and Sanctorii Ars de Stat. Medicina.

SANCTUARIUM, in *Eccleſiaſtical Writers*, the ſame with Brandeum.

SANCTUARY, among the *Jews*, was the holieſt and moſt retired part of the temple of Jeruſalem; in which was preſerved the ark of the covenant; and into which nobody was allowed to enter but the high-prieſt, and that only once a-year, to intercede for the people.

The ſanctuary, called alſo *ſanctum ſanctorum*, or *holy of holies*, is ſuppoſed to be a type or figure of heaven, and of Jeſus Chriſt the true high-prieſt, who is aſcended thither to make interceſſion for us.

Some will have it, that the whole temple was called the ſanctuary: and that the ſanctum ſanctorum, where the ark was kept, was only a little chapel or oratory in it.

To try or examine a thing by the *weight of the ſanctuary*, is to examine it by a juſt and equal ſcale; becauſe, among the Jews, it was the cuſtom for the prieſts to keep ſtone weights, to ſerve as ſtandards for regulating all weights by; though theſe did not differ from the royal or profane weights.

SANCTUARY, in our *Ancient Cuſtoms*, denotes an aſylum, or place privileged by the prince for the ſafeguard of mens' lives, who were guilty of capital crimes.

In Scotland they call the ſanctuary *girtholl*, or *gyrthol*. The Saxons alſo call it *frodmortel*, and *fridſtoll*.

Till Henry VIII. all our churches and church-yards were ſanctuaries; and protected perſons accuſed of any crime (except treaſon, in which the crown, and ſacrilege, in which the church, was too nearly concerned) who fled to them; and who within forty days after went in ſackcloth, and confeſſed themſelves guilty before the coroner, and declared all the particular circumſtances of the offence; and who thereupon took the oath in that caſe provided, *viz.* that they abjured the realm, and would depart from thence forthwith, at the firſt port that ſhould be aſſigned them, and would never return without leave from the king: by this means they ſaved their lives, if they obſerved the conditions of the oath, by going with a croſs in their hands, and with all convenient ſpeed, to the port aſſigned, and embarking; for if, during theſe forty days' privilege of ſanctuary, or in the road to the ſea-ſide, they were apprehended and arraigned in any court for this felony, they might plead the privilege of ſanctuary, and had a right to be remanded, if taken out againſt their will. But by this abjuration their blood was attainted, and they forfeited all their goods and chattels. During this time, if any layman expelled them, he was excommunicated; if a clerk, he was made irregular; but after forty days no man might relieve them.

The immunity of theſe privileged places was very much abridged by the ſtatutes 27 Hen. VIII. cap. 19. and 32 Hen. VIII. cap. 12. And now, by the ſtatute 21 Jac. I. cap. 20, all privilege of ſanctuary, and abjuration conſequent thereupon, is utterly taken away and aboliſhed.

St. John's of Beverley had an eminent ſanctuary, called by the Saxons, *a ſeat of peace:* ſo had St. Martin's-le-Grand, in London. Ripon had the like granted by Whitlaſe, king of the Mercians: ſo had St. Burien's, in Cornwall, granted by king Athelſtan, anno 936; and Weſtminſter had the like, granted by Edward the Confeſſor.

SANCTUARY is alſo uſed, in the Romiſh church, for the chancel, or that part of the church in which the altar is placed, encompaſſed with a rail or baluſtrade.

SANCTUM SANCTORUM. See SANCTUARY.

SANCY *le Bas*, in *Geography*, a town of France, in the department of the Moſelle; 9 miles W. of Thionville.

SAND, in *Mineralogy*. The name of ſand is given to all mineral matter that exiſts in minute detached grains, and is denominated from the prevailing ſubſtance, as ſiliceous ſand, iron ſand, &c. Sand is generally formed from the diſintegration of hard ſtones or rocks by the agency of water, and the particles of ſiliceous ſtones, poſſeſſing a greater degree of hardneſs than moſt other kinds. The greateſt part of the ſand which exiſts on the ſea-ſhore, or is ſpread on the ſurface of the earth, is ſiliceous. Argillaceous ſtones, or calcareous ſtones intermixed with alumine, when reduced to minute parts, form a kind of paſte or mud by intermixture with water, the particles uniting or cementing together as the mixture becomes dry. When a bed of ſiliceous ſandſtone riſes to the ſurface, the particles become ſeparated by the action of the atmoſphere and other cauſes, and form a looſe ſandy ſoil; ſometimes ſo deſtitute of mixture with other earths, as to be entirely unfit for vegetation. There are alſo certain regular beds of ſand above and below chalk-rocks on the eaſtern ſide of our iſland, which, wherever they riſe to the ſurface, form ſandy tracts, as at Woburn, in Bedfordſhire. Such beds of ſand are probably original depoſits, like many of the other ſtrata that cover the globe. We are not to conclude that all ſand is the product of decompoſed rocks: a large portion of it is an original formation, particularly that which compoſes many ſandſtones. Romé de Liſle, in his Cryſtallographié, obſerved this circumſtance, and has ſtated, that the ſand is much too angular, and the grains too regular in ſize, to admit the ſuppoſition that they were formed by the deſtruction of pre-exiſting rocks. "A bed of perfectly tranſparent and cryſtalline ſand was found at Neuilly, in France, each grain of which, when examined with a lens, was a perfect ſix-ſided priſm, terminated by two ſix-ſided pyramids. The tranſparency and perfection of the cryſtals prove that they were not mechanically formed and brought from a diſtance. They are the reſults of original chemical or cryſtalline formations. The ſands at Creil, at Nevers, and Etampes, and other parts of France, are ſo pure, as to be employed in the glaſs manufactory of St. Gobelin." The ſame writer ſtates, that he received a quantity of ſand from Cayenne, compoſed of perfect microſcopic garnets, with twenty-four trapezoidal faces. Some of the ſands of Egypt contain alſo numerous microſcopic cryſtals, particularly of ſapphires; ſome perfectly tranſparent, and others as green as emeralds. Sand, principally compoſed of ſiliceous earth, is employed for divers important uſes. Mixed with quick-lime it forms mortar. In the fabrication of pottery-ware, a certain quantity of ſiliceous ſand is neceſſary to give it conſiſtence, and to enable it to ſtand the action of fire. The further vitrification that the ſilex undergoes communicates a degree of hardneſs and ſolidity which pottery could not otherwiſe acquire. Siliceous ſand is an article of prime importance in the manufacture of glaſs,

glaſs. When pure it forms the baſis of the moſt beautiful tranſparent flint and crown-glaſs.

The ſurface of the globe preſents immenſe countries covered with ſand, as the deſarts of Africa, and thoſe of northern Aſia. According to Patrin, a French mineralogiſt, the great rivers which he has ſeen in northern Aſia, the Irtiſch, the Ob, and the Yeniſſey, have their beds at preſent ſurrounded by ſandy deſarts, which are in many parts from four to five hundred feet above the level of the plains. Theſe maſſes of ſand, which cover ſuch an immenſe extent, were formed from the ruins of the higher parts of central Aſia, brought down by inundations. "Extenſive tracts of cultivated ground are ſometimes converted into ſandy deſarts: the proceſs is taking place at preſent, and has been well deſcribed by Cuvier. During very high winds, the ſand on the ſea-ſhore is driven inland, covering the ground to a certain diſtance, and leaving an elevated ridge at the further boundary; ſucceeding winds blow this forward, and at the ſame time bring freſh ſand to ſupply its place.

"In the ſixth volume of the Tranſactions of the Iriſh Academy, an account is given of the encroachment of the ſand over ſome parts of Ireland. Trees, houſes, and even villages, have been covered or ſurrounded during the laſt century. The roofs, ſtill riſing above the waſte, atteſt the period and the progreſs of deſolation. The looſe ſands of Egypt are thus ſpreading over the plains that border the Nile, and burying the monuments of art, and the remembrance of former cultivation. Palmyra, in Aſia Minor, that once ſupplied an abundant population with food, now ſcarcely affords a few plants to the camel of the wandering Arab. By planting and irrigation man can fix limits to the moving waſtes of ſand; but deſpotic power, more deſtructive than the winds of the deſart, unnerves the arm of induſtry, and daſhing the cup of enjoyment to the ground, conſigns flouriſhing and fertile diſtricts to eternal ſterility and ſolitude." (Bakewell's Introduction to Geology.) The ſandy deſarts of Arabia, in that part between Hit and Tahiba, are covered with a kind of looſe gravel, in which are found bivalve ſhells.

SAND, *Auriferous.* The greateſt part of the gold of commerce exiſts in ſmall grains on the ſands of rivers. In this ſtate it has been found in ſmall quantities in Cornwall, and in large quantities in the county of Wicklow, in Ireland. The ſpace where the gold was collected is of limited extent, not exceeding 300 yards along the banks of a brook which runs from the mountain in that county. The brook is only ſix or ſeven feet wide; and before the ſearch for gold began in 1796, had formed its channel down to the ſurface of the rock. The banks of this ſmall ſtream, in the above limited ſpace, are compoſed of a ſtratum of ſand and gravel about five feet thick, which repoſes on a rock of ſlate; the latter is interſected by veins of quartz. It is from this ſandy ſtratum that the particles of gold were extracted by waſhing. Ten thouſand pounds Iriſh were paid for the gold found in the firſt two months: the average rate paid *per* ounce was 3*l.* 16*s.*, making the total amount equal to 2666 ounces. The ore was ſo pure, that its ſpecific gravity was 19, and 24 grains yielded, when aſſayed, above 22½ grains of gold. The greater part of it was entirely free from ſtony matter; but ſome of it was attached to quartz, or a fine-grained iron-ſtone, and ſometimes the gold was diſſeminated in theſe minerals. Several maſſes of gold, exceeding one ounce weight each, were found in the ſand. One was diſcovered which weighed 5 ounces, and another of 22 ounces, which is ſaid to be the largeſt maſs of native gold found in Europe.

Gold is found in the ſands of Spain and Portugal. Many of the rivers in France, as the Rhine, the Rhone, and the Garonne, furniſh auriferous ſand. In the ſouthern parts of Aſia, the ſands of many of the rivers contain gold. The Pactolus, a ſmall river in Lydia, is celebrated by the ancient writers for the quantity of gold which it afforded, and is ſuppoſed rich in gold at the preſent time. The greateſt quantity of gold which the ancients poſſeſſed was obtained from Africa. The gold from that country ſtill forms a conſiderable article of commerce. It is always in the ſtate of minute grains, called gold-duſt, and is extracted from the ſands of rivers. There are three or four parts remarkable for the quantity of gold they afford. The firſt is that part of the country which lies between Darfur and Abyſſinia. The gold collected there is brought to market by the negroes in the quills of the oſtrich or vulture. This is probably the country (Ethiopia) from which the ancients derived their gold.

The ſecond principal ſource of gold-duſt in Africa lies to the ſouth of the Great Deſart of Zara, or Sahara, in the weſtern part of that continent. The gold is collected from the ſands of that extenſive flat country, bounded by the mountains that give riſe to the rivers Senegal, Gambia, and the Niger. Bambouk, which is ſituated to the north-weſt of theſe mountains, furniſhes the greater part of the gold which is ſold on the weſtern coaſt of Africa, as well as that which is brought to Morocco, Fez, and Algiers, and to Cairo and Alexandria in Egypt. A third region of Africa, which furniſhes auriferous ſand and gold-duſt, lies on the ſouth-weſt coaſt, between 15 and 22 degrees of ſouth latitude, nearly oppoſite to Madagaſcar. Nearer to the equator, the Gold Coaſt ſupplied the Portugueſe, and afterwards the Dutch, with immenſe treaſures in gold-duſt from auriferous ſand.

Gold is alſo found in the ſands of rivers in North and South America, particularly in the Portugueſe ſettlements of the Brazils.

It has been obſerved, that gold is moſt abundant in the ſand of rivers, when the waters are at the loweſt, and particularly ſoon after floods: from which it is inferred, that the gold is carried down along with the earthy matters which are ſwept off by the violence of the currents. It has been ſuppoſed, too, that the gold found in the beds of rivers has been detached by the force of the waters from the veins of the primitive rocks which are traverſed by theſe currents, and, according to this opinion, attempts have been made to trace the ſource of theſe auriferous ſands in the hope of diſcovering the native repoſitory of that precious metal: but theſe attempts have uſually failed; for it appears that the gold is peculiar to the alluvial ſoil through which the ſtream is carried, and is limited to the very ſpot where it has been collected. This point ſeems to be fully eſtabliſhed by the obſervations of naturaliſts. 1. The ſoil of certain plains through which rivers flow, frequently contains, to a certain depth, and in particular places, particles of gold. 2. The bed of the auriferous rivers yields a greater proportion of gold after the plains which are traverſed by theſe rivers have been flooded. 3. It has been very generally obſerved, that gold is found in the ſand of rivers in a very limited ſpace. When the ſand of theſe rivers is examined higher up, and nearer to their ſource, no gold is found; ſo that if this metal were derived from the rocks which are abraded by their currents, the quantity would be greateſt neareſt to their ſources; but obſervation has proved the contrary. Thus, the river Orco contains no gold but in that part of its courſe between Pont and the place where it joins the Po. The river Teſin affords no gold till it has traverſed lake Major, where its courſe muſt have been retarded, and where all the heavy particles of matter which it carried along with it from the primitive mountains, muſt have been depoſited. The quantity of gold collected on the Rhine near Straſburg, is greater than what is found near Baſle, which is more in the vicinity of the mountains. No gold has been diſcovered in the ſands of the Danube during the firſt part of its courſe; it is only in the places below Efferding, which are traverſed by that river, that the ſands become auriferous. A ſimilar remark is applicable to the river Ems: the ſands of the upper part of that river, as it traverſes the mountains of Stiria, contain no gold; but from the place where it enters the plain at Steyer, till it joins the Danube, the ſands are auriferous, and ſufficiently rich to be waſhed with advantage.

As a farther illuſtration of the natural repoſitories of gold being limited to particular ſpots, other facts may be noticed. The river Nera, in the bannat of Temeſvar, in Upper Hungary, has been long known to yield gold-duſt. The ſtrata on the banks of this river are, about a foot of vegetable mould; two feet of loam; next pebbles and calcareous earth, one foot and a half; then pebbles, with pieces of other rocks, mica, garnets, and iron-ſand, three feet. This laſt is the ſtratum which affords the gold-duſt. In examining the extent of the gold-impregnated ſtratum, a ſhaft was ſunk to the depth of one fathom and a half; thirty loads of ſand were dug out from this pit, and being waſhed, yielded two grains of gold. Another ſhaft was ſunk twenty-eight fathoms nearer to the foot of the mountains, and the ſame quantity of ſand being dug out and waſhed, produced only half a grain of gold. At the diſtance of twenty-two fathoms to the ſouth, another ſhaft was ſunk, but the ſtrata through which it was carried were entirely different. This gold-impregnated ſtratum not only becomes poorer as it approaches the mountains, but it has been alſo obſerved to become richer in proportion to its depth under ground. The iron with which the gold is accompanied in this ſtratum, is in the form of black ſhining particles, which are attracted by the magnet.

Moſt of the auriferous ſands, in all parts of the world, are of a blackiſh or reddiſh colour, and ferruginous. From this circumſtance, naturaliſts have concluded that the gold in theſe ſands is derived from the decompoſition of auriferous pyrites.

It was obſerved by Reaumur, that the ſand which accompanies the gold of moſt rivers, and eſpecially that of the Rhine and the Rhone, reſembles the gold ſand of Ceylon. It is compoſed of particles of iron, and ſmall grains of rubies, corundum, and hyacinth. Titanium has alſo been diſcovered in the ſame ſand.

Green ſand of Peru, or copper ſand, an ore of copper, exiſting in ſmall grains; it is compoſed of that metal, combined with the muriatic acid. See Copper.

Iron ſand, an ore of iron, in very minute grains, which, according to Werner, are not magnetic when at a depth in the earth, but become ſo by expoſure to the atmoſphere.

Volcanic ſand conſiſts of minute grains, generally of a black colour, thrown out of the craters of volcanoes in ſuch immenſe quantities, as to darken the air, and cover the ſurface of the ground to a vaſt extent with a new ſoil. During one eruption of Etna, a ſpace of one hundred and fifty miles in circuit was covered with volcanic ſand to the depth of twelve feet. Volcanic ſand is ſometimes cryſtalline. Towards the concluſion of an eruption, the ſand changes its colour, and is generally a white powder, improperly called aſhes. It conſiſts of white pumice, in a finely comminuted ſtate. See Volcano.

In reference to the various practical purpoſes to which ſand has been applied, it has been ſometimes diſtinguiſhed into *pit-ſand*, *river-ſand*, and *ſea-ſand*.

The uſe of ſand in building is as an ingredient in *mortar*; which ſee.—For this purpoſe, pit-ſand is of all others the beſt; and of pit-ſand, the whiteſt is always the worſt. Of river-ſand, that found in the falls of waters is beſt, becauſe moſt purged: and ſea-ſand is the worſt.

Pit-ſand, as being fat and tough, is moſt uſed in walls and vaults. River-ſand ſerves beſt for rough caſting.

All ſand is good in its kind, if, when ſqueezed and handled, it crackles; and if, being put on a white cloth, it neither ſtains nor makes it foul. That ſand is naught, which, mixed with water, makes it dirty and muddy, and which has been long in the air; for ſuch will retain much earth and rotten humour. Hence ſome maſons waſh their ſand before they uſe it.

The ſand of Puzzuolo, de Lorme obſerves, is the beſt in the world; eſpecially for maritime buildings. See Pozzolana.

The ſand of which glaſs is made is white and gritty, and full of little ſparkling grains.

Sand ſeems to have been the firſt ſubſtance added to proper ſalts for making of glaſs. Joſephus, Tacitus, Strabo, Pliny, Agricola, &c. all mention this, and tell us of the ſtores from which the ſand for this uſe was brought being inexhauſtible. See Glass.

The ſand uſed by founders is foſſile: it is properly a yellow fat earth, of which they make their moulds for the caſting of ſmall work; whence it is they ſay, *caſting in ſand*.

The plumbers alſo uſe ſand to mould ſeveral of their works, particularly large ſheets. To prepare the ſand for theſe ſheets, they wet it lightly: then ſtir and work it with a ſtick; and then beat and plane it. See Plumbery.

Sand, particularly Lynn-ſand, is uſed as a body for the fluxes and grounds of enamel. See Flux.

Sand, in *Agriculture*, a well-known ſubſtance of the foſſile kind, found in minute concretions, forming together a ſort of powder, the particles of which have all a tendency to one determinate ſhape, and appear regular, though more or leſs complete concretions; not to be diſſolved or diſunited by water, or formed into a coherent maſs by means of it, but retaining their original forms, tranſparent, vitrifiable by extreme heat, and when pure, not diſſoluble in, or effervеſcing with, acids.

Theſe ſubſtances, in the ſtate of nature, are variouſly blended and intermixed with other materials, particularly with flakes of talc, &c. and according to theſe and their different colours, are ſubdivided into ſeveral kinds, as red, white, &c. And from their having in ſome caſes, as ſoils, a degree of tenacity or heavineſs, while in others they are light, and without any coheſion, they have been further diſtinguiſhed by farmers into *heavy* and *blowing* ſands. See Soil.

Dr. Liſter has divided the ſands of this country into two claſſes: firſt, the ſharp or rags, conſiſting of ſmall tranſparent pebbles, naturally found on the mountains, and not calcinable: theſe he farther divides into fine and coarſe, and ſubdivides each, according to their colours, into white, grey, reddiſh, brown, &c. Second, the ſoft or ſmooth, which he ſubdivides into that with flat particles, broken from lime-ſtones, that with ſilver-like particles, and that with gold-like particles.

It is remarked, that the great uſe of ſand is in making clayey earth or ſoil more fertile, and fit to ſupport vegetables, &c. as theſe earths alone are liable to coaleſce, and gather into hard, coherent maſſes, as is apparent in clay; and earth, when thus embodied, and, as it were, glued together, is not diſpoſed to nouriſh vegetables; but if with ſuch earth, ſand, &c. in ſuch hard particles as are not diſſolvable in water, but which ſtill retain their figures, be intermixed, they will keep the pores of the earth open, and the earth itſelf looſe and friable, and by that means nouriſh plants in a more perfect manner. Grounds that are of a ſandy or gravelly nature, readily admit both heat and moiſture; but they are liable to theſe inconveniencies, that they let them paſs away again with equal expedition; they are, of courſe, extremely apt to burn in dry, hot ſeaſons, but have the property of quickly recovering with the leaſt rain. They have likewiſe the property of being more early than the more heavy ſorts of land.

Likewiſe common ſand is a very good addition by way of manure to all ſorts of clayey lands, as it renders them more open and looſe. The beſt ſand for the farmer's uſe is that which is waſhed by rains from roads, or hills, or that which is taken from the beds of rivers: the common ſand that is dug in pits never anſwers well. Sand mixed with dung is much better than laid on alone: and very fine manure is made by covering the bottom of ſheep-folds with ſeveral loads of ſand every week, which are to be taken away, and laid on cold ſtiff lands, impregnated as they are with the dung and urine of the ſheep. Beſides clayey land, there is another ſort of ground very improveable by ſand, which is that of the black boggy land, on which buſhes and ſedge grow naturally, and which is cut into turf in ſome places. Six hundred loads of ſand being laid upon an acre of this land, according to the Cheſhire meaſure, which is nearly double the ſtatute acre, were found to meliorate it ſo much, that without ploughing, it yielded good crops of oats or tares, though before it would have produced ſcarce any thing. If, after this crop is taken off, the land be well dunged, and laid down for graſs, it yields large crops of ſweet hay. It is obſerved, that once ſanding this ſort of land will improve it for a great number of years; and that ſome land in Cheſhire has been, by this means, rendered of twelve times its former value to the owner. The bogs of Ireland, when drained, have been rendered very fruitful land, by mixing ſand in this manner among the earth of which they conſiſt. Add to this, that in all theſe boggy lands, the burning them, or firing their own turf upon them, is alſo a great advantage. The common peat, or turf-aſhes, mixed with the ſand for theſe purpoſes, add greatly to its virtue. In the wet, coarſe, ruſhy bottomed lands, it is alſo ſaid to have a great effect in deſtroying ſuch coarſe plants, and in bringing the ſward into a fine ſtate of herbage. It ſhould be ſpread out over the ſurface in an even manner, but not too thickly.

In the above county, the introduction of ſand as a manure or dreſſing for ſtiff clay-lands is one of the chief improvements which has lately been made, and the practice is yet only in its infancy, though the ſucceſs which has conſtantly attended it, will, it is ſuggeſted by the writer of the account of the agriculture of that diſtrict, probably render it more general. The utility of this ſubſtance in this way, though it was formerly little known, was but rarely had recourſe to until within the laſt thirty years, when it became employed upon a large ſcale by Mr. Corbett, both in its raw ſtate, and in mixture with dung on his ſward or graſs lands. This example, and the ſucceſs attending it, led to a more frequent application of it, and the practice has ſince been adopted on many large dairy farms in the more centrical parts, where opportunities were afforded, which are by no means uncommon, as deep beds of ſand are frequently met with under the clay, which prevails as the ſurface layer or ſtratum.

The ſort of ſand which is here thought the moſt beneficial in this way on ſuch lands, is commonly that of a red colour, received from the oxyd of iron contained in its parts, and which is ſoft and unctuous to the feel. Though no exact chemical examination of it has been made, yet it undoubtedly includes a large proportion of aluminous earth, in combination with its ſiliceous particles, but no calcareous matter has been found in the portions of it which have been examined.

There are two ways, it is ſuppoſed, in which ſand may be beneficial when applied on ſuch lands as a manure, which are, firſt, that of increaſing the quantity of the earthy bed already preſent, and ſecondly, that of its well-known property of altering the texture and diſpoſition of the land in ſuch caſes. The latter method is believed to be the more efficacious, as the ſand has a tendency to lighten and open ſuch ſoils by various means in mixing with them, and to bring them more to the ſtate of a loam, which is moſt ſuitable for vegetation in general. This ſort of action is conceived to be the counterpart to that of marle, as applied to light ſandy lands. In the different inſtances the intention of the cultivator is the ſame, that of reſtoring the land to the medium or loamy condition, which experience has ſhewn to be the moſt beneficial; and marle, by ſtiffening the ſoil, has this effect in the one caſe, and ſand, by opening and lightening it, in the other. The ſand is incorporated with the clayey land in various ways, as by being waſhed into its cracks and clefts after dry and froſty weather, by uniting with it in the moiſt ſtate cauſed by heavy rains, by its property of ſinking into it in conſequence of its weight, and the ſmallneſs of its particles, &c.

Mr. Manley, who has, it is ſaid, made uſe of it on ſuch lands with the greateſt benefit in different reſpects, at Merton, remarks, that "where there is a piece of ſtrong clay-land in tillage, and the farmer has an opportunity of covering it over with ſand, about twice as thick as in a common ſet of manure, the ſoil will be pulverized and opened by this means, will give better crops when in tillage, and when laid down will produce a finer herbage, leſs liable to be parched in dry weather, or trod down in wet ſeaſons." It is further ſuggeſted, that it is excellent management in the farmer, to lay a bed or coat of ſand, a foot in thickneſs at leaſt, before his cattle are tied up for the winter, where he intends to depoſit the dung to be thrown out of the cow-houſes. The dung thus thrown out ſhould be repeatedly levelled over the ſand, and another coat of the latter laid over the dung about the end of February; upon which, the reſt of the dung produced by the cattle, previouſly to their being turned to graſs, ſhould be put. As ſoon as poſſible after this period the whole ſhould be turned, and formed into a compoſt, being mixed well where it lies, or cut down *in breaſts*, filled into the dung-carts, and carried away to ſome ſituation on or near the land where it is intended to be uſed. It ſhould there be laid in a heap of at leaſt two yards in thickneſs. When it has remained two or three months in this ſtate, it will be in proper condition for putting upon the land; and will be found, on the whole, one of the moſt uſeful manures that can be employed by the cultivator, eſpecially in caſes where there is a prevalence of clayey matter in the land.

Sand may likewiſe be put in the grips, beds, or gutters, behind the cattle in the cow-houſes, into which the dung and urine are diſcharged, with very great advantage in many caſes, both in increaſing the quantity and improving the quality for different uſes. A red ſort of ſand is in uſe for this purpoſe in many different ſituations, with much benefit to the removal of the dung and the taking up of the liquid matters, as well as augmenting the manure-heap.

Sand, in *Gardening*, an earthy ſubſtance that is frequently made uſe of in the culture of different ſorts of flowers and plants which require a dry ſoil. The gardener cannot ſucceed in the growth of many ſorts of flower plants without having recourſe to this ſubſtance in the forming of his beds and other compartments which are neceſſary. Compoſitions are alſo frequently formed with it in theſe intentions, ſo that it becomes a very uſeful material to the floriſt in many different points of view. It is highly neceſſary in the culture of many bulbous-rooted plants.

Sand, *Indian.* The ſubſtance commonly called *Indian ſand* is famous for anſwering to the magnet. It is brought into ſeveral parts of Europe, and is ſaid to be gathered on the ſea-ſhore in Perſia. After it is gathered it is boiled in water, to waſh away the impurities it may contain ; and when dried it is ſent abroad in form of a black powder, conſiſting of grains of different ſizes. Some of theſe grains are very rough in every part of their ſurface, and others have one ſide only rough, the others perfectly ſmooth and gloſſy. Their figure is very irregular, and reſembles that of the grains of common ſand ; only the grains of this Indian ſand are uſually ſmaller than thoſe of our common ſands.

Theſe little lumps have neither taſte nor ſmell, and are ſo friable, that they are eaſily reduced to an impalpable powder by rubbing. Some of the particles are ſtrongly attracted by the loadſtone, and others are ſo inactive as to be ſcarcely at all affected by it. Thoſe particles which are of the deepeſt duſky black, are moſt of all affected by the loadſtone ; thoſe which are not affected by it, ſeem rather of the colour of lead, of a blueiſh-black and ſhining ; theſe are in the greateſt quantity, and the others are ſelected from among theſe by the loadſtone.

There are ſeveral parts of the world which afford this ſand, but with ſome difference in the figure of its grains and their magnetic virtue. Beſide Perſia, it is found on the ſhores of Virginia ; another ſort of it is found about Italy, and very common at Leghorn : this is very magnetic. There are two ſorts of it found in the river Eber in Haſſia, of which one is like the Italian, but the other conſiſts of large grains, almoſt as big as hempſeed, but having very little virtue. A very ſtrong ſort is found in Dalmatia, near old Raguſa ; and probably future enquiries will ſhew, that there are yet many more kinds of it, differing in ſtrength and ſize. Phil. Tranſ. N° 432, p. 201. See Magnet.

Sand, *Sea.* See Sea-*Sand.*

Sand, *Shelly,* in *Agriculture,* a ſort of calcareous ſand, found in large banks or beds in many ſituations on the borders of the ſea. It is obſerved by Dr. Anderſon, in his Eſſays on Rural Affairs, that on many parts of the ſea-coaſts great beds of ſhells are to be found which have been broken into ſuch ſmall parts as to aſſume the appearance of ſand. And that this is a rich and valuable manure that deſerves to be highly prized by thoſe who are within reach of it ; but it is too often neglected and unobſerved, as this kind of ſand has on many occaſions very much the appearance of ordinary ſand. And it is ſtated that this may readily be diſcovered by pouring a little *aqua-fortis,* or any other mineral acid, upon the ſand which you wiſh to examine. The author here properly ſuggeſts, that many perſons make this trial with *vinegar* inſtead of the mineral acids, but which ought never to be done, as it often happens that vinegar makes no ſenſible efferveſcence with calcareous ſubſtances. He would therefore adviſe every country gentleman to keep a phial of aqua-fortis, or muriatic acid, always by him for making trials of calcareous ſubſtances : the expence is next to nothing. And he is perſuaded, from the want of it alone, many perſons have failed to make diſcoveries of calcareous matters that might have been of high importance to themſelves and families. If it contain ſhells, an efferveſcence will enſue, and the proportion of calcareous matter contained in any ſort of ſand may be aſcertained by a proper proceſs. Nor ought this trial ever to be omitted before the ſand is employed as a manure ; becauſe a very ſmall proportion of ſhells will make it efferveſce violently, ſo that the degree of efferveſcence is no proof of its purity, and becauſe the proportion of ſhells varies in all poſſible degrees. It is added, that if the ſhells are broken into very ſmall fragments, and if the proportion of ſand be inconſiderable, it will be nearly as valuable as lime, and may be driven to a greater diſtance with profit. If the proportion of ordinary ſand be very great, the expence in uſing it will be greater, as the quantity muſt be conſiderably increaſed. But as it may for the moſt part be procured at little expence, thoſe who are poſſeſſed of it, are uſually able to employ it in great quantities, in which caſe it will produce amazing effects, eſpecially upon ſtrong clayey lands or others that are very heavy. It is likewiſe ſuppoſed that a much ſmaller quantity of calcareous matter in this ſtate will produce a more ſenſible effect than when it is in any ſort of earthy marle, becauſe it admits of being more equally ſpread upon the ground, and more intimately mixed with the ſoil ; thoſe therefore who are upon the ſea-coaſt, ought to ſearch for it with care, as they will uſually obtain an invaluable treaſure when they diſcover it. The writer ſuggeſts, that this ſort of ſand is much more common on the eaſt coaſts of Scotland than is uſually imagined. All along the coaſt of Fife, eſpecially about St. Andrew's, the ſand upon the ſhore is richly impregnated with ſhells, but it has never there been employed as a manure. On the north coaſt of Aberdeenſhire ſhelly ſand abounds, and has been of late employed as a manure with the greateſt ſucceſs, by a gentleman diſtinguiſhed for his knowledge and public ſpirit in that corner. It is likewiſe found in Banffſhire, where it has been applied with the higheſt ſucceſs. And all along the coaſt of Sutherland and Caithneſs, the ſand upon the ſhore conſiſts almoſt entirely of ſhells. He thinks that theſe treaſures will enrich poſterity, although they are at preſent in a great meaſure neglected. He mentions them here to induce his countrymen not to neglect a treaſure of ſuch ineſtimable value. But on the weſt coaſts of Scotland, and among the iſlands, ſhelly ſand much more abounds, and its effects as a manure are much more generally known, than on the eaſt coaſts, ſo that it is there univerſally employed as the moſt efficacious manure with which they are acquainted. Its effects upon ſome of their heathy moſſy ſoils, appear to be in ſome caſes little ſhort of enchantment. And he aſſerts that the ingenious Mr. Craik in Dumfriesſhire employed this manure for a longer time, and in greater quantities, than any other perſon in Scotland, and has been highly benefited by it.

It is ſtated that farmers in many places in the ſouthern parts of the iſland might probably avail themſelves of ſimilar advantages, if they were attentive to examine the creeks and bays of the ſea-coaſts. In the Agricultural Report of Argyleſhire, it is noticed, that the ſhell-ſand found in many of the bays in that diſtrict, has been long uſed as a manure for corn and meadow-lands, which it greatly ameliorates. By this manure, not only the quantity of graſs is greatly increaſed, but its quality alſo mended. It anſwers well on any ſoil, but particularly on ſtiff clay, and on moſſy and ſpongy land, as (beſides its effect as a manure) it deſtroys the tenacity of their parts, and helps to pulverize the one and drain the other. Its value as a manure depends on the proportion which the ſhell bears to the ſand ; which in ſome places is greater, and in others leſs. The beſt ſand is found on ſome of the iſlands, particularly in Oronſay, from which it is frequently carried to the continent. Perhaps this is the beſt and cheapeſt manure that we have for hay-meadows. There is alſo a bank of good ſand on Elan-Davar, at the mouth of Campbelton harbour. The ſhores of Kilfinan, in Cowal, alſo abound in ſhell-ſand. Even ſea-ſand, which does not appear to have any mixture of ſhells, is found to be beneficial, eſpecially to moſs or clay grounds: ſome of the farmers in Kintyre apply it to ſuch lands with great advantage. On the ſhore of Dunaverty, in Kintyre, and in ſome other places, ſome coral is thrown aſhore; which proves an excellent and laſting manure, but the quantity is not ſo conſiderable as to be of any extenſive ſervice.

SAND-*Bags*, in the *Military Art*, are bags of earth or ſand, uſed in fortification. See SACKS *of Earth*.

The ſmaller ſand-bags hold about half a cubical foot of earth, and ſerve to be placed upon the ſuperior talus of the parapet, to cover thoſe that are behind, who fire through the embraſures, or intervals, which are left betwixt them.

SAND-*Bath*, in *Chemiſtry*. See BATH.

SAND-*Box Tree*, in *Botany*. See HURA.

SAND-*Eel*. See AMMODYTES.

SAND-*Flood*, in *Agriculture*, a term ſignifying the covering of land with ſandy materials, either by winds or the overflowing of rivers. The firſt is a ſort of diſaſter incident to the lands of Suffolk, and ſome other parts of the kingdom, which are ſometimes covered with vaſt quantities of ſand, rolling upon them like a deluge from ſandy hills in their neighbourhood. Violent winds break through the turf that covers theſe hills, and then the ſand, lying looſe and naked, is ſoon carried down upon the plains, where it covers and buries the graſs, and in a very little time deſtroys the light turf, and mixing itſelf with the ſand underneath, becomes one bed of this dry matter never to be covered with turf again. A large body of ſand being thus got together, nothing ſtops its progreſs; but at every ſtorm it rolls over more and more ground, ſo that in a few years it extends itſelf a vaſt way, eſpecially where the ground over which it paſſes is of the ſame ſandy nature, and only covered with a thin turf. It is obſerved, that in ſome parts of Suffolk the ground encourages this change ſo greatly, that a bed of ſand thus looſened from a neighbouring hill, and covering only a few acres at firſt, will ultimately deluge a large quantity, not being arreſted by riſing grounds or any other means. And it has been ſuggeſted, that the beſt way of ſtopping its progreſs is by hedges of furze, planted one over the other; as they become levelled, theſe, when well kept up, will by degrees ſtop or divert the progreſs; and ſome who have tried it with reſolution, after they have had the ſand raiſed twenty feet high, have found it ſtop its increaſe, and then, having manured this adventitious ſoil with dung, found it as good as that which made the ſurface before.

It is likewiſe ſtated in an early volume of the Philoſophical Tranſactions, that about Thetford the villages were wholly deſtroyed by this means about ninety years ago, and the branch of the river Ouſe, called then Thetford river, ſo blocked up by it, that very ſmall veſſels only could go up it, where very large ones uſed before. The river has been of great ſervice in ſtopping its progreſs into Norfolk, where otherwiſe its courſe would have carried it, and its extenſive ſpreading ſide-ways, in proportion to its going forward, would have made it bury great quantities of land in a few years. The moſt probable conjecture as to the cauſe of this ſtrange ſort of deluge in theſe parts of the kingdom is, that this portion of the county of Suffolk lies eaſt-north-eaſt of a part of the great level of the fens, and is by this expoſed to very tempeſtuous winds, which acquire more than ordinary force by their paſſing over ſo large a tract of country uninterrupted: the ſtorm ſeems to be one great cauſe of the miſchief, and the ſandy nature of the ſoil the other. There are old ſtories in the country, of ſuits at law commenced among the farmers, for grounds blown out of the owner's poſſeſſion; but the people who gain this ſort of wandering land are the greateſt ſufferers. A little ſand ſprinkled by the winds over a tract of land, where there is a bed of ſand under the turf, ſoon gets through that obſtacle; and what was at firſt only a thin coat of ſand, becomes then a deep plain of it, capable of being blown away to the depth of eight, ten, twenty, or more feet, and is carried over every thing in its progreſs before the winds when once taken up by them.

Beſides, it likewiſe ſometimes happens that much miſchief is done by ſand being conveyed upon lands, by the overflowing of rivers, in the vicinity of the ſea or other places. Where the lands thus covered are of the low boggy or ſwampy kind, the ſandy material thus thrown over them may be of conſiderable advantage, by rendering them more firm and ſolid, as well as by bringing up a better ſort of herbage; but in other caſes, as where they are in a ſtate of fine ſward, and ſufficiently firm, much injury muſt be done by the ſand deſtroying the good graſſy ſurface, and rendering it bare and patchy. In this caſe it ſhould be removed as ſoon as poſſible, and put upon the grounds in the neighbourhood which are ſuitable for it, being only left very thin on ſuch ſwards, and then immediately forced in as much as poſſible by repeated buſh-harrowing; and in ſome caſes, perhaps, rolling with a heavy roller may be found neceſſary to bring the ſurface into a proper condition again. And where the farmer has any coarſe rough lands near, that are much infeſted with ruſhes or other ſimilar plants, the ſandy ſubſtances thus thrown up may be of great advantage when removed upon them, in bringing them into an improved ſtate of ſward.

SAND-*Gavel*, a payment due to the lord of the manor of Rodley, in the county of Glouceſter, for liberty granted to the tenants to dig ſand for their common uſe.

SAND *Iſland*, in *Geography*, a ſmall iſland in the Indian ſea, near the eaſt coaſt of Madagaſcar. S. lat. 12° 40′. E. long. 50° 40′.

SAND-*Lands*, in *Agriculture*, a term uſed by farmers to ſignify ſuch grounds as conſiſt wholly or moſtly of pure ſand; and they have different appearances, according to the nature of the ſandy material, as white, blackiſh, reddiſh, or yellowiſh, and are very different in the nature and ſize of the particles of which they are conſtituted, ſome being harſher, and ſome milder, and ſome very light, ſeeming to be almoſt mere ſandy duſt. The grey, black, and aſh-coloured ſand-lands are the worſt, and are generally found on heaths and commons. Gravelly lands approach much to the nature of theſe; and thoſe which conſiſt of the largeſt ſtones, and are mixed with the harſheſt ſands, are, of all, the moſt barren and infertile.

It is obſerved, that the moſt ſuitable ſorts of manure for them is either clayey marle, or ſuch clay as will break with the froſts. The dung of neat cattle is alſo a good manure for ſuch lands; and many uſe chalk, mud, and the half-rotten ſtraw from dung-hills, with much advantage. Where theſe lands are over-run with broom, furze, and ſuch ſort of weeds, marle is adviſed by ſome to be laid on in great quantities. This is the practice in Staffordſhire, and they get rid of theſe troubleſome weeds, and procure good crops of corn, though at a conſiderable expence in the firſt inſtance.

But in addition to the above crops, ſand-lands of the medium quality are capable of growing barley, clover, wheat, peaſe, oats, potatoes, carrots, and parſnips. It is even remarked by the author of the Suffolk Agricultural Report, that on the ſandy diſtricts, the management varies proportionably with the badneſs of the ſoil; but in one feature it is univerſal, that turnips are every where the preparation, the baſis for both corn and graſs. There is no ſand ſo light, that will not yield, by means of dung or ſheep-fold, this crop. After turnips, barley is generally ſown, then graſs-ſeeds ſucceed, but with variation on bad ſands: trefoil and ray-graſs are choſen, becauſe their duration equals the views of the farmer; they are left from two to four years, and when broken up, a *baſtard*-fallow for rye. The diſcrimination between good and bad farmers, in this arrangement, depends entirely on this point: good ones conſider every thing as ſubſervient to ſheep, conſequently leave their graſſes as long as poſſible; but bad ones, in a hurry for corn, and an immediate advantage, plough too ſoon. All theſe ſandy diſtricts are invariably ſheep-farms, (rabbits only excepted); the flocks feed in winter on turnips, and in ſummer on theſe layers. On the better ſands, frequently the layers are broken up, and peaſe planted to great advantage by hand-dibbles; and this is ſucceeded by a better crop of wheat than when ſown on ſuch layers, kept bare by feeding all the ſummer. Two rows are dibbled on each flag, and they come up ſo regularly as ſeldom to want hoeing. And it is added, that buck-wheat forms in ſome very poor ſpots a variation; and ſmall pieces of tares are ſometimes ſeen: but the ſyſtem he has deſcribed holds good in general. And that in Stamford hundred, on their poorer ſand-ſoils, they are excellent farmers, as well as on the richer loams: their courſe is, turnips, barley, trefoil and ray-graſs, peaſe dibbled, barley; which is admirable management.

The moſt proper crops for arable land of this kind are white oats, tares, turnips, carrots, and buck-wheat. The natural produce, in weeds, is quick-graſs, ſorrel, broom, furze, fern, and heath.

And it has been very properly ſuggeſted by Mr. Middleton, that on very dry light ſands, the great work of tillage, ſuch as ploughing, harrowing, manuring, &c. ſhould be executed as much as poſſible in damp moiſt weather, or even in rain, eſpecially the laſt ploughing and harrowing in of the ſeed. And this practice is ſtated to have always ſucceeded on a farm of dry burning land, called Dunkirk, adjoining the town of Hertford. It is likewiſe further confirmed in the Agricultural Survey for the County of Glouceſter. It is alſo ſtated by an old writer, Mortimer, that in Herefordſhire they are much ſubject to moſs growing upon their ſand-lands, and that they make a great improvement by burning it on the ground, and mixing the aſhes with lime, which they plough in; and that they generally ſow them with rye after this manure, which yields a very great increaſe upon them, and brings on a very good kind of graſs, if they are laid down after a crop or two.

Mr. Deveral of Nottinghamſhire, in the fourth volume of Communications to the Board of Agriculture, ſtates, in reſpect to the breaking up and converting of this ſort of land to graſs, that he has in his occupation, under leaſe, a field of eight acres of good ſand-land, worth 24*s.* *per* acre *per annum*, which had been in graſs fifty years, and was deemed by many not worth ploughing. In 1786 he, by permiſſion of the agent, ploughed it up to take ſome crops, and return it to graſs after one fallow. He firſt ſowed it with Poland oats, and had 56 buſhels (Wincheſter) *per* acre: theſe were cut early, and bruſh or ſtubble turnips ſown, which were good, and eaten on the land by both ſheep and beaſts, until the firſt of May 1787, when he ſowed barley, which proved likewiſe good, producing 48 buſhels (Wincheſter) *per acre*. In 1788, finding the turf not ſufficiently reduced, he again ſowed Poland oats only, and he had a crop equal to the firſt, and again good ſtubble turnips. In 1789 he fallowed and manured with fifteen three-horſe carts-loads of manure, and ten quarters of lime, *per* acre: the turnips were unuſually good, and fed on the land. In 1790 he ſowed barley and graſs-ſeeds: the barley was good, yielding 56 buſhels *per* acre. This land has been in graſs ever ſince, and is, he aſſerts, much improved by ploughing.

And Mr. Thomas Smith of Oxfordſhire began the culture of a field of ſandy ſoil by paring and burning, and ſowed it with turnips; but where furze grew, he was very unſucceſsful. The turnips, although they came up, did not grow to be of any ſervice; but when they ſhot the rough leaf, it turned red, and never flouriſhed, which made him ſuſpicious of the land not bearing out. He therefore laid upon it 50 loads of dirt *per* acre, which he procured out of a road lying near, that had been mended with lime-ſtone. This proved uſeful, but did not make it equal to the parts where the turnips grew well. The oats that were ſown upon it the ſpring following, teſtifying that there wanted ſomewhat more to be done, and ſeeing the road-dirt had been ſomewhat uſeful, and it lying very near, he laid on a quantity the winter following, which proved quite ſufficient to rectify this ſoil; as it bore the year after a good crop of Marlborough peaſe, the next year wheat, and afterwards winter vetches, ſucceeded by a crop of turnips in the ſame year. It was then ſown with oats, and laid down as the other, only with the addition of a buſhel of ray-graſs to the acre. After this proceſs, it proved as uſeful land as any upon the farm; and when he left it, was worth a guinea *per* acre.

Alſo, in Suſſex, Mr. Thomas Baldock had a piece of ground on Burwaſh Down, a dry bank of poor gravel, ſandy top, and the under ſtratum covered with heath, furze, &c. and very ſtony; being ſtubbed and pared, and the turf and ſtubbings burnt and laid in ridges, was ploughed up, and all the large ſtones carted off, to the amount of three or four hundred loads, and uſed for mending the roads. The land was then ſtirred and turned three times more; freſh ſtones pulled up, and carted off; and now, it being got a good depth, (eight or nine inches,) the ridges of aſhes having been moved, and the ground on which they lay being well and deep ploughed, and cleared of ſtones, the aſhes were ſpread over all the ground, with 1600 buſhels of very good ſtone lime. The piece was twelve acres, which was well and deeply harrowed, and lay with a fine deep mould, (except the many ſmall ſtones,) like an onion-bed. This being the middle of July, it was ſown with red and green-rooted turnips, which ſprung very quick, as in four or five days they made their appearance above ground. Early in Auguſt they were hoed, and the middle of September they were again hoed, and then carefully ſet out to a diſtance of about ſixteen inches. There happened many good ſhowers, and the weather was pretty good to the end of October. This brought them on apace, and before Chriſtmas they appeared a very fine crop. A trial was made, from which it appeared that 25 or 26 tons grew on each acre of ground. Theſe turnips were fed off by ſheep, penned on the ground, and in ſuch a manner as to manure the ſoil as evenly as poſſibly; ſome few indeed were carted off. The ſheep finiſhed feeding off in April; the ground was kept ploughed after the ſheep, and the latter end of May ploughed again; in June, 1000 buſhels of lime were ſpread over it, and ploughed in, and turnips ſown in the end of the month. They did well; the crop was very large, and fed off after the 13th of November, till a little before Lady-day, and ploughed after the ſheep as before. Early in April the ground was ploughed, and then ſown with barley and ſeeds; four buſhels *per* acre of barley, and two gallons and a half *per* acre of trefoil. This crop ſprung well, both barley and ſeeds: the barley was rather ſhort, but yet a pretty good crop, four quarters and a half *per* acre. The barley being cut and carried off, in the beginning of September, the ſeeds afforded fine keep for ſheep till the middle of October; they then were taken away, and the ſeeds ſhut up for the winter. In the next ſpring and ſummer they proſpered very much, and produced a fine crop of hay, near two loads *per* acre, which were cut and hayed the beginning of July. The field was ploughed up as ſoon as the hay was carried off, ſtirred again twice, and ſown with white wheat in the beginning of October, two buſhels *per* acre. This crop turned out well, three quarters and a half *per* acre. As now he was very deſirous to lay this piece down to graſs, he chopped up the ſtubble, which being carted off in November, the field was ploughed up to lie the winter. In March it was ploughed again; and having a pretty good compoſt, got previouſly ready the year before, it was brought up in waggons, and conſiſted of good freſh mould 200 cart-loads, of good farm-yard dung 250, and about 100 of very rich ſoil, containing ſcourings of neceſſary vaults, ſoil holes, ſweepings, ſcouring of mud-holes from the waſh of the town and ditches, beſides ſome ſoot and aſhes. This compoſt, and 1000 buſhels of lime, laid in a heap the autumn before, were both ſpread evenly over the ground, and well and deeply harrowed in, and the piece ſown with barley two buſhels and a half *per* acre, and this likewiſe well harrowed in. The ſeeds were then ſown, hay, and moſt other ſorts, in great plenty. The barley and ſeeds came up well and quickly, proſpered through the ſpring, and came on ſurpriſingly; and at harveſt the barley was a fine crop, ſix quarters *per* acre, and ſeeds ſuch as he had ſcarcely ever ſeen any before, ſo very thick and ſtrong. The field was fed off till the end of October, then laid up for the winter; and in March following it was fed cloſe with 200 ſheep, till the beginning of April, and then laid in for mowing. In the beginning of July the graſs was mowed and hayed, and it was a moſt capital crop, near three loads of moſt excellent hay *per* acre. The after-graſs was very great, and fed off with cattle, horſes, and ſheep. This turned out exceedingly good graſs-ground, and he has taken five ſummer crops of hay ſince the firſt, and at a medium more than two loads of hay on an acre. One ſummer the drought checked it much, and the produce was but little better than a load of hay *per* acre. One good dreſſing of compoſt and lime was put on about two years ago. This piece of poor ſandy common, though very expenſive, has paid, he thinks, as well or better than any piece of land of which he has minutely taken notice. The twelve years have coſt very near 60*l.* *per* acre; the crops and ſeeds may be fairly eſtimated at 120*l.* *per* acre. He has little doubt but that the commons on the ſouth of England might turn to a good account, if they could be managed in a ſimilar method.

Sand-*Piper*, in *Ornithology*, a name given by Mr. Pennant to the tringa of Linnæus; becauſe moſt of the ſpecies belonging to this genus are converſant about ſhores, and their note is whiſtling or piping.

Sand-*Snake*. See Ammodytes.

Sand-*Swallow*, in *Ornithology*. See Hirundo *Viparia*.

SANDA, in *Ancient Geography*, a town of Hiſpania, upon the borders of the country of the Cantabri, weſt of Flaviobriga, and north-eaſt of Juliobriga.

Sanda, in *Geography*, a ſmall iſland annexed to the pariſh of Southend, county of Argyle, Scotland, is ſituated near the Mull of Kintyre, in the northern channel. It extends about a mile and a half in length, and half a mile in breadth, and is particularly famed in ancient Scottiſh hiſtory, as the ordinary place of rendezvous for the Daniſh fleets, in their excurſions to the coaſts of Scotland: hence it acquired the name of Avona Porticoſa, and is ſtill ſometimes called Aven. Sanda is nevertheleſs the more ancient, as well as the more common appellation, as appears from St. Columba's Life by Adomnan. In this iſland are the remains of an old Popiſh chapel, dedicated to St. Columba. The iſland is almoſt entirely appropriated as paſturage for ſheep, as are likewiſe two ſmall iſlets adjoining to it on the eaſt. The ſound of Sanda abounds with fiſh of various kinds, which are caught in great quantities by the inhabitants of the Mull and of Sanda. About a league from this iſland lies a very dangerous rock, on which veſſels are frequently wrecked. Sinclair's Statiſtical Account of Scotland, vol. vii. 8vo. 1792. Carliſle's Topographical Dictionary of Scotland, 4to. 1813.

SANDABAD, a town of Perſia, in the province of Irak; 21 miles S.S.W. of Hamadan.

SANDABADA, in *Ancient Geography*, the name of one of the rivers of India which diſcharged themſelves into the Indus. Ptolemy.

SANDAHL, in *Geography*, a town of the Birman empire, on the Irawaddy, occupied by the keepers of the royal elephants; 4 miles W. of Ava.

SANDAKAN Bay, a bay on the eaſt coaſt of the iſland of Borneo. N. lat. 5° 42′. E. long. 118° 20′.

SANDAL, a lake of Ruſſia, in the government of Olonetz, about 24 miles long and 2 broad; 48 miles N. of Petrozavodſk.

Sandal, *Sandalium*, σανδαλιον, in *Antiquity*, a rich kind of ſlipper, worn on the feet, made of gold, ſilk, or other precious ſtuff, uſed by the Roman and Greek ladies; conſiſting of a ſole, with a hollow at one extreme to embrace the ankle, but leaving the upper part of the foot bare.

Terence ſpeaks of this ſandal, "Utinam tibi commitigari videam ſandalio caput:" *I wiſh ſhe would break your head with her ſandal.*

Apollo was ſometimes called *Sandaliarius*, *ſandal-maker*; the reaſon of which appellation has given great perplexity to the critics. Some derive it from a ſtreet called Sandaliarius, chiefly inhabited by ſandal-makers, in which that god had a temple; but others, with more probability, derive the name of the ſtreet from that of the god, and take Apollo to have been thus called from his effeminate dreſs, as if he wore women's ſandals.

Sandal is alſo uſed for the ſhoe or ſlipper worn by the pope, and other Romiſh prelates, &c. when they officiate; being ſuch as is ſuppoſed to have been worn by St. Bartholomew.

Alcuin obſerves, that there was ſome difference between the ſandals of biſhops, prieſts, and deacons. Monks were not allowed to wear ſandals, except in travelling; as is obſerved by Du-Cange, Salmaſius, &c.

Sandal is alſo the name of a ſort of ſlipper ſtill worn by ſeveral congregations of reformed monks.

It conſiſts of no more than a mere leathern ſole, faſtened with latches or buckles, all the reſt of the foot being left bare.

The Capuchins wear ſandals, the Recollects, clogs; the former are of leather, the latter of wood.

Sandal *Bricks*. See Brick.

Sandal-*Wood*, in *Botany*. See Santalum and Sirium.

SANDALA, in *Geography*, a town of Africa, in the kingdom of Jemarrow.

SANDALARIUM, or Sandalarius *Vicus*, in *Ancient Geography*, the fourth quarter of Rome, in which was a temple of Apollo, built by Auguſtus.

SANDALIGERULI, among the *Ancients*, ſervants whoſe buſineſs it was to carry their maſters' or miſtreſſes' ſandals.

SANDALIUM, in *Ancient Geography*, a country of Aſia, in Piſidia.—Alſo, an iſland of Aſia, on the coaſt of Ionia, and of the three "Trogilia" of Pliny.

SANDALO, in *Geography*, a town of Italy, in the department of the Lower Po; 13 miles S.E. of Ferrara.

SANDANUS, in *Ancient Geography*, a river of Thrace, towards the country named Pallené, according to Plutarch, who ſays, that Philip was ſtruck by an arrow, in attempting to force the paſſage of this river.

SANDAPELONES, among the Romans, a kind of porters, who were employed in carrying the bier called *ſandapila*. Ptiſc. in voc.

SANDAPILA, among the Romans, a ſort of bier uſed for carrying out the bodies of people of low circumſtances.

It was not a bed, but a kind of wooden cheſt, made of a few boards nailed together, and was uſually burnt along with the body.

SANDARACA, in *Ancient Geography*, a port of Aſia, in Bithynia, on the Euxine ſea.

SANDARACH, in the works of ſome of the ancients, a name by which the yellow matter collected on the legs of bees is called; others of them called it *erithace*, and ſome *ambroſia*. We uſually eſteem this to be wax; but the experiments of Reaumur, and others, evidently prove, that it is not real wax; though it contains the matter of which wax is to be made: it is only the farina of flowers, collected into lumps, and probably ſerves the bees as food; and after it has afforded them nouriſhment, ſuffers ſome change in their bowels, by which it is converted into the ſubſtance we call wax. See Pain *d'abeille*.

Sandarach, *Sandaracha*, in *Natural Hiſtory*, &c. a native mineral; or a preparation of orpiment, made by fuſing it by a cloſe fire into a red friable maſs. See Orpiment.

Sandaracha is the ſame with what is by ſome otherwiſe called *realgar*. See Arsenic, *Ores of*, ſpecies 3, and § v. and vi. under Arsenic.

It is ſometimes alſo called *ſandaracha Græcorum*, in oppoſition to the gum ſandarach. Some diſtinguiſh two ſorts of Grecian ſandarach: the *natural*, which is the firſt above deſcribed; and the *factitious*, which is only ceruſſe exalted by the fire, and burnt into a kind of minium. Both the one and the other are poiſons.

Sandarach, *Gum*, or *Sandaracha Arabum*, a reſinous juice oozing out of the trunk and thick branches of ſeveral kinds of juniper, in the warmer climates, and particularly on the coaſts of Africa, by inciſions made in the heats of the ſummer.

This juice concretes into ſemipellucid, pale yellowiſh tears or globes, reſembling maſtich, but larger: the reſin, thus formed, has a light agreeable ſmell, but no conſiderable taſte; it diſſolves in rectified ſpirit, and in oils both expreſſed and diſtilled; but being nearly a pure reſin, yields little or nothing to watery liquors.

The ſmall or common juniper yields very little ſandarach; but its fruit yields oils, waters, ſalts, ſpirits, and extracts of ſome repute in medicine.

The gum ſandarach is an ingredient in varniſh, and hence has been called *vernix*. With this, melted in oil of turpentine, is made the factitious varniſh now uſed by painters and cabinet-makers. It is alſo reduced into an impalpable powder, called pounce, uſed to prevent paper from imbibing ink.

Gum ſandarach has been ſometimes given internally in diarrhœas and hæmorrhages, its doſe being from ten grains to half a drachm. It is alſo ſometimes preſcribed in gonorrhœas and the fluor albus; but it has been chiefly employed externally in corroborant, nervine, traumatic applications. With us it is hardly ever uſed for any medicinal purpoſes.

The beſt is in fine white tears, free of duſt; the Engliſh, Swedes, &c. drive a conſiderable trade with it.

Some will have it that the gum of the juniper is not the right ſandarach, but that of the oxycedrus, or leſſer cedar.

SANDARESUS, a gem, the chief property of which, according to Pliny, is its being pellucid, and containing in its ſubſtance a kind of gold-coloured globules; which are likewiſe tranſparent, when ſeen betwixt one and the fire.

SANDARLIK, in *Geography*, a town of Aſiatic Turkey, in the province of Natolia, ſituated on the N. ſide of a bay called the "Gulf of Sandarlik;" 4 miles S. of Pergamo. N. lat. 38° 56′. E. long. 26° 53′.

SANDARUS, in the *Materia Medica*, the original name of the gum, which later ages have, by corruption of the name, called *ſandarax*, or *ſandaracha*. The latter name is peculiarly improper, as it confounds this innocent gum with a poiſonous mineral of the arſenic or orpiment kind. See Sandarach.

SANDASTER, in *Natural Hiſtory*, a kind of gem mentioned by Pliny, with gold-coloured globules in it that ſhone like ſtars, and were in number and diſpoſition not unlike the ſeven ſtars.

SANDAU, in *Geography*, a town of Bohemia, in the circle of Leitmeritz; 6 miles W.N.W. of Leypa.—Alſo, a town of the duchy of Magdeburg, on the Elbe; 48 miles N.N.E. of Magdeburg.—Alſo, a town of Bohemia, in the circle of Pilſen; 12 miles N.W. of Pilſen.

SANDAVA, in *Ancient Geography*, a town of Dacia. Ptolemy.

SANDAY, in *Geography*, one of the iſlands of Orkney, Scotland, is ſituated to the north of the Mainland of Orkney, between the iſlands of Stronſa and North Ronaldſay. Its extreme length, from ſouth-weſt to north-eaſt, is about twelve miles; and its medium breadth about a mile and a half. In point of ſhape it ſomewhat reſembles the letter Y, but its coaſt, on all its ſides, is extremely irregular, being much indented by the inroads of the ocean. Hence it is difficult to compute its ſuperficial contents; which, however, are ſtated by Barry at nineteen ſquare miles. Except on one ſide, where the ground riſes into a ridge of moderate height, this iſland may be characteriſed as flat and level throughout its whole extent. The greater part of the ſoil here is of a ſandy nature; and from this circumſtance, it would appear, the preſent name of the iſland was originally derived. Almoſt two-thirds of Sanday are under arable cultivation; and though the farmers are extremely defective in their modes of huſbandry, they nevertheleſs raiſe a quantity of grain, not only ſufficient for home conſumption, but capable of furniſhing above a thouſand bolls annually for exportation, even in years when the crops are but moderately plentiful. Here, as in moſt of the Orkney and Shetland iſles, the ſmall farmers are employed during ſummer in the manufacture of kelp, which is very abundant on the ſhores of this iſland; and occaſionally in fiſhing, for which latter employment no ſituation can be more favourable than Sanday. This, however, has not yet had the effect of producing among the inhabitants fiſhermen by profeſſion excluſively, though there can be no doubt that fiſhing would be a more profitable occupation than tilling ſuch trifling farms as they uſually poſſeſs.

From the long, ſtraggling figure of this iſland, and the flatneſs of its ſhores, it is peculiarly dangerous to ſhips navigating this part of the Northern ocean. Barry ſtates that within the laſt 50 years, upwards of half a million of property has been loſt by the numerous wrecks which have taken place on Sanday, and the ſmall iſland of North Ronaldſay. What contributes much to theſe accidents, is the frequency of fogs: but the want of places of ſafety, to which reſort may be had in tempeſtuous weather, cannot be urged; for there are two harbours in Sanday only, Rettletoft on the ſouth, and Otterſwick on the north, that, at all times of tides, are equally ſafe and acceſſible. As theſe harbours lie nearly oppoſite to each other, and are ſeparated only by a narrow, though beautiful plain, the ſea, in the high tides of ſpring and harveſt, ſometimes ſeems to threaten the diviſion of the iſland into two. Indeed, if tradition may be believed, ſeveral encroachments have already been made here by the ocean at no very diſtant period; one of which is ſaid to have formed the bay of Otterſwick, or Odinſwick, now a league in length, by overwhelming an extenſive tract of foreſt land; and the many roots of trees that are, in ſpring tides, occaſionally ſeen in this place, on the receſs of the water, give, it muſt be owned, ſome colour of truth to the tradition. To this inſtance may be added another; Runnabreck, a rock, which is now two miles from the ſhore, is reported to have formerly conſtituted a part of the iſland.

Sanday contains neither marble nor whinſtone, ſo common in the other Orkney iſlands; and free-ſtone is only found in one diſtrict, oppoſite to Edday, whoſe foundation is chiefly free-ſtone. Towards the weſt ſide of the iſland, for the ſpace of 200 feet, the ſhore conſiſts of a ſhelving rock, that bears ſome marks of having once been in a liquid ſtate, and undergone ſome degree of calcination. This place is called Heclabir; as ſome think, from the reſemblance it is ſuppoſed to have had to the famous Icelandic volcano on mount Hecla; but if any ſuch has ever exiſted here, tradition is ſilent reſpecting it. Theſe rocks conſiſt principally of pudding-ſtone, or breccia.

Sanday is divided into two pariſhes, *viz.* the united pariſh of Croſskirk and Burneſs, and the pariſh of Ladykirk, which together contain, according to the parliamentary returns of 1811, 372 houſes, and 1797 inhabitants. Hiſtory of the Orkney Iſlands, by the Rev. Dr. Barry, 2d edition, with corrections and additions by the Rev. James Headrick, Lond. 4to. 1808. Carliſle's Topographical Dictionary of Scotland, 4to. 1813. Sinclair's Statiſtical Account, vol. vii.

SANDBACH, a town of Germany, in the county of Wertheim; 10 miles S.S.W. of Aſchaffenburg.

SANDBACH, a market-town in a pariſh of the ſame name, hundred of Nantwich, deanery of Middlewich, and county palatine of Cheſhire, England, is ſituated on an eminence near the river Wheelock, at the diſtance of 25 miles E. by W. from the city of Cheſter, and 162 miles N.W. from London. Here is a good corn-market held on Thurſday, and there is another for butcher's meat on Saturday, beſides which there are two annual fairs, on Eaſter Tueſday, and the Thurſday before the 10th of September. The firſt-mentioned market and the fairs were granted by queen Elizabeth in 1578, at the requeſt of ſir John Radcliffe. At the September fair, in the year 1651, a party of the king's horſe, (Whitelocke ſays a thouſand,) on their retreat from the battle of Worceſter, were attacked here by the country people, who killed many of them, and took a number of priſoners. Sandbach was formerly noted for the excellence of its ale, and alſo for the manufacture of worſted yarn and ſtuffs for country wear. The church is an ancient ſtructure, containing ſepulchral memorials to the families of Jackſon of Bechton, Leigh, Moulſon, and Powis. The Leverſage chapel, or oratory, was confirmed to the family of Leverſage in 1589. Here is a free-ſchool, founded in 1718 by Francis Wells, eſq. who endowed it with lands, now yielding a clear annual rent of 20*l.*, which, joined to the intereſt of other donations, is appropriated for the education of 20 boys in reading, writing, and arithmetic.

The pariſh of Sandbach compriſes the townſhips of Sandbach, Arcliffe, Bechton, Bradwell, Haſſal, Wheelock, Church-Hulme, Cotton, Cranage, Gooſtrey, Leeſe, and Tremlow. The town of Sandbach itſelf contains, according to the late population cenſus, 529 houſes, and 2311 inhabitants. The manor anciently belonged to a family of its own name, from which it paſſed, by female heirs, firſt to the Leghs of Booths, and afterwards to the Radcliffes. It is now the property of lord Crewe, whoſe anceſtor, ſir Randle Crewe, purchaſed it from ſir John Radcliffe in the reign of queen Elizabeth. Adjoining to the town is a ſeat called Abbey-Field, the property and reſidence of John Ford, eſq., which is ſaid to have been formerly a cell to the abbey of Dieulacres. Lyſons's Magna Britannia, Cheſhire, vol. ii. 4to. 1810. Beauties of England and Wales, vol. ii. by John Britton and E. W. Brayley, Lond. 8vo. 1801.

SANDBERG, a mountain of Sileſia, in the principality of Schweidnitz; 4 miles S.S.E. of Waldenburg.

SANDE, a town of Portugal, in the province of Beira; 3 miles N. of Lamego.—Alſo, a town of Norway, in the province of Aggerhuus; 10 miles from Stromſoe.

SANDECZ, a town of Poland, in the palatinate of Cracow, belonging to Auſtria; 42 miles S.E. of Cracow.

SANDEFIOERD, a ſea-port town of Norway, in the province of Chriſtiania, with a good harbour and wharf; 6 miles S. of Tonſberg.

SANDEL BOSCH, or *Sundana Iſland*, an iſland in the Eaſt Indian ſea, about 80 miles from E. to W., and from 15 to 16 in breadth. S. lat. 9° 35′ to 10° 15′. E. long. 119° to 120′.

SANDELAH, a town of Hindooſtan, in Oude; 23 miles N.W. of Lucknow.

SANDEMANIANS, in *Eccleſiaſtical Hiſtory*, a modern ſect that originated in Scotland about the year 1728; where it is at this time diſtinguiſhed by the name of *Glaſſites*, after its founder Mr. John Glaſs, who was a miniſter of the eſtabliſhed church in that kingdom; but being charged with a deſign of ſubverting the national covenant, and ſapping the foundation of all national eſtabliſhments by the kirk judicatory, was expelled by the ſynod from the church of Scotland. His ſentiments are fully explained in a tract publiſhed at that time, entitled, "The Teſtimony of the King of Martyrs," and preſerved in the firſt volume of his works. In conſequence of Mr. Glaſs's expulſion, his adherents formed themſelves into churches, conformable in their inſtitution and diſcipline to what they apprehended to be the plan of the firſt churches recorded in the New Teſtament. Soon after the year 1755, Mr. Robert Sandeman, an elder in one of theſe churches in Scotland, publiſhed a ſeries of letters addreſſed to Mr. Hervey, occaſioned by his Theron and Aſpaſio, in which he endeavours to ſhew, that his notion of faith is contradictory to the ſcripture account of it, and could only ſerve to lead men, profeſſedly holding the doctrines commonly called Calviniſtic, to eſtabliſh their own righteouſneſs upon their frames, inward feelings, and various acts of faith. In theſe letters Mr. Sandeman attempts to prove, that faith is neither more nor leſs than a ſimple aſſent to the divine teſtimony concerning Jeſus Chriſt, recorded in the New Teſtament; and he maintains, that the word faith, or belief, is conſtantly uſed by the apoſtles to ſignify what is denoted by it in common diſcourſe, *viz.* a perſuaſion of the truth of any propoſition, and that there is no difference between believing any common teſtimony, and believing the apoſtolic teſtimony, except that which reſults from the nature of the teſtimony itſelf. This led the way to a controverſy, among thoſe who were called Calviniſts, concerning the nature of juſtifying faith; and thoſe who adopted Mr. Sandeman's notion of it, and who took the denomination of Sandemanians, formed themſelves into church order, in ſtrict fellowſhip with the churches of Scotland, but holding no kind of communion with other churches. The chief opinions and practices in which this ſect differs from other Chriſtians, are, their weekly adminiſtration of the Lord's Supper; their love-feaſts, of which every member is not only allowed but required to partake, and which conſiſt of their dining together at each other's houſes in the interval between the morning and afternoon ſervice; their kiſs of charity uſed on this occaſion, at the admiſſion of a new member, and at other times, when they deem it to be neceſſary or proper; their weekly collection before the Lord's Supper for the ſupport of the poor, and defraying other expences; mutual exhortation; abſtinence from blood and things ſtrangled; waſhing each other's feet, the precept concerning which, as well as other precepts, they underſtand literally; community of goods ſo far as that every one is to conſider all that he has in his poſſeſſion and power as liable to the calls of the poor and church, and the unlawfulneſs of laying up treaſures on earth, by ſetting them apart for any diſtant, future, and uncertain uſe. They allow of public and private diverſions ſo far as they are not connected with circumſtances really ſinful; but apprehending a lot to be ſacred, diſapprove of playing at cards, dice, &c. They maintain a plurality of elders, paſtors, or biſhops, in each church, and the neceſſity of the preſence of two elders in every act of diſcipline, and at the adminiſtration of the Lord's Supper. In the choice of theſe elders, want of learning, and engagements in trade, &c. are no ſufficient objection; but ſecond marriages diſqualify for the office; and they are ordained by prayer and faſting, impoſition of hands, and giving the right hand of fellowſhip. In their diſcipline they are ſtrict and ſevere, and think themſelves obliged to ſeparate from the communion and worſhip of all ſuch religious ſocieties as appear to them not to profeſs the ſimple truth for their only ground of hope, and who do not walk in obedience to it. We ſhall only add, that in every church tranſaction, they eſteem unanimity to be abſolutely neceſſary. From this abſtract of the account which they have publiſhed of their tenets and practices, it does not ſeem to be probable that their number ſhould be very conſiderable, nor is it any matter of ſurpriſe that this ſect ſhould have declined.

SANDERAY, in *Geography*, one of the weſtern iſlands of Scotland, comprehended in the pariſh of Barray and county of Inverneſs, is ſituated between the iſlands of Watteriea and Pabba, in N. lat. 56° 52′. It is diſtant about five miles from the iſland of Barray; is two miles in length, and nearly the ſame in breadth. The inhabitants are eſtimated at about fifty in number, and are chiefly occupied in the paſturage of black cattle and ſheep. On this iſland are the remains of one of thoſe antiquarian curioſities denominated Duns. Tradition aſcribes its formation to the Danes. Sinclair's Statiſtical Account of Scotland, vol. xiii. 8vo. 1794. Carliſle's Topographical Dictionary of Scotland.

SANDERLING, or Curwillet, in *Ornithology*, is the charadrius calidris of Linnæus; its body is of a more ſlender form than that of others of the ſame genus, its bill is an inch long, weak and black; the head and hind part of the neck are aſh-coloured, and marked with oblong black ſtreaks, the back and ſcapulars are of a browniſh-grey, edged with duſky white; the whole under ſide of the body is white, ſlightly clouded in ſome places with brown; the tail conſiſts of twelve ſharp-pointed feathers of a deep aſh-colour, and the legs are black. This ſpecies is found, in large flocks, on the Corniſh ſhores.

SANDERS, Nicholas, in *Biography*, an Engliſh Catholic prieſt, was born at Charlewood, in Surry, and received his claſſical education at Wincheſter college, whence, in 1548, he was elected to a ſcholarſhip of New College in the univerſity of Oxford. In 1557 he was promoted to the profeſſorſhip-royal of canon law in the univerſity. Being zealouſly attached to the papal communion, he was deprived of that office after the acceſſion of queen Elizabeth, and in 1560 was compelled to ſeek for ſafety in exile. He now went to Rome, where he was ordained prieſt, and created doctor of divinity. After this he was patronized by cardinal Hoſius, whom he accompanied when he went in the capacity of legate to preſide in the council of Trent, as well as to his biſhopric in Poland. Returning from that country he went to Louvain, where he was appointed to the profeſſorſhip-royal of divinity. Here he publiſhed, in 1571, his treatiſe "De Viſibili Monarchia Eccleſiæ, &c." in which he contends for the ſuperiority of the popes over general councils, and endeavours to maintain the higheſt pretenſions of the Roman ſee. On account of this work he was taken under the immediate patronage of pope Pius V., who would unqueſtionably have given him ſome ſubſtantial marks of his favour, had not the death of his holineſs taken place. By Gregory XIII. Sanders was ſent to Spain on a miſſion, and from this country he was induced, by the warmth of his zeal for the popiſh cauſe, to undertake a kind of military miſſion into Ireland, with the deſign of encouraging the Catholics who had taken up arms againſt queen Elizabeth. Fortunately government was too firmly fixed to be ſhaken by their efforts, and Sanders had the mortification to be a witneſs of their ill ſucceſs and ruin. In theſe circumſtances, well knowing that if he fell into the hands of the Engliſh, he would be probably doomed to ſuffer puniſhment as a traitor, he made his eſcape, and wandered among the woods and mountains till death put an end to his miſery, in the year 1583. He was author of a work entitled "De Origine ac Progreſſu Schiſmatis Anglicani, Lib. iii." which was publiſhed in 1585 at Cologne, and has been frequently reprinted in Catholic countries. Bayle, in ſpeaking of this work, ſays "it diſcovers a great deal of paſſion and very little accuracy, two qualities which generally attend each other." The errors and mis-ſtatements contained in this work have been noticed by biſhop Burnet. Sanders was author alſo of "De Clave David, ſeu regno Chriſti;" "De Martyrio quorundam tempore Hen. VIII. et Eliz.;" "The Life and Manners of the Heretic Thomas Cranmer;" and ſome controverſial pieces.

Sanders-*Blue*. See Verditer.

Sanders-*Wood*, in *Botany*. See Santalum, and Saunders.

SANDERSLEBEN, in *Geography*, a town of Germany, in the principality of Anhalt-Deſſau, on the Wipper; 16 miles S.E. of Quedlinburg. N. lat. 51° 38′. E. long. 11° 37′.

SANDERSON, Robert, in *Biography*, a learned Engliſh prelate, was born at Rotheram, in Yorkſhire, in the year 1587. He was educated in the grammar-ſchool of his native town, where he diſcovered conſiderable talents, and an uncommon ſhare of diligence. In his 13th year he was ſent to Oxford, where he was admitted into Lincoln college. Here he generally devoted eleven hours a day to cloſe ſtudy, by which means he was enabled, at an early period of life, to go through a whole courſe of philoſophy, and to obtain a moſt accurate and intimate acquaintance with all the moſt celebrated claſſical authors. In 1604 he was admitted to the degree of B.A., and two years afterwards he was elected fellow of his college. In 1608, having taken his degree of M.A., he was choſen reader of logic in his college, and he diſcharged the duties of that office with ſuch ability that he was re-choſen to it during the ſucceeding year. He alſo diſtinguiſhed himſelf greatly in the capacity of college tutor. In 1611 he was admitted to holy orders by Dr. King, biſhop of London, who at firſt ordained him deacon, and afterwards prieſt. Two years after this he was choſen ſub-rector of Lincoln college, which office he held ſeveral years. In 1614 he offered himſelf as a candidate for one of the proctorſhips of the univerſity, which he did not at that time obtain. But by the publication of his lectures on logic in the following year, under the title of "Logicæ Artis Compendium," he acquired ſo high a reputation, that at the next election he was choſen ſenior proctor without oppoſition. In this ſituation he conducted himſelf ſo well as to ſecure univerſal reſpect and eſteem. In 1617 he took his degree of B.D., and in the following year he was preſented to the valuable rectory of Wibberton, near Boſton, in Lincolnſhire. This living he ſoon reſigned on account of the unhealthineſs of the ſituation, and about the ſame time he was preſented with the rectory of Boothby Pannell, in the ſame county. Soon after his acceptance of this benefice, he reſigned his fellowſhip, and married. About the time of his marriage he was made prebend of the collegiate church of Southwell. Not ſatisfied merely with the aſſiduous exerciſe of his pulpit ſervices, he rendered himſelf eſteemed and beloved by the affection and regard for the welfare of his pariſhioners, which he diſcovered in his paſtoral and friendly viſits. He laboured inceſſantly in endeavouring to reconcile differences, and in preventing law-ſuits, both in his own pariſh and in the neighbourhood; he conſoled the dejected by his advice and cheerful diſcourſe; and liberally communicated pecuniary aſſiſtance to thoſe who were in want. "Thus," ſays his biographer, "he went on in an obſcure and quiet privacy, doing good daily both by word and deed, as often as any occaſion offered itſelf; yet not ſo obſcurely, but that his very great learning, prudence, and piety, were much noted and valued by the biſhop of his dioceſe, and by moſt of the nobility and gentry of that county."

In the year 1625 Mr. Sanderſon was choſen one of the clerks in convocation for the dioceſe of Lincoln; as he was alſo in all the ſubſequent convocations during the reign of king Charles I. Four years afterwards he was inſtalled into a prebend in the cathedral church of Lincoln. In 1631 he was appointed one of the chaplains to the king. During his firſt month's attendance at court in his new capacity, the king put to him many caſes of conſcience, which he was enabled to ſolve in a manner that gave his majeſty entire ſatisfaction. At the end of the month the king told him "he ſhould long for next November, for he was reſolved to have a more intimate acquaintance with him when the month and he returned." When the time arrived, it is ſaid that the king was never abſent from his ſermons, and was accuſtomed to ſay, "I carry my ears to hear other preachers, but I carry my conſcience to hear Mr. Sanderſon, and to act accordingly." In the year 1636, when the court was at Oxford, Mr. Sanderſon, who was in his majeſty's ſuite, ſhared in the honours which, on that occaſion, were conferred on ſeveral of the clergy and others by being created doctor of divinity. In 1642 he was appointed by the king regius-profeſſor of divinity of Oxford, and canon of Chriſt-church, but he was prevented by the civil wars from entering on his profeſſorſhip till four years afterwards, and even then he held it undiſturbed only little more than twelve months. In the year 1643, when the parliament ſummoned the famous aſſembly of divines to meet at Weſtminſter, for the purpoſe of deliberating on eccleſiaſtical affairs, Dr. Sanderſon was nominated one of that body; but he declined taking his ſeat among them, and afterwards refuſed to take, at firſt the Covenant, and then the Engagement. The conſequence of his refuſal to take the covenant, was the ſequeſtration of his rectory in 1644; but ſo great was his reputation for piety and learning, that he was not deprived of it. He was the principal agent in drawing up "The Reaſons of the Univerſity of Oxford againſt the Solemn League and Covenant, the Negative Oath, and the Ordinances concerning Diſcipline and Worſhip:" and when the parliament had ſent propoſals to the king for a peace in church and ſtate, his majeſty deſired that Dr. Sanderſon, with others, ſhould attend him, and give him advice how far he could, with a good conſcience, comply with them. This requeſt was not, at the time, complied with; but in the years 1647 and 1648, the opportunity was given him of being with the king when he was at Hampton Court and at the Iſle of Wight. While he was at the former place, by the king's deſire, he drew up a treatiſe containing his ſentiments on the propoſal which parliament had made for the abolition of epiſcopacy, as inconſiſtent with monarchy. What he wrote upon the ſubject was publiſhed in 1661, under the title of "Epiſcopacy, as eſtabliſhed by the Law of England, not prejudicial to Regal Power." In 1648 Dr. Sanderſon, on account of his adherence to the royal cauſe, was ejected from his profeſſorſhip and canonry at Oxford by the parliamentary viſitors, and withdrew from his living of Boothby Pannell. He was not, however, ſuffered to remain long in quiet, he was carried away priſoner by the parliament party to Lincoln, for the purpoſe of being exchanged for Mr. Clarke, a Puritan divine, who had been thrown into priſon by the royaliſts. He was accordingly releaſed and permitted to go back to his living, but he was frequently ſubject to ill-treatment, to danger, and loſs of property. Dr. Sanderſon was ſo often applied to for the reſolution of caſes of conſcience, that his correſpondence on queſtions of this nature occupied at leaſt the proportion of an entire day in a week. At the requeſt of the Hon. Mr. Boyle he ſet about a work on caſes of conſcience, under the title "De Obligatione Conſcientiæ." On the reſtoration of king Charles II. Dr. Sanderſon was reinſtated in his profeſſorſhip, and in the canonry of Oxford, and very ſoon afterwards he was nominated to the biſhopric of Lincoln, and was conſecrated in October 1660, when he was upwards of 73 years of age. In the following year he was one of the commiſſioners at the Savoy conference, and he had a principal hand in the alterations which were made in the liturgy. No man ever deſerved a biſhopric more than Dr. Sanderſon, as no man could take more pains in diſtributing, for the beſt of public purpoſes, the wealth with which he was now endowed. He died in 1663, having enjoyed his high dignity a little more than two years. He was a man of great piety, and of the moſt unblemiſhed manners. His great learning entitled him to a conſiderable rank among his contemporaries, and he poſſeſſed an extenſive acquaintance with the fathers, ſchoolmen, caſuiſtical and controverſial divinity, and with ancient as well as modern hiſtory. He poſſeſſed a very extraordinary memory, and could repeat almoſt the whole of Horace and Juvenal and Perſius, and he was accuſtomed to ſay that he took as much delight when alone in the repetition of an ode in Horace, as others do in playing a tune on ſome inſtrument. He was held in high eſteem among his contemporaries, particularly by the celebrated Dr. Hammond, who ſpeaks of him in terms of peculiar commendation. His attachment to the church of England was ſincere and zealous, but he was ſteadily averſe from all harſh meaſures againſt the Puritans. His principal works, beſides thoſe already mentioned, are, "Phyſicæ Scientiæ Compendium;" "Sermons;" "Nine Caſes of Conſcience reſolved;" "De Juramenti Promiſſorii Obligatione Prælectiones Septem;" "Diſcourſe concerning the Church," in various particulars; "The Hiſtory and Antiquities of the Cathedral at Lincoln," publiſhed in Peck's "Deſiderata Curioſa." Biog. Brit.

Sanderson, Robert, an antiquary of conſiderable note, was a younger ſon of Chriſtopher Sanderſon, a juſtice of the peace for the county palatine of Durham, who had ſuffered for his attachment to the Stuart family during the civil war. He was born July 27, 1660, at Eggleſton-hall, in that county, and entered a ſtudent of St. John's college, Cambridge, under the tuition of Dr. Baker, April 7, 1683. He remained in the univerſity ſeveral years, and was contemporary with the celebrated Matthew Prior. Removing to London, he afterwards turned his attention to the law, and was appointed clerk of the rolls, in the Rolls chapel. He contributed largely to the compilation of Rymers's Fœdera, and was excluſively concerned in arranging the three concluding volumes, from 18 to 20, which he ſucceſſively dedicated to kings George I. and II.

In 1704 he publiſhed a tranſlation of "Original Letters from William III. whilſt Prince of Orange, to Charles II., Lord Arlington, and others, with an Account of the Prince's Reception at Middleburgh, and his Speech on that Occaſion;" dedicating the book to lord Woodſtock. He alſo wrote "A Hiſtory of Henry V." in the way of annals, in nine volumes, of which the firſt four have been loſt, and the others ſtill remain in manuſcript amongſt his papers. In 1714 he became a candidate for the place of hiſtoriographer to queen Anne, and received a very handſome offer of aſſiſtance from Matthew Prior, at that time ambaſſador to the court of France. His ſucceſs, however, was prevented by the change of miniſtry which ſucceeded on the queen's death. On the 28th of November, 1726, he was appointed uſher of the high court of chancery, by ſir Joſeph Jekyll, the maſter of the rolls. He ſucceeded, in 1727, by the death of an elder brother, to a conſiderable landed property in Cumberland, the North-Riding of Yorkſhire, and Durham. After this, though he continued chiefly to reſide in London, he occaſionally viſited his country ſeat at Armathwaite caſtle, a manſion pleaſantly ſituated on the banks of the Eden, about ten miles from Carliſle. He was married four times: for the laſt time to Elizabeth Hickes of London, when he had completed his 70th year. He died Dec. 25, 1741, at his houſe in Chancery-lane, in the 79th year of his age, and was buried in Red-Lion-Fields. He was a devout man, well read in divinity, attached to the forms of the church of England, and very regular in his attention to public and private worſhip. He was ſlightly acquainted with the Hebrew language, and converſant in the Greek, Latin, Spaniſh, Italian, and French. He made a choice collection of books in various languages, and left behind him ſeveral volumes of MSS., relating chiefly to hiſtory, and the court of chancery, and including a tranſcript of Thurloe's State Papers. He kept a diary, in which he noted down, with minute attention, the ſlighteſt occurrences of his life. As he left no iſſue, his eſtates deſcended, on the death of his laſt wife, in 1753, to the family of Margaret, his eldeſt ſiſter, married to Henry Milbourne, of Newcaſtle-upon-Tyne; whoſe great-grandſon, William Henry Milbourne, was high ſheriff of Cumberland in 1794.

Sanderson's *Hope*, in *Geography*, a cape on the coaſt of America, in Davis's Straits. N. lat. 66° 20′. W. long. 67′.

SANDEVER, or Sandiver, called alſo the *gall* and the *axungia of glaſs*, is the recrement of glaſs; or the white porous ſcum or ſediment that ariſes in large crucibles employed in the manufacture of glaſs.

This ſubſtance appears to be a confuſed maſs, conſiſting of all thoſe ſalts contained in common alkalies, which readily melt at ſomewhat leſs than a glaſs-making heat, and are either naturally conſiderably volatile, or have little if any affinity for ſilex, and do not unite in the compoſition of glaſs, but being ſuperficially lighter, riſe to the top. There is another heterogeneous ſubſtance alſo, called ſandiver, which ſometimes is found at the bottom of the pots, and is taken out when the whole is worked off. The nature of this is very different from the other, and conſiſts apparently of a vitrified maſs of arſenic and earthy impurities. But the ſcum, or proper glaſs-gall, is almoſt entirely ſaline. When laded out and cooled it forms a white crumbly maſs, ſometimes quite white, and at other times brown and fouled, and ſtrongly ſaline, but not very uniform in its compoſition, being ſometimes merely ſalt, often very bitter, probably as common ſalt or ſulphate of potaſh predominate. Glaſs-gall is very volatile in a ſtrong fire, ſo that it is conſtantly diſperſing from off the ſurface of the glaſs in a denſe vapour, at firſt thick and black, afterwards whiter, which very powerfully corrodes the top of the crucible in its paſſage. If the fuſion were continued long enough, the whole would be diſperſed nearly in this way, but it is generally ſcummed off with iron ladles, and ſold to metal-refiners as a powerful flux. As part of the alkali itſelf certainly is diſſipated by the continuance of fire, partly before it can unite with the ſilex, partly from the glaſs itſelf, much of the corroſion of the pots muſt be owing to this circumſtance, and probably it muſt alſo unite in part with the glaſs-gall, which renders it ſlightly deliqueſcent. An abundance of this glaſs-gall is one of the greateſt inconveniences that the glaſs-maker can meet with, for it requires a conſiderable time of very ſtrong heat before the whole can be diſſipated, or if the glaſs be wrought before it is thoroughly purged of this material it is full of bubbles, unſound, and has a cloudy gelatinous appearance. Glaſs made with potaſh is more likely to ſuffer from glaſs-gall than the ſoda-glaſſes, for the potaſh-glaſſes are harder, and do not run ſo thin as the others, and the glaſs-gall ariſing from them does not ſo eaſily diſſipate in the fire.

This ſubſtance is uſed as a flux in aſſays of ores, and in the fuſion of filings of gold or ſilver, in the ſame manner as borax is. It is alſo ſaid to increaſe the malleability of metals.

It is reported by many authors of great credit, that this ſalt, in its genuine form, and no way differing from ſuch as is ſeparated from glaſs, is thrown out in great abundance in the eruptions of the burning mountains, and lies about in lumps of a ſpungy texture and great ſize, or in ſmaller ſolid ones, among the ſciarri and aſhes thrown out at thoſe times. The more firm and ſolid pieces are the moſt pure, and are generally of a fine white; the others not unfrequently are tinged blueiſh or yellow, and have ſometimes ſome of the melted matter of the ſciarri blended among the maſs, and filling up ſome of the cavities. In the catalogue of the ſpecimens of ſubſtances thrown out of mount Ætna in one of its eruptions, and ſent as a preſent to the Royal Society, we find mention of ſeveral pieces of ſandiver, but without any particular deſcription. Phil. Tranſ. N° 53.

SANDFLETH, in *Geography*, a town of the duchy of Bremen, near the Weſer; 11 miles S. of Carlſburg.

SANDGATE, a ſmall place of England, in the county of Kent, cloſe to the ſea, defended by a caſtle, upon which about 16 guns are mounted; 11 miles S. of Dover, and 73 E.S.E. of London. N. lat. 51° 15′. E. long. 1° 10′.

Sandgate, a townſhip of America, in the ſtate of Vermont, in Bennington county, containing 1187 inhabitants.

SANDHAMN, a ſea-port town of Sweden, in Upland, where all veſſels paſſing to or from Stockholm are examined; 10 miles E. of Stockholm.

SAND-HEAT, or Sand-bath, denotes one of the chemiſts' fires; conſiſting of hot ſand, in which herbs, flowers, &c. are infuſed in a cucurbit.

The ſand-heat is eſteemed gentle, digeſtive, and alterative of many bodies. See Bath, in *Chemiſtry*.

SANDHED, in *Geography*, a town of Sweden, in Dalecarlia; 5 miles S.E. of Fahlun.

SANDHEM, a town of Sweden, in Weſt Gothland; 18 miles N.W. of Jonkioping.

SANDHILL Bay, a bay at the S.E. end of the iſland of St. Chriſtopher.

SANDHOVEN, a town of Brabant, and chief place of a diſtrict; 7 miles E. of Antwerp.

SANDICOUPAN, a town of Hindooſtan, in Myſore; 12 miles W.N.W. of Bangalore.

SANDILAN, a ſmall iſland of Scotland, near the W. coaſt of Mull. N. lat. 56° 30′. W. long 6° 8′.

SANDILLON, a town of France, in the department of the Loiret; 9 miles S.E. of Orleans.

SANDINEN, a ſmall iſland on the E. ſide of the gulf of Bothnia. N. lat. 65° 3′. E. long 24° 57′.

SANDINI, Anthony, in *Biography*, an Italian eccleſiaſtical hiſtorian, was born in 1692. Of his early life we have no account: by his talents he recommended himſelf to the patronage and eſteem of his biſhop, cardinal Rezzonico, who was afterwards pope, by the name of Clement XIII.; and through the ſame intereſt he obtained the poſts of librarian, and of profeſſor of eccleſiaſtical hiſtory, in the univerſity of Padua. He died in that city in 1751, in the 59th year of his age. He is known principally as an author by a work, entitled "Vitæ Pontificum Romanorum," which is highly ſpoken of as abounding in learning, and very curious reſearches. The beſt edition is that of Ferrara, in 1748. In the ſame year the biſhop of Augſburg, landgrave of Heſſe-Darmſtadt, cauſed it to be printed, under the title of "Baſis Hiſtoriæ Eccleſiaſticæ." He alſo wrote "Hiſtoriæ Familiæ Sacræ;" "Hiſtoria S. S. Apoſtolorum;" "Diſputationes XX ex Hiſtoria Eccleſiaſtica ad Vitas Pontificum Romanorum," and certain "Diſſertations," in defence of the "Hiſtoriæ Familiæ Sacræ."

SANDISFIELD, in *Geography*, a hilly townſhip of Berkſhire county, on the Connecticut line; 22 miles S. by E. of Lenox; incorporated in 1762, and containing 1848 inhabitants.

SANDIVER. See Sandever.

SANDIUS, Christopher, in *Biography*, known under the name of Van Den Sand, a learned Pruſſian Unitarian divine, was born at Konigſburg in the year 1644. He was educated for the miniſtry, and removed from his native place to Amſterdam, where he died in 1680, at the early age of thirty-ſix. He was author of "Nucleus Hiſtoriæ Eccleſiaſticæ," giving an account of the Arians: this work was firſt publiſhed in 1669, in 2 vols. 8vo. It was afterwards printed, in an enlarged form, at Cologne, in 1676: and then in London, in 1681. His next work was publiſhed in 1671, entitled "Tractatus de Origine Animæ." And in 1677 he ſent into the world "Notæ et Obſervationes in G. J. Voſſium de Hiſtoricis Latinis," in which his great learning, judgment, and accuracy, are ſaid to be very advantageouſly diſplayed. Among his other works may be mentioned "Centuria Epigrammatum;" "Interpretationes paradoxæ IV. Evangeliorum;" "Confeſſio Fidei de Deo Patre, Filio, et Spiritu Sancto, ſecundùm Scripturam;" "Scriptura Sacræ Trinitatis Revelatrix:" and among the numerous manuſcripts which he left behind him, a treatiſe was found, that was afterwards given to the world under the title of "Bibliotheca Anti-Trinitariorum, ſive Catalogus Scriptorum, et ſuccincta Narratio de Vita eorum Auctorum, qui præterito et hoc Sæculo, vulgo receptum Dogma de tribus in unico Deo per omnia Æqualibus Perſonis vel impugnarunt, vel docuerunt ſolum Patrem D. N. J. Chriſti eſſe illum verum ſeu altiſſimum Deum." "This curious work," ſays the biographer of Sandius, "preſents us with a long catalogue of Unitarian writers, and of the works which they compoſed, nearly in the chronological order. Beſides enumerating the productions of the reſpective authors, it gives an account of the different editions, of the tranſlations of them which have been publiſhed, and ſometimes of the occaſions on which they were written." Annexed to the "Bibliotheca" are ſeveral intereſting documents, which throw a good deal of light on the eccleſiaſtical hiſtory of the Unitarians in Poland and Lithuania.

SANDNES, in *Geography*, a town of Norway, in the province of Chriſtianſand; 36 miles N.E. of Chriſtianſand.

SANDNESS, a town of the iſland of Shetland, on the W. coaſt; 15 miles W.N.W. of Lerwick. N. lat. 60° 22′. W. long. 2° 4′.

SANDO, one of the ſouthern Javaneſe iſlands, N. of Niphon.—Alſo, a ſmall iſland in the gulf of Bothnia. N. lat. 62° 3′. E. long. 21° 24′.

SANDOE, one of the Faroe iſlands in the North ſea, about 10 miles long and 5 broad. On the S. ſide of the iſland are ſome rocks, and a dangerous whirlpool. N. lat. 61° 35′. W. long. 6° 40′.

SANDOLE, a town of Hindooſtan, in the circar of Guntoor; 20 miles S. of Guntoor.

SANDOMIR, or Sandomirz, a town of Auſtrian Poland, and capital of a palatinate, ſituated on an eminence near the Viſtula, not far from its confluence with the ſea. It has been the favourite reſidence of Caſimir the Great, and other kings of Poland. It is well fortified both by nature and art; and it contains ſeveral colleges, and a provincial court of juſtice; 80 miles E.N.E. of Cracow. N. lat. 50° 33′. E. long. 21° 50′.

SANDONI, Pietro Giuseppe, in *Biography*, a good compoſer of the Bologna ſchool. In 1709 he ſet Apoſtolo Zeno's Artaxerxes, which was performed with applauſe at Verona. He was ſo powerful a compoſer on the harpſichord, that he was compared to Handel. He was huſband to the celebrated opera ſinger Cuzzoni, by ſome thought the fineſt ſinger that ever exiſted. Laborde. See Cuzzoni.

SANDORAN, in *Geography*, a ſmall iſland on the E. ſide of the gulf of Bothnia. N. lat. 63° 30′. E. long. 12° 16′.

SANDORICUM, in *Botany*, altered from the Malay appellation of this tree, *Sandori*.—Rumph. Amboin. v. 1. 168. Cavan. Diſſ. 359. Schreb. 802. Willd. Sp. Pl. v. 2. 556. Mart. Mill. Dict. v. 4. Juſſ. 265. Lamarck Illuſtr. t. 350.—Claſs and order, *Decandria Monogynia*. Nat. Ord. *Meliæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, tubular, ſhort, with five teeth. *Cor.* Petals five, lanceolate, ſpreading. Nectary a cylindrical tube, the length of the petals, with ten marginal teeth. *Stam.* Filaments none; anthers ten, oblong, within the mouth of the nectary. *Piſt.* Germen globoſe, in the bottom of the calyx; ſtyle thread-ſhaped, the length of the nectary; ſtigma thick, furrowed, with ten recurved rays. *Peric.* Berry roundiſh, depreſſed, five-lobed, ſucculent, of one cell. *Seeds* five, large, convex on one ſide, angular on the other.

Eſſ. Ch. Calyx five-toothed. Petals five. Nectary cylindrical, abrupt, with the anthers in its orifice. Berry with five ſeeds.

1. S. *indicum*. Indian Sandori Tree. Cavan. Diſſ. 359. t. 202, 203. Willd. n. 1. Rumph. Amboin. v. 1. 167. t. 64. (Hantol; Lamarck Dict. v. 3. 69.)—Native of the Philippine and Molucca iſlands. A large and lofty *tree*, whoſe wood is red at the heart. The *leaves* are alternate, on long downy *ſtalks*, ternate, ovate, broad, pointed, entire; ſmooth above; downy and ruſty beneath. *Flowers* white, in compound axillary *cluſters*. *Fruit* the ſize of a ſmall orange, furrowed, downy, yellow when the down is rubbed off; its pulp acid, containing five large bitter *ſeeds*. The unripe fruit is candied by the inhabitants of Amboyna. In a ripe ſtate it ſerves as an acid ſauce for fiſh, or other animal food. The aromatic *root* of the tree, bruiſed, and infuſed in vinegar and water, with a little powdered ginger, is reckoned an excellent remedy for a dangerous colic, or pain in the ſide, prevalent in Amboyna. *Rumphius*.

SANDOW, in *Geography*, a town of Brandenburg, in the New Mark, on the Pleiſſe; 8 miles S.E. of Franckfort on the Oder.

SANDOWN, a townſhip of America, in Rockingham county, New Hampſhire, taken from Kingſton, and incorporated in 1756; containing 504 inhabitants.

Sandown *Bay*, a large bay of the Engliſh channel, on the E. coaſt of the Iſle of Wight, between White Cliff and Dunnoſe, having a ſmall fort to guard the coaſt.

Sandown *Caſtle*, a fortreſs of England, in the county of Kent, built by Henry VIII. near Deal. See Sandwich.

SANDRABATIS, in *Ancient Geography*, a country of India, on this ſide of the Ganges. Ptolemy. M. d'Anville places it W. of Jomanis, and N. of mount Vidius, and thinks that it is the country now named Scanderhad, toward lat. 26° 15′.

SANDRART, Joachim de, in *Biography*, was born at Franckfort in 1606, and at the age of 15 went to Prague, where he was inſtructed by G. Sadelee in engraving, but was adviſed by him to become a painter. He therefore placed himſelf with G. Houthorſt at Utrecht, and under his inſtruction acquired conſiderable power. He went to Rome and Venice, and at the latter place copied ſeveral pictures of Titian and P. Veroneſe. At the former he was employed by the prince Juſtiniani and the cardinal Barberini, and after a long reſidence there returned to his native country. Towards the latter part of his life he reſided at Nuremberg, where he eſtabliſhed an academy, and compoſed ſeveral works on art, particularly his lives of the painters, under the title of "Academia Artis Pictoriæ," in 1683. By this work he is better known than by his paintings, which poſſeſs no ſtriking degree of character. He died at Nuremberg in 1688, aged 72.

SANDRY, in *Geography*, a town of Hindooſtan, in the circar of Kottah; 30 miles W. of Kottah.

SANDSEE, a town of Bavaria, in the biſhopric of Aichſtatt; 16 miles N. of Aichſtatt.

SANDSIO, a town of Sweden, in the province of Smaland; 25 miles S. of Wexio.

SANDSKAR, a ſmall iſland in the N. part of the gulf of Bothnia. N. lat. 65° 33′. E. long. 23° 39′.

SANDSLAKE, a river of Norway, which runs into the Aardelsfiord; 25 miles N.N.E. of Stavanger.

SANDSTING, a town on the S.W. coaſt of the iſland of Shetland. N. lat. 60° 15′. W. long. 1° 48′.

SANDSTONE, in *Mineralogy*, Fr. *grès*, is eſſentially compoſed of grains, or particles of ſand, either united by a mixture with other mineral ſubſtances, or adhering without any viſible cement. The grains or particles of ſandſtone are generally quartz, ſometimes intermixed with felſpar or particles of ſlate. When the cementing matter is lime, ſuch ſandſtones are called calcareous ſandſtones: frequently the cementing matter is oxyd of iron intermixed with alumine. The particles of ſand in ſandſtones vary greatly in ſize, ſome being ſo minute as ſcarcely to be viſible in other ſandſtones. The grains or particles are of conſiderable magnitude. Geologiſts have generally admitted that all ſandſtones have been formed mechanically, from the debus of pre-exiſting rocks, broken down and cemented together; but this opinion appears to have been too haſtily formed. Some ſandſtones are highly cryſtalline, and the particles adhere cloſely without any viſible cement: we have no more authority for conſidering ſuch rocks to be mechanical formations, than we have for conſidering granite to be ſo, which is univerſally admitted to be the reſult of a cryſtalline proceſs. In fact, ſome very ſmall-grained granites differ little from ſandſtone; and amongſt the rocks which have been claſſed as primary, there are ſome which alternate with a fine-grained granular quartz-rock, differing in no reſpect from ſome of the cryſtalline ſandſtones occurring among ſecondary rocks. Indeed, when we conſider that quartz, felſpar, and mica together, or two of theſe ſubſtances, frequently form fine-grained granular rocks, there is no difficulty in admitting that quartz, or felſpar alone, may form rocks of a ſimilar kind, which is known to be the fact. The highly cryſtalline ſandſtone occurring amongſt the rocks called ſecondary, may be claſſed with the preceding, and called cryſtalline ſandſtone. There are other ſandſtones which are, in a conſiderable degree, cryſtalline, but contain alſo fragments and water-worn pieces of other rocks: theſe muſt be regarded as partly of mechanical formation. The third kind of ſandſtones contains ſmooth rounded pebbles, and fragments united by a friable cement: ſuch ſandſtones have evidently been formed mechanically from the ſand and materials of former rocks cemented together. It might perhaps be proper to call ſuch rocks tertiary, as ſome geologiſts have propoſed. Sandſtone is generally diſtinctly ſtratified, and ſome kinds which contain a conſiderable quantity of mica ſplit into thin laminæ, which are uſed for ſlates in ſome parts of England, particularly in the Weſt Riding of Yorkſhire.

Siliceous ſandſtones frequently contain organic remains; but theſe are principally of vegetables, and the ſubſtance of the plant is entirely penetrated with ſilex.

Sandſtone forms a very conſiderable part of rocks denominated ſecondary, and generally alternates with beds of coal and ſhale in coal diſtricts.

The loweſt of the principal beds of ſandſtone has been called by Werner, and the German geologiſts, the old red ſandſtone. It generally reſts on rocks of ſlate or grey-wacke, and is covered by thick beds of lime-ſtone. It is frequently coarſe-grained, conſiſting of particles of quartz, and ſometimes of felſpar, cemented by iron-ſhot clay, that gives it the red colour from which its name is derived. According to many geologiſts, the red ſandſtone, which extends on the weſtern ſide of England, from Penrith in Cumberland to Shropſhire, belongs to this formation.

The number and variety of ſandſtones in the ſecondary ſtrata are very great, and the diverſity of quality fits them for the various purpoſes of building-ſtones, grind-ſtones, filtering-ſtones, &c. See Stone.

Flexible ſandſtone (ſee Quartz, *Elaſtic*), a ſpecies of calcareous ſtone, which poſſeſſes a conſiderable degree of flexibility when moiſt, has lately been diſcovered in the county of Durham: on what peculiar arrangement of the particles this depends has not been aſcertained. The flexible ſandſtone from Braſil contains numerous particles of elaſtic mica, from which this property in that ſtone is probably derived.

Sandstone, in *Agriculture*, a ſort of ſtony material, which is conſtituted of numerous congeries of minute particles of ſandy matter, combined together by ſome ſort of natural cementing ſubſtance. It readily decompoſes, crumbles, and falls down, in many caſes, ſo as to mix with the mould or earthy matters about it, and form the ſoils of different parts of the country. One kind of ſandy land is evidently produced in this way, which is often of a reddiſh appearance, and very productive. But there are ſome other deſcripions of it. See Soil, and Quarry.

SANDSVOR, in *Geography*, a town of Norway, in the province of Aggerhuus; 35 miles S.W. of Chriſtiania.

SANDVLIET, or Santvliet, a town of Brabant; 11 miles N.N.W. of Antwerp.

SANDVOE, a bay on the N. coaſt of the iſland of Shetland. N. lat. 60° 53′. W. long. 1° 47′.

SANDUSKY Lake, a lake of North America, on the S.W. ſide of lake Erie, 17 miles long, and 7 miles at its greateſt breadth. From the N.W. part of this lake, there is a portage of one mile and a quarter to Portage river, a ſmall river that runs into lake Erie. The fort ſtands oppoſite to the gut. N. lat. 41° 50′. W. long. 83° 3′ 30″.

Sandusky *River*, a navigable water of the ſtate of Ohio, which riſes near a branch of the Great Miami, between which is a portage of nine miles. Purſuing a N.E. courſe, it diſcharges itſelf into the S.W. corner of Sanduſky lake. This is a conſiderable river, and has fine level land with banks. Its ſtream is gentle all the way to its mouth, where it is large enough to receive ſloops from the lake. By the treaty of Grenville, Aug. 3, 1795, the Indians ceded to the United States a tract of land, ſix miles ſquare, upon Sanduſky lake, where a fort formerly ſtood, and two miles ſquare at the lower rapids of Sanduſky river.

Sandusky *Iſland*, an iſland in lake Erie, a little S.E. of the Baſs iſlands, and nearer to Sanduſky bay.

Sandusky *Town*, a town ſituated on the S.W. coaſt of lake Erie. N. lat. 41° 47′. W. long. 82° 28′.

SANDWEED, in *Agriculture*, a name provincially given to the weed, ſometimes termed *pick-purſe*.

SANDWICH, in *Geography*, a borough town, and one of the ancient Cinque-ports, is ſituated on the ſhore of the North ſea, in the lower half hundred of Eaſtry, lathe of St. Auguſtine, and county of Kent, England, at the diſtance of 68 miles E. by S. from London. The preciſe date of the origin of this place is uncertain, but the probable opinion is, that it took its riſe from the decay of the Portus Rutupenſis, or haven of Rutupiæ, in the fifth or ſixth century. (See Reculver and Richborough.) Its preſent name is a modification of its Saxon appellation, Sondwych, which denotes its low ſituation, as built on the ſea-ſands. Somner, in his "Treatiſe on the Roman Ports and Forts in Kent," aſſerts, that it was likewiſe called "Lunden-wich, either as ſituated at the entrance to the port of London, or from being the place of general reſort of the merchants trading to and from that city;" but Boys, who wrote "Collections for a Hiſtory of Sandwich," contends, that the names Lunden-wich and Portus Londinenſis, mentioned in ſome Saxon laws and charters, refer either to London itſelf, or to ſome port on the banks of the Thames; and this appears by far the moſt probable opinion.

Sandwich is firſt mentioned in written record by Eddius Stephanus, in his life of Wilfred, archbiſhop of Canterbury, who is therein ſtated to have "arrived happily and pleaſantly in this port about the year 655." From that time both the town and haven gradually advanced to importance; but after the commencement of the Daniſh incurſions, the former, in particular, frequently ſuſtained very conſiderable damage. According to the Saxon Chronicle, Sandwich was attacked by the Danes, as well from the ſea as by land, in the year 851, on which occaſion they were completely defeated, and nine of their ſhips were ſeized by the victors. They returned, however, ſhortly afterwards, in greater force, and pillaged Sandwich and all the country for many miles up the interior. The ſame ſcene of deſolation was renewed by Anlaf in 993, or 994, when he arrived at Sandwich with 90 ſhips, and a large army of combatants. Another body of Danes came hither in the year 1007, and after plundering this town, ſailed along the coaſts of Kent and Suſſex, ravaging the ſame with fire and ſword. In the following year, king Ethelred aſſembled a fleet at this port to oppoſe king Sweyne; and here alſo that monarch himſelf remained for ſeveral days with his fleet in July 1013, before he ſet ſail for the northward. In 1014, Canute, when leaving England, touched at this port, and put on ſhore all his Engliſh hoſtages, after cutting off their hands, ears, and noſes; and on his return, in 1016, he landed here with that army, by whoſe valour he was enabled to ſeat himſelf, without a rival, on the throne of England. Nine years afterwards, when he was in full poſſeſſion of the ſceptre, he granted the port of Sandwich, and all its revenues, to the monks of Chriſt-church, in Canterbury. He appears alſo to have greatly improved and extended the town, which thenceforward became very flouriſhing and populous. Edward the Confeſſor reſided at Sandwich for ſeveral weeks in 1049, on which occaſion he conſtituted it a principal Cinque-port, and a hundred of itſelf. In 1052, that monarch fitted out a fleet here to oppoſe the deſigns of Godwin, earl of Kent, and his ſons, who, notwithſtanding, are ſtated to have entered this port in the courſe of the ſame year, and to have ſailed thence through the ancient channel of the Wantſume towards London.

In 1357, Edward the Black Prince landed at Sandwich, with his royal priſoners, John, king of France, and his ſon Philip; and in 1372, Edward III. aſſembled at this town and port an army of 10,000 archers, and 3000 lancers, with a fleet of 400 ſail, and embarked for the relief of Thouars and the reſt of Poitou; but after having been ſix weeks at ſea, he was compelled to return. King Richard II. his ſucceſſor, iſſued an order under the great ſeal, for incloſing and fortifying Sandwich, which, from the means of annoyance afforded by its ſhipping, was conſidered to be a principal object of French vengeance. At that period, indeed, the French were meditating an invaſion of England, and in order to protect their troops from the Engliſh archers, had formed a turretted wall of wood, 3000 paces in length, and twenty feet in height, which they could take to pieces and ſet up again at pleaſure. Part of this wall was conveyed to Sandwich, and conſtructed there, as Lambard obſerves, “ to our great ſafetie and their repulſe.” In the 16th year of the reign of Henry VI., the French landed and plundered the town, which they did alſo in the 35th year of the ſame monarch's reign ; but theſe depredations not anſwering the whole of their purpoſe, Charles VIII. of France reſolved to deſtroy Sandwich altogether, with which view he diſpatched hither four thouſand men, who landing in the night, after a long and bloody conflict gained poſſeſſion of the town, ſet fire to it, and put moſt of the inhabitants to the ſword ; and to add to theſe calamities, it was again ravaged by the earl of Warwick in the ſame reign. To prevent the recurrence of ſuch diſaſters, Edward IV. “ new-waulled, ditched, and fortified the town with bulwarks, and gave beſides for the ſupport of them 100*l.* yearly out of the cuſtom-houſe here ; which, together with the induſtry and efforts of the merchants who frequented this haven, the goodneſs of which, in any ſtorm or contrary wind, when they were in danger from the breakers or the Goodwin ſands, afforded them a ſafe retreat, in a very ſhort time reſtored it again to a flouriſhing ſtate ; inſomuch, that before the end of that reign, the clear yearly receipt from the cuſtoms here to that king amount to above the ſum of 16,000*l.* or 17,000*l.*, and the town had 95 ſhips belonging to it, and above 1500 ſailors.” Haſted's Hiſtory, &c. vol. x. 8vo.

But this proſperity was only of ſhort duration, for in the reign of king Henry VII. the river Stour, or, as it was at this place anciently called, the Wantſume, began to decay, in conſequence of collections of light ſand driven in by the ſea ; and though meaſures were taken to check the evil, it continued to increaſe rapidly, and in the reign of Henry VIII. was very greatly augmented by the ſinking of a large ſhip at the very mouth of the haven. Leland, who viſited Sandwich ſhortly after this event, deſcribes the town in theſe words. “ Sandwich, on the further ſide of the Sture, is neatly welle walled, where the townd ſtandith moſt in jeopardi of enemies. The reſidew of the town is dichid and mudde waulled. Ther be in the town IIII principal gates, III paroche chyrches, of the which ſum ſuppoſe that S. Marye's was ſumtyme a nunnery. Ther is a place of Whit freres, and an hoſpital without the town, fyrſt ordened for mariners deſeſyd and hurt. Ther is a place wher the monkes of Chriſt-church did reſort when they were lordes of the towne. The caryke that was ſunk in the haven yn pope Paulus tyme, did much hurt to the haven, and gether a great banke.” Itinerary, vol. vii. fol. 127.

In conſequence of the events above-ſtated, the corporation of Sandwich, in the reign of Edward VI. applied to the protector Somerſet, for powers to amend the haven, which they ſaid was then ſo utterly deſtroyed and loſt, that the cuſtoms of the port were ſcarcely ſufficient “ to ſatiſfy the cuſtomen his fee.” This gave occaſion to two different commiſſions, one granted by king Edward, and the other by queen Elizabeth, to enquire into the ſtate of the haven. The reſult was, an attempt to improve it, by cutting a new canal through the grounds between the town and Sandowne caſtle, which, however, was ſoon abandoned, on a repreſentation being made of its inadequacy to produce the requiſite effect. From that time all the efforts of the magiſtracy to procure public aid to reſtore the haven, have proved abortive.

Under theſe circumſtances, as the harbour had become uſeleſs to all veſſels except ſuch as were of very ſmall burthen, the town itſelf muſt ſoon have been ruined, had it not been ſingularly preſerved, and raiſed again to proſperity and opulence, by the ſettlement here of a colony of Flemiſh manufacturers, whom perſecutions for religious opinions had forced to fly from their native country. Theſe ſtrangers received the protection of queen Elizabeth ; and though much obſtructed by the jealouſy of the native tradeſmen, and the avarice of the corporation, very ſoon roſe to a flouriſhing condition.

About thirteen years after their arrival, the queen made a viſit to the town to inſpect the manufactories, and continued here three days. In the reign of James I. trade had again increaſed ſo much, that the cuſtoms amounted to 2926*l. per annum ;* but they afterwards experienced a conſiderable diminution, by reaſon of the eſtabliſhment of the company of merchant adventurers, and the appropriation to them of all the trade to Germany and the Low Countries ; and though the deſcendants of the Dutch and Walloon manufacturers ſtill continued here, they ſoon entirely gave up the manufactures which they had originally carried on and mixed with the other inhabitants, in the general occupations of the town. A gradual increaſe, however, both in the population and buildings within the liberty, has ſince taken place, and though the haven can now be regarded as little more than the outlet of the Stour, the exports and imports are conſiderable. The exports are corn, grain, flour, ſeeds, hops, wool, malt, apples, pears, leather, oak, bark, aſhes, &c. The imports are grocery, furniture, linen, woollen, and other ſhop-goods from London ; and iron, timber, lead, coals, ſalt, wine, ſpirits, glaſs, grindſtones, and other articles, from Wales, Scotland, Norway, Sweden, and the ports of the Baltic.

In Domeſday-book, Sandwich is deſcribed as a borough held by the archbiſhop of Canterbury, for the clothing of the monks, and as yielding the like ſervice to the king as Dover. It then paid to the archbiſhop a rent of forty pounds, beſides contributing forty thouſand herrings for the monks' dinner ; but in the year 1290, theſe immunities were given up to king Edward I. in exchange for ſome lands in another part of Kent. That monarch confirmed to the inhabitants a weekly market, and other privileges which had been granted to them by Henry III.; as did likewiſe king Edward III. who firſt incorporated the town by the name of the “ Mayor, jurats, and commonalty of the town and port of Sandwich.” This charter continued in force till the thirty-ſixth year of the reign of Charles II., when a new charter was granted, which was ſurrendered to James II., but was afterwards reſtored, and is now the deed under which the town is governed. By it the corporation is made to conſiſt of a mayor, twelve jurats, twenty-four common councilmen, a ſteward, recorder, town-clerk, and inferior officers. The mayor and jurats are *ex officio* juſtices of the peace. The former is alſo coroner within his juriſdiction, and may appoint a deputy to act for him in that capacity. All the municipal elections, decrees, and ordinances are made by the whole body corporate, at a common aſſembly, convened by the ſound of a braſs horn of great antiquity. The two regular and fixed common aſſemblies meet, one on the firſt Monday after the feaſt of St. Andrew, to elect the mayor, and the other on the following Thurſday, for the election of officers : all other meetings of the corporation are held at the pleaſure of the mayor. Formerly the court of general ſeſſions and gaol delivery ſat here quarterly, but now only half-yearly. Here are two weekly markets, on Wedneſday and Saturday ; alſo an annual fair, which commences on the 4th of December, and laſts for ſeveral days.

Sandwich, as one of the Cinque-ports, has enjoyed the privilege of ſending two members, uſually ſtiled barons, to parliament, ſince the 42d year of king Edward III. The right of election was formerly veſted in the mayor, jurats, and reſident freemen only; but by the laſt deciſion of the houſe of commons, freemen, non-reſident, were declared equally entitled to vote as thoſe inhabiting within the borough, provided they did not receive alms. The number of voters, reſident and non-reſident, is about 850, and the mayor is the returning officer.

The ſcite of Sandwich, as already hinted, is extremely low and flat; and the country around, with the exception of the ridge on which Richborough caſtle ſtands, partakes, to a conſiderable diſtance, of the ſame level character. In all the lower parts of this tract, at the depth of a few feet, rounded flints, pebbles, ſea-ſand, and ſhells of various kinds, are conſtantly found; and every where beneath the town, at the depth of from forty to fifty feet, is a ſtratum of flint. The latter, when penetrated, gives iſſue to a copious ſtream of water, much ſuperior in purity to that of the ſprings which lie between it and the ſurface. From theſe the town is in part ſupplied; but the principal ſupplies are derived from the river Stour, and from a ſmall ſtream that riſes near the village of Eaſtry, and is conveyed into the town by a canal about three miles long, called the Delf, which was formed under letters patent granted by king Edward I. in the thirteenth year of his reign. The houſes in Sandwich are moſtly very irregular in their conſtruction, and are chiefly diſpoſed in narrow and inconvenient ſtreets. Conſiderable improvements, however, have been effected here under an act of parliament paſſed in 1787, for new paving, lighting, watching, and cleanſing the town. In ancient times it was divided into eight wards, but theſe were increaſed to twelve in 1437, and the ſame number is ſtill continued. Each ward is under the immediate juriſdiction of a jurat, who nominates a conſtable and a deputy conſtable. Great part of the town-walls yet remains nearly entire; and till lately five entrance-gates were ſtanding alſo.

The public buildings of Sandwich are the guild, or court-hall, the three pariſh churches of St. Clement, St. Peter, and St. Mary, and a free grammar-ſchool. The guild-hall was erected in the year 1579, and conſiſts of two ſtories, the lower one of which is the court-hall, and the higher the council-chamber. In the upper ſtory are kept the cucking-ſtool and wooden mortar, formerly uſed in this town for the puniſhment of ſcolds; alſo the armour for the trained bands. St. Clement's church is a very ſpacious edifice, divided into a nave, chancel, and aiſles, with a maſſive tower, riſing from four ſemicircular arches, in the centre of the building. This laſt portion of the church is much more ancient than any of its other parts, as is evident from the round form of its arches, the heavy character of its maſonry, and the ſtyle of its decorations, all of which evince an early Norman origin. The nave is ſeparated from the aiſles by pointed arches, reſting on ſmall pillars, and has a ceiling of oaken planks. The font, which is of an octagonal ſhape, and apparently very ancient, conſiſts of a ſhaft and baſe raiſed on two ſteps. The exterior of the baſin is charged with ſhields and roſes, in alternate ranges; and the ſhaft diſplays eight niches between graduated buttreſſes, ſculptured at the angles with groteſque faces, flowers, foliage, &c. A few ancient wooden ſtalls remain in this church, and there are numerous ſepulchral inſcriptions, but none of any intereſt. St. Peter's church is evidently the work of different periods. Part of it is of conſiderable antiquity; but the tower and ſouth aiſle, having fallen down in 1661, were rebuilt, ſoon after that period, chiefly with the old materials. In this church are ſeveral ancient tombs, ſupporting effigies. One of theſe is ſuppoſed to commemorate ſome individuals of the Ellis family, a member of which, Thomas Ellis, a merchant of this town in the reign of Henry V., is recorded to have founded a chantry here. St. Mary's church is a large building, and originally conſiſted of a nave, chancel, and two aiſles, but the ſouth aiſle has been deſtroyed. The ſepulchral monuments here are numerous, though not particularly remarkable. Southward from this church formerly ſtood a chapel, dedicated, as Haſted ſays, to St. Jacob, but more probably to St. James: it is now entirely demoliſhed, but the cemetery annexed to it continues to be uſed as a place of burial. The free grammar-ſchool of this town was founded by ſubſcription in the reign of queen Elizabeth, principally through the active exertions of ſir Roger Manwood, then recorder of Sandwich, and afterwards chief baron of the Exchequer, who bequeathed to it a conſiderable endowment in lands for its perpetual ſupport. Several other individuals have contributed large donations for the ſame purpoſe. Among the firſt maſters here was Richard Knolles, author of "The Hiſtory of the Turks," who has been highly praiſed by Dr. Johnſon; but he appears to have been ſoon diſmiſſed, on account of negligence in his ſchool duties. Beſides the free ſchool, Sandwich has a charity ſchool, founded about the year 1711, in which thirty boys, and a like number of girls, are educated. The management of this ſchool belongs to the mayor and three truſtees, one nominated from each pariſh.

The monaſtic eſtabliſhments in Sandwich were, a priory and three hoſpitals; St. John's, St. Thomas's, and St. Bartholomew's. The priory was founded in the year 1272, by Henry Cowfield, a German, for the reception of Carmelite, or White friars; but his endowment of it was extremely trifling, compared to the ſubſequent benefaction of William, lord Clinton, in the reign of king Edward I. The buildings appropriated to this ſociety are ſaid to have been upon a large ſcale, occupying, together with the gardens and meadows annexed, above five acres of ground. This priory was ſuppreſſed in the twenty-eighth year of the reign of Henry VIII.; and was ſoon after granted to Thomas Arderne, gent., of Faverſham, to be held of the crown, *in capite*. The period of the foundation of St. John's hoſpital is uncertain, but it is mentioned as early as the reign of Edward IV. St. Thomas's hoſpital was founded and endowed, in 1392, by Thomas Ellis, a wealthy draper of Sandwich, and at preſent contains twelve inmates, whoſe annual revenue is very conſiderable, the rents of the property attached to the houſe having been greatly improved of late years. But the moſt important, and alſo the moſt ancient, hoſpital in Sandwich, is that of St. Bartholomew, which was founded in the twelfth century. According to Boys, this was originally deſigned for the accommodation of pilgrims and travellers; though Leland, as we have ſeen, ſays that it was "fyrſt ordeined for maryners deſeſyd and hurt." The buildings belonging to this eſtabliſhment occupy a large plot of ground of a triangular form, and are fitted up for the accommodation of ſixteen reſidents, nominated by the mayor and jurats, who are *ex officio* the patrons, governors, and viſitors of the hoſpital. In a ſmall chapel here is an altar tomb, ſupporting the effigy of ſir Henry de Sandwich, habited in a hauberk of mail, and bearing a heater ſhield, and a broad ſword. This knight was a principal benefactor to the hoſpital, and by ſome is erroneouſly called its founder.

In the 13th and 14th centuries the mode of executing felons within this liberty was by drowning them in a ſtream called the Geſling; and it is remarkable, that in 1315 a complaint was made againſt the prior of Chriſt-church, in Canterbury, for having ſo altered the courſe of that river, that executions could not be performed from the want of water. In 1630 a woman was hanged here for witchcraft; in 1644 another female ſuffered for the ſame imaginary crime; and in 1695 a third woman, condemned for a ſimilar alleged offence, only eſcaped puniſhment, in conſequence of the act then paſſed for a general and free pardon.

According to the parliamentary returns of 1811, the town of Sandwich, properly ſo called, conſiſting of the three pariſhes before-mentioned, St. Clement's, St. Mary's, and St. Peter's, together with the chapelry of St. Bartholomew's hoſpital, which is extra parochial, contain 531 houſes, and a population of 2735 inhabitants; but in the Cinque-port liberty of Sandwich, which includes the pariſhes of Sarr and Walmer, and the ville of Ramſgate, there are in all 1866 houſes, inhabited by 9296 perſons.

A few objects in the vicinity of this town merit notice. At Woodneſborough, about two miles to the ſouth-eaſt, is a peculiarly large artificial mount or tumulus. Upon being opened near the ſummit, it was found to contain the remains of a human body, placed near the ſurface of the ground, together with a ſpear-head, a fibula, and ſome fragments of veſſels. In the pariſh of Aſh, three miles from Sandwich, many Roman antiquities have been diſcovered on a ſandy eminence, which appears to have been appropriated as a Roman burying-place. The graves are generally about four feet deep, and beſides the uſual depoſit, frequently contain ſwords, ſpear-heads, fibulæ, buckles, claſps, belt-ornaments, amulets, pendants, beads, rings, and other articles of dreſs of great value; alſo coins and medals, both of the upper and lower empires. Sandown-caſtle, which is ſituated between Sandwich and Deal, cloſe to the ſea-ſhore, was erected by king Henry VIII. This fortreſs conſiſts of an immenſe circular tower in the centre, connected with four ſemicircular outworks, or lunettes; the whole ſurrounded by a deep foſſe, with additional batteries, towards the ſea. On the ſummit of the centre tower is a capacious water ciſtern, reſting upon the arch of a large bomb-proof apartment, for the garriſon. The lord-warden of the Cinque-ports is governor of Sandown-caſtle, which has of late years been conſiderably repaired and improved in its fortifications. Collections for a Hiſtory of Sandwich in Kent, by William Boys, eſq., F.A.S. 4to., Canterbury 1792. Beauties of England and Wales, vol. vii., by E. W. Brayley, 8vo. 1807. The Hiſtory and Topographical Survey of the County of Kent, by Edward Haſted, eſq. F.R.S. and S.A., fol. 1788. In 1800 an improved and corrected edition was publiſhed in 12 vols. 8vo.

Sandwich, a poſt-town of America, in the ſtate of Maſſachuſetts, ſituated at the bottom of cape Cod, in Barnſtable bay. It extends through the whole breadth of the cape; 18 miles S.E. from Plymouth, and about 60 miles S. of Boſton: incorporated in 1639, and containing 2382 inhabitants. N. lat. 41° 17′. W. long. 70° 24′.—Alſo, a ſmall river at the bottom of Barnſtable bay.—Alſo, a townſhip in the northern part of Stafford county, New Hampſhire, N. of Winnipiſiogee lake; incorporated in 1763, and containing 2232 inhabitants.—Alſo, a townſhip of Canada, in the upper part of Detroit river, and on the E. ſide of it, where a gaol and court-houſe have been erected.

Sandwich, or *Hawkes's River*, lies two miles within Chabuctoo harbour, in Nova Scotia, and runs into Chabuctoo bay.

Sandwich *Bay*, a large bay on the W. of the iſland of Georgia, S. of cape Charlotte.

Sandwich, *Cape*, a point of land in New Holland, or New South Wales, ſo called by Cook in June 1770, diſtant N. by W. ½ W. 11 miles from point Hillock. Between theſe two points the land is very high, and the ſurface is craggy and barren. The cape may be known, not only by the high craggy land over it, but by a ſmall iſland which lies E. of it, at the diſtance of a mile, and ſome others that lie about two leagues to the northward. From this cape the land trends W. and afterwards N. forming a fine large bay, which our famous navigator called "Rockingham bay."

Sandwich *Gulf*, a large bay at the S.E. extremity of Eaſt Florida.

Sandwich *Iſland*, one of the *New* **Hebrides**, (which ſee,) in the Pacific ocean, about 80 miles in circumference. S. lat. 17° 40′. E. long. 168° 35′.—Alſo, an iſland in the Pacific ocean, near the W. coaſt of New Ireland. On this iſland, as Capt. Carteret informs us, there ſeem to be ſome good bays and harbours. On the N. part of it there is a remarkable peak, like a ſugar-loaf, and another of the ſame kind upon the coaſt of New Ireland, diſtant from each other about five leagues. The peak upon Sandwich iſland lies in S. lat. 2° 53′. E. long. 149° 17′.

Sandwich *Iſlands*, a cluſter of iſlands in the Pacific ocean, diſcovered by captain Cook and captain King in the year 1778, and which the latter navigator, after having viſited them again in 1779, thus deſcribes. This group conſiſts of eleven iſlands, extending in latitude from 18° 54′ to 22° 15′ N. and in longitude from 199° 36′ to 205° 6′ E. They are called by the natives, 1. Owhyhee; 2. Mowee; 3. Ranai, or Orania; 4. Morotinnee, or Morokinnee; 5. Kahourowee, or Tahoorowa; 6. Morotoi, or Morokoi; 7. Woahoo, or Oahoo; 8. Atooi, Atowi, or Towi, and ſometimes Kowi; 9. Neheehow, or Oneeheow; 10. Oreehoua, or Reehoua; and 11. Tahoora: and are all inhabited, excepting Morotinnee and Tahoora. Beſides the iſlands above enumerated, we were told by the Indians that there is another, called Modoopapapa, or Kamodoopapapa; lying to the W.S.W. of Tahoora, which is low and ſandy, and viſited only for the purpoſe of catching turtle, and ſea-fowl; and as Capt. King could never learn that they knew of any others, it is probable that none exiſted in their neighbourhood. They were named by captain Cook "The Sandwich Iſlands," in honour of the earl of Sandwich, under whoſe adminiſtration he had enriched geography with ſo many ſplendid and important diſcoveries.

The latitude and longitude of the Sandwich iſlands, and alſo the number of inhabitants contained in each of them, will appear in the following table.

		Latitude.	Longitude.	Number of Inhabitants.
Owhyhee	North point	20° 17′	204° 2′	150,000
	South point	18 54	204 15	
	Eaſt point	19 34	205 6	
	Karakakooa bay -	19 28	214 0	
Mowhee	Eaſt point	20 10	204 4	65,400
	South point	20 34	203 48	
	Weſt point	20 54	203 24	
Morokinnee -		20 39	203 33	uninhabited
Tahoorowa -		20 38	203 27	
Ranai, ſouth point -		20 46	203 8	20,400
Morotoi, weſt point -		21 10	202 46	36,000
Woahoo, anchoring place		21 43	202 9	60,200
Atooi; Wymoa bay -		21 57	200 20	54,000
Oneeheow, anchoring place -		21 50	199 45	10,000
Oreehoua -		22 2	199 52	4,000
Tahoora - -		21 43	199 36	uninhabited

The climate of the Sandwich iſlands differs very little from that of the Weſt India iſlands which lie in the ſame latitude: upon the whole, perhaps, it may be rather more temperate. The thermometer, on ſhore, in Karakakooa bay, never roſe higher than 88°, and that but one day; its mean height at noon was 83°. In Wymoa bay, its mean height at noon was 76°, and when out at ſea 75°. The mean height of the thermometer at noon in Jamaica is about 86°, at ſea 80°. Whether they be ſubject to the ſame violent winds and hurricanes, we could not diſcover, as we were not there in any of the ſtormy months. However, as the natives gave us no poſitive teſtimony of the fact, and no traces of their effects were any where viſible, it is probable that, in this reſpect, they reſemble the Society and Friendly iſlands, which are in a great meaſure free from theſe dreadful viſitations. During the four winter months that we remained amongſt theſe iſlands, there was more rain, eſpecially in the interior parts, than uſually falls during the dry ſeaſon in the iſlands of the Weſt Indies. We generally ſaw clouds collecting round the tops of the hills, and producing rain to leeward: but after they are ſeparated from the land by the wind, they diſperſe and are loſt, and others ſucceed in their place. This happened daily at Owhyhee, the mountainous parts being generally enveloped in a cloud, ſucceſſive ſhowers falling in the inland country; with fine weather, and a clear ſky, at the ſea-ſhore. The winds, in general, were from E.S.E. to N.E.; though they ſometimes varied a few points each way to the N. and S.; but theſe were light, and of ſhort duration. In the harbour of Karakakooa, we had a conſtant land and ſea-breeze every day and night. The currents ſeemed very uncertain, ſometimes ſetting to windward, and at other times to leeward, without any regularity. They did not appear to be governed by the winds, nor any other cauſe that captain King could aſſign: they frequently ſet to windward againſt a freſh breeze. The tides are very regular, flowing and ebbing ſix hours each. The flood comes from the eaſtward; and it is high water, at the full and change of the moon, forty-five minutes paſt three, apparent time. Their greateſt riſe is two feet ſeven inches; and we always obſerved the water to be about four inches higher when the moon was above the horizon than when it was below.

The quadrupeds in theſe, as well as in all other iſlands that have been diſcovered in the South Sea, are confined to three ſorts: dogs, hogs, and rats. The number of dogs in theſe iſlands did not appear to be nearly equal, in proportion, to thoſe in Otaheite. But, on the other hand, they abound much more in hogs; and the breed is of a larger and weightier kind. The ſupply of proviſions of this kind, which we got from them, was really aſtoniſhing: we were near four months either cruiſing in the harbour, or off Owhyhee; during all this time, a large allowance of freſh pork was conſtantly ſerved to both crews; ſo that our conſumption was computed at about ſixty puncheons, of five hundred weight each. Beſides this, and the incredible waſte which, in the midſt of ſuch plenty, was not to be guarded againſt, ſixty puncheons more were ſalted for ſea ſtore. The greateſt part of this ſupply was drawn from the iſland of Owhyhee alone, and yet we could not perceive that it was at all drained, or even that the abundance had any way decreaſed.

The birds of theſe iſlands are beautiful and numerous, though not various. There are four which ſeem to belong to the *trochili*, or honey-ſuckers of Linnæus. There is a ſpecies of thruſh, with a grey breaſt; and a ſmall bird of the fly-catcher kind, a rail with very ſhort wings and no tail, which, on that account, we named *rallus ecaudatus*. Ravens are found here, but they are very ſcarce: their colour is dark brown, inclining to black, and their notes differ from the European. Here are alſo owls; plovers of two ſorts, one very like the whiſtling plover of Europe; a large white pigeon; a bird with a long tail, whoſe colour is black, the vent and feathers under the wing (which is much longer than is uſually ſeen in the generality of birds, except birds of paradiſe) are yellow; and the common water or darker hen.

Their vegetable productions are nearly the ſame with the reſt of the South Sea iſlands. The bread-fruit trees thrive here; not in ſuch abundance, but produce double the quantity they do on the rich plains of Otaheite. Their ſugar-canes are of a very unuſual ſize: one of them was brought to us, at Atooi, meaſuring eleven inches and a quarter in circumference, and having fourteen feet eatable. At Oneeheow, they brought us ſeveral large roots, of a brown colour, ſhaped like a yam, and from ſix to ten pounds in weight. The juice, which it yields in great abundance, was found to be an excellent ſubſtitute for ſugar.

The inhabitants of the Sandwich iſlands are undoubtedly of the ſame race with thoſe of New Zealand, the Society and Friendly iſlands, Eaſter iſland, and the Marqueſas; a race that poſſeſſes, without any intermixture, all the known lands between the latitudes of 47° S. and 20° N., and between the longitudes of 184° and 260° E. They bear ſtrong affinity to ſome of the Indian tribes that inhabit the Ladrones and Caroline iſlands; and the ſame affinity may again be traced amongſt the Battas and the Malays. (See Malays.) The natives of theſe iſlands are in general above the middle ſize, and well made; they walk very gracefully, run nimbly, and are capable of bearing great fatigue; though, upon the whole, the men are ſomewhat inferior, in point of ſtrength and activity, to the Friendly iſlanders; and the women leſs delicately limbed than thoſe of Otaheite. Their complexion is rather darker than that of the Otaheiteans, and they are not altogether ſo handſome a people; however, many of both ſexes had fine open countenances; and the women, in particular, had good eyes and teeth, and a ſweetneſs and ſenſibility of look which rendered them very engaging. Their hair is of a browniſh-black, and neither uniformly ſtraight, like that of the Indians of America, nor uniformly curling, as amongſt the African Negroes, but varying in this reſpect, like the hair of Europeans. One ſtriking peculiarity in the features of every part of this great nation, Capt. King does not remember to have ſeen any where mentioned; which is, that, even in the handſomeſt faces, there is always a fulneſs of the noſtril, without any flatneſs or ſpreading of the noſe, that diſtinguiſhes them from Europeans. It is not improbable that this may be the effect of their uſual mode of ſalutation, which is performed by preſſing the ends of their noſes together. Inſtances of deformity are more frequent here than in any of the other iſlands. Squinting is alſo very common among them. Beſides theſe particular imperfections, they are, in general, very ſubject to boils and ulcers, which are attributed, ſays captain King, to the great quantity of ſalt they eat with their fleſh and fiſh. The "Erees" are very free from theſe complaints, but many of them ſuffer ſtill more dreadful effects from the immoderate uſe of the *ava*. Thoſe who were moſt affected by it had their bodies covered with a white ſcurf, their eyes red and inflamed, their limbs emaciated, the whole frame trembling and paralytic, accompanied with a diſability to raiſe the head. Although this drug does not appear univerſally to ſhorten life; yet it invariably brings on an early and decrepid old age. It was found, however, that by diſcontinuing the uſe of this root, the noxious effects of it ſoon ſubſided. The whole number of inhabitants cannot be leſs than 400,000. It was here, in the iſland of Owhyhee, that the celebrated captain Cook loſt his life, in a quarrel with the natives. Captain King, however, ſays, notwithſtanding the irreparable loſs we ſuffered, from the ſudden reſentment and violence of theſe people, yet, in juſtice to their general conduct, it muſt be acknowledged, that they are of the moſt mild and affectionate diſpoſition; equally remote from the extreme levity and fickleneſs of the Otaheiteans, and the diſtant gravity and reſerve of the inhabitants of the Friendly iſlands. They appear to live in the utmoſt harmony and friendſhip with one another. The women who had children were remarkable for their tender and conſtant attention to them; and the men would often lend their aſſiſtance in thoſe domeſtic offices, with a willingneſs that does credit to their feelings. It muſt, however, be obſerved, that they fall very ſhort of the other iſlanders in that beſt teſt of civilization, the reſpect to the women. Here they are not only deprived of the privilege of eating with the men, but the beſt ſorts of food are *tabooed*, or forbidden them. Theſe people are diſtinguiſhed by the hoſpitality and kindneſs which they exerciſed towards our voyagers. Whenever, ſays captain King, we came on ſhore, there was a conſtant ſtruggle, who ſhould be moſt forward in making us little preſents, bringing refreſhments, or ſhewing ſome other mark of their reſpect. Their natural capacity ſeems in no reſpect below the common ſtandard of mankind. Their improvements in agriculture, and the perfection of their manufactures, are certainly adequate to the circumſtances of their ſituation, and the natural advantages they enjoy. The eager curioſity with which they attended the armourer's forge, and the many expedients they had invented, even before we left the iſlands, for working the iron they had procured from us, into ſuch forms as were beſt adapted to their purpoſes, were ſtrong proofs of docility and ingenuity. Two inſtances were met with of perſons diſordered in their minds, the one a man at Owhyhee, the other a woman at Oneeheow. From the particular attention and reſpect paid to them it appeared, that the opinion of their being inſpired by the Divinity, which obtains among moſt of the nations of the Eaſt, is alſo received here. Though the cuſtom of eating the bodies of their enemies be not known by poſitive evidence to exiſt in any of the South Sea iſlands, except New Zealand, yet it is extremely probable that it was originally prevalent in them all. The ſacrificing of human victims, which ſeems evidently to be a relic of this horrid practice, ſtill obtains univerſally amongſt theſe iſlanders; and it is eaſy to conceive why the New Zealanders ſhould retain the repaſt, which was probably the laſt act of theſe ſhocking rites, longer than the reſt of their tribe, who were ſituated in more mild and fruitful climates. As the inhabitants of the Sandwich iſlands certainly bear a nearer reſemblance to thoſe of New Zealand, both in their perſons and diſpoſitions, than to any other people of this family; ſo it was ſtrongly ſuſpected by Mr. Anderſon, that, like them, they ſtill continue to feaſt on human fleſh. Captain King, however, entertained great doubts of the juſtice of Mr. Anderſon's concluſions. With reſpect to the information derived from the natives themſelves, he obſerves, that great pains were taken, by almoſt every officer on board, to come at the knowledge of ſo curious a circumſtance; and except in the two inſtances mentioned by Mr. Anderſon, they invariably denied the exiſtence of any ſuch cuſtom amongſt them. The argument drawn from the inſtrument made with ſhark's teeth, and which is nearly of the ſame form with thoſe uſed at New Zealand for cutting up the bodies of their enemies, is much more difficult to controvert. This knife, if it may be ſo called, is never uſed by them in cutting up the fleſh of other animals. But, as the cuſtom of offering human ſacrifices, and of burning the bodies of the ſlain, is ſtill prevalent here, it is not improbable that the uſe of this inſtrument is retained in thoſe ceremonies. Upon the whole, captain King inclines to think, that the horrid practice in queſtion has but lately ceaſed among theſe and other iſlands in the South Sea. La Perouſe (ſee his Voyage, vol. i. p. 100. Eng. ed.) coincides with captain King in opinion, that a people ſo good, ſo gentle, and ſo hoſpitable, cannot really be cannibals. It is difficult to aſſociate religious ferocity with gentleneſs of manners, and ſince, as captain King relates, that the prieſts of Owhyhee were their beſt friends, La Perouſe concludes, that if gentleneſs and humanity have made any progreſs among a claſs devoted by their office to human ſacrifices, the reſt of the inhabitants muſt be ſtill leſs ferocious. It is evident, therefore, that the practice of devouring human fleſh no longer ſubſiſts, though, probably, the period of its ceſſation has not long elapſed. The horror of thoſe people, ſays the French editor, at our ſuſpecting them of ſuch a practice, and eſpecially when aſked if they had devoured the body of captain Cook, confirms the opinion of La Perouſe; yet captain Cook has proved to a certainty its exiſtence among the New Zealanders; and it cannot be diſſembled, that the cuſtom of making human ſacrifices, and eating enemies killed in battle, is general in all the iſlands of the South Sea. The inhabitants of theſe iſlands differ from thoſe of the Friendly iſles, in ſuffering, almoſt univerſally, their beards to grow. There were, indeed, a few, amongſt whom was the old king, that cut it off entirely, and others that wore it only on the upper lip. Both ſexes wear necklaces, made of ſtrings of ſmall variegated ſhells; and an ornament, in the form of the handle of a cup, about two inches long, and half an inch broad, made of wood, ſtone, or ivory, finely poliſhed, which is hung about the neck by fine threads of twiſted hair, doubled ſometimes a hundred fold. Inſtead of this ornament, ſome of them wear, on their breaſts, a ſmall human figure, made of bone, ſuſpended in the ſame manner. The fan, or fly-trap, is alſo an ornament uſed by both ſexes: the moſt ordinary kinds are made of the fibres of the cocoa-nut, tied looſe, in bunches, to the top of a ſmooth poliſhed handle: the tail-feathers of the cock, and of the tropic bird, are alſo uſed in the ſame manner; but the moſt valuable are thoſe which have the handle made of the arm or leg-bones of an enemy ſlain in battle, and which are preſerved with great care, and handed down from father to ſon, as trophies of ineſtimable value. The cuſtom of tattooing the body, they have in common with the reſt of the natives of the South Sea iſlands; but it is only at New Zealand and the Sandwich iſlands that they tattoo the face. There is alſo this difference between the two laſt; that in the former, it is done in elegant ſpiral volutes; and in the latter, in ſtraight lines, croſſing each other at right angles. The hands and arms of the women are alſo very neatly marked; and they have a ſingular cuſtom amongſt them, the meaning of which we could never learn, that of tattooing the tip of the tongues of the females. The dreſs of the men generally conſiſts only of a piece of thick cloth, called the *maro*, ten or twelve inches broad, which they paſs between the legs, and tie round the waiſt. This is the common dreſs of all ranks of people. Their mats, ſome of which are beautifully manufactured, are of various ſizes, but moſtly about five feet long, and four broad. Theſe they throw over their ſhoulders, and bring forward before; but they are ſeldom uſed, except in time of war, for which purpoſe they ſeem better adapted than for ordinary uſe, being of a thick and cumberſome texture, and capable of breaking the blow of a ſtone, or any blunt weapon. Their feet are generally bare, except when they have occaſion to travel over the burnt ſtones, when they ſecure them with a ſort of ſandal, made of cords twiſted, from the fibres of the cocoa-nut. Such is the ordinary dreſs of theſe iſlanders, but they have another, appropriated to their chiefs, and uſed on ceremonious occaſions, conſiſting of a feathered cloak and helmet, which, in point of beauty and magnificence, is, perhaps, nearly equal to that of any nation in the world. Theſe feathered dreſſes ſeemed to be exceedingly ſcarce, appropriated to perſons of the higheſt rank, and worn by the men only. The common dreſs of the women bears a cloſe reſemblance to that of the men. They wrap round the waiſt a piece of cloth, that reaches half way down the thigh; and ſometimes in the cold of the evening they appeared with looſe pieces of fine cloth, wrapped ſeveral times round the waiſt, and deſcending to the leg, ſo as to have exactly the appearance of a full ſhort petticoat. The hair is cut ſhort behind, and turned up before, as is the faſhion of the Otaheiteans and New Zealanders.

The hair of both ſexes, ſays Liſianſky, (Voyage round the World in the years 1803, 4, 5 and, 6,) is black and ſtrong. The men cut theirs in different forms; but the prevailing faſhion at preſent, is that of a Roman helmet. The women crop theirs cloſe, leaving a ridge, about an inch and a half long, ſticking up, and extending from ſide to ſide on the forehead. This ridge of hair they daub over every afternoon with a ſort of pomatum (if I may uſe the word), made of ſhells and corals, to give it a yellowiſh appearance. The men do the ſame with theirs, colouring only the hair which forms the creſt of the helmet. From this practice, we were at firſt led to ſuppoſe the hair of the head to be of two natural colours; for the ridge and the creſt retain a portion of the hue they acquire by the frequent daubings. Contrary to the uſage of their neighbours (the other iſlanders of the South Sea), theſe people neither paint the body nor wear ornaments in their ears. They have, however, bracelets on their arms, made of bone.

The women ornament their heads with wreaths of flowers, or worſted threads, of different colours, ravelled out of European ſtuffs. The rich and poor are in common dreſſed alike; but, on particular occaſions, the rich put on their feather cloaks, which, with their helmets and fans, form a dreſs that muſt be admired every where.

Theſe people are extremely fond of the European dreſs, and receive with pleaſure, old ſhirts, jackets, and trowſers. We parted here with all our rags, in exchange for proviſions, and other articles of which we were in want.

Their necklaces are made of ſhells, or of a hard, ſhining red berry. At Atooi, ſome of the women wore little figures of the turtle, neatly formed of wood or ivory, tied on their fingers as we wear rings. They wear alſo an ornament made of ſhells, faſtened in rows on a ground of ſtrong netting, ſo as to ſtrike each other, when in motion; which, both men and women, when they dance, tie either round the arm or the ankle, or below the knee. Inſtead of ſhells, they ſometimes make uſe of dog's teeth, and a hard red berry, reſembling that of the holly. They have another ornament, which is a kind of maſk, made of a large gourd, with holes cut in it for the eyes and noſe. The top was ſtuck full of ſmall green twigs, which, at a diſtance, had the appearance of an elegant waving plume; and from the lower part hung narrow ſtripes of cloth, reſembling a beard.

It is obſervable, that the natives of the Sandwich iſlands approach nearer to the New Zealanders, in their cuſtoms and manners, than to either of their leſs diſtant neighbours of the Society or Friendly iſlands. This is peculiarly the caſe with reſpect to their method of living together in ſmall towns or villages, containing from about 100 to 200 houſes, built pretty cloſe together, without any order, and having a winding path leading through them. They are generally flanked, toward the ſea, with looſe detached walls, which are probably meant both for the purpoſes of ſhelter and defence. Their houſes are of different ſizes, from 18 feet by 12, to 45 by 24. But ſome are of a larger kind, which are deſigned for travellers or ſtrangers, who were only making a ſhort ſtay. At one end are mats, on which they ſleep, with wooden pillows, or ſleeping-ſtools, exactly like thoſe of the Chineſe. Some houſes of the better ſort have a court-yard before them, neatly railed in, with ſmaller houſes built round it for their ſervants. In this area they generally eat, and ſit during the day-time. On the ſides of the hills, and among ſteep rocks, are holes or caves, which appeared to be inhabited; the entrance is defended with wicker-work, and a ſtone fence runs acroſs it within, ſo that theſe ſeem to be principally deſigned for places of retreat, in caſe of an attack from an enemy.

The food of the lower claſs of people conſiſts, principally, of fiſh and vegetables; ſuch as yams, ſweet potatoes, tarrow, plantains, ſugar-canes, and bread. To theſe, the people of a higher rank add the fleſh of hogs and dogs, dreſſed in the ſame manner as at the Society iſlands. They alſo eat fowls of the ſame domeſtic kind with ours; but they are neither plentiful, nor much eſteemed by them. The way of ſpending their time appears to be very ſimple, and to admit of little variety. They riſe with the ſun, and, after enjoying the cool of the evening, retire to reſt a few hours after ſunſet. The making of canoes and mats forms the occupation of the erees; the women are employed in manufacturing cloth; and the tow-tows are principally engaged in the plantations and fiſhing. Their idle hours are filled up with various amuſements. Their young men and women are fond of dancing; and, on more ſolemn occaſions, they have boxing and wreſtling matches. Their muſic is alſo of a ruder kind, having neither flutes, nor reeds, nor inſtruments of any other ſort, that we ſaw, except drums of various ſizes. But their ſongs, which they ſung in parts, and accompany with a gentle motion of the arms, in the ſame manner as the Friendly iſlanders, had a very pleaſing effect. It is very remarkable, that the people of theſe iſlands are great gamblers. They have a game very much like our draughts, but, if we may judge from the number of ſquares, it is much more intricate. Swimming is not only a neceſſary art, in which both their men and women are more expert than any people we had hitherto ſeen, but a favourite diverſion among them. Their cloth is made of the ſame materials, and in the ſame manner, as at the Friendly and Society iſlands.

The cloth which they prepare for painting is of a thick and ſtrong texture, ſeveral folds being beat and incorporated together; after which it is cut in breadths, about two or three feet wide, and is painted in a variety of patterns, with a comprehenſiveneſs and regularity of deſign, that indicate very extraordinary taſte and fancy. The exactneſs with which the moſt intricate patterns are continued is the more ſurpriſing, when we conſider that they have no ſtamps, and that the whole is done by the eye, with pieces of bamboo cane dipped in paint; the hand being ſupported by another piece of the cane, in the manner practiſed by our painters. Their colours are extracted from the ſame berries and other vegetable ſubſtances, as at Otaheite. The buſineſs of painting belongs entirely to the women, and is called "kipparee:" and it is remarkable that they always gave the ſame name to our writing. Their mats are made of the leaves of the *pandanus;* and theſe, as well as their cloths, are beautifully worked in a variety of patterns, and ſtained of different colours. In this article of manufacture, whether we regard the ſtrength, fineneſs, or beauty, they certainly excel the whole world.

Their fiſhing-hooks are made of mother-of-pearl, bone, or wood, pointed and barbed with ſmall bones, or tortoiſe-ſhell. They are of various ſizes and forms; but the moſt common are about two or three inches long, and made in the ſhape of a ſmall fiſh, which ſerves as a bait, having a bunch of feathers tied to the head or tail. Thoſe with which they fiſh for ſharks are of a very large ſize, being, generally, ſix or eight inches long.

The line which they uſe for fiſhing, for making nets, and for other domeſtic purpoſes, is of different degrees of fineneſs, and is made of the bark of the *touta*, or cloth-tree, neatly and evenly twiſted, like our common twine. They have a finer ſort, made of the bark of a ſmall ſhrub, called *areamah;* and the fineſt is made of human hair. They alſo make cordage of a ſtronger kind, for the rigging of their canoes, from the fibrous coatings of the cocoa-nuts. They likewiſe make another ſort of cordage, which is flat, and exceedingly ſtrong, and which is uſed principally in laſhing the roofing of their houſes, and whatever they wiſh to faſten tight together. The gourds, which grow to an immenſe ſize, ſo as to be capable of containing from ten to twelve gallons, are applied to every kind of domeſtic purpoſes. Theſe they have of different forms, and they have a method of ſcoring them with a heated inſtrument, ſo as to give them the appearance of being painted in a variety of neat and elegant deſigns. Amongſt their arts we may alſo mention their manufacture of ſalt, which they produce of a good quality, and in great abundance. Their ſalt-pans are made of earth, lined with clay; being generally ſix or eight feet ſquare, and about eight inches deep. Theſe are raiſed upon a bank of ſtones near the high-water mark, from whence the ſalt-water is conducted to the foot of them, in ſmall trenches, out of which they are filled, and the brine quickly performs the neceſſary proceſs of evaporation.

Their inſtruments of war are ſpears, daggers, called *pahooas*, clubs, and ſlings.

The people of theſe iſlands are manifeſtly divided into three claſſes: the firſt are the *erees*, or chiefs of each diſtrict; one of whom is ſuperior to the reſt, and is called at Owhyhee, *eree-taboo*, and *eree-moee:* the ſecond claſs conſiſts of thoſe who appear to enjoy a right of property, without authority: the third are the *tow-tows*, or ſervants, who have neither rank nor property. The power of the erees over the inferior claſſes of people appears to be very abſolute: and the people pay them the moſt implicit obedience; and this ſtate of ſervility has a great effect in debaſing both their minds and bodies. Nevertheleſs, the chiefs were not chargeable with any acts of cruelty or injuſtice, or even of inſolent behaviour, towards them. Although it is not ſtated how far the property of the lower claſs is ſecured againſt the rapacity and deſpotiſm of the great chiefs, it ſhould ſeem, that it is ſufficiently protected againſt private theft, or mutual depredation. For not only their plantations, which are ſpread over the whole country, but alſo their houſes, their hogs, and their cloth, were left unguarded without the ſmalleſt apprehenſions. This circumſtance ſtrongly indicates, that the power of the chiefs, where property is concerned, is not arbitrary: or at leaſt, that it is ſo far circumſcribed and aſcertained, as to make it the intereſt of the inferior orders to cultivate the ſoil, and to occupy their poſſeſſions diſtinct from each other. It is pretty clear that the government is hereditary; which alſo makes it very probable, that the inferior titles and property itſelf deſcend in the ſame courſe.

The religion of theſe people reſembles, in moſt of its principal features, that of the Society and Friendly iſlands. Their morais, their whattas, their idols, their ſacrifices, and their ſacred ſongs, all of which they have in common with each other, are convincing proofs that their religious notions are derived from the ſame ſource. In all theſe countries there is a certain claſs of men to whoſe care the performance of their religious rites is committed. The head of this order, or ſociety of prieſts, is called "Orono," a title which ſeems to imply ſomething highly ſacred, and which, in the perſon of Omeeah, was honoured almoſt to adoration. It is probable that the privilege of entering into this order, or at leaſt to its principal offices, is limited to certain families. The title of "Orono" was given to Capt. Cook; and it is certain that our voyagers were regarded by the natives, generally, as a race of people ſuperior to themſelves; and they uſed often to ſay, that great "Eatooa" dwelled in our country. They have a number of images, both on the morais, and within and without their houſes, to which they give different names; but they were held in no high eſtimation. But amongſt theſe ſome particular figure was more favoured than others, and to this their adoration was addreſſed. This conſiſted in arraying it in red cloth; beating their drums, and ſinging hymns before it; laying bunches of red feathers, and different ſorts of vegetables, at its feet; and expoſing a pig, or a dog, to rot on the whatta that ſtood near it. They likewiſe give a place in their houſes to many ludicrous and ſome obſcene idols, like the Priapus of the ancients. It has been remarked, that both among the Society and Friendly iſlanders, an adoration is paid to particular birds, and the ſame cuſtom is ſaid to prevail here. The raven is thought to be the object of it. Two of theſe birds were ſeen at a village, which were ſaid to be "Eatooas," and caution was given, not to hurt or offend them. Among the religious ceremonies practiſed by theſe people, we may reckon the prayers and offerings made by the prieſts before their meals. On ſuch occaſions, and alſo when they drink *ava* between their meals, they join in a ſort of hymn, moving their bodies, and ſtriking their hands gently together, in concert with their fingers. Liſianſky gives an account of a religious ſect in the Sandwich iſlands, the members of which arrogate to themſelves the power of praying people to death. Whoever incurs their diſpleaſure, receives notice that the homicide litany is about to begin; and ſuch are the effects of imagination, that the very notice is frequently ſufficient with theſe poor people to produce the effect, or to drive them to acts of ſuicide. Human ſacrifices are more frequent here, (according to the account of the natives themſelves,) than in any other iſlands we viſited; theſe horrid rites are not only had recourſe to upon the commencement of war, and preceding great battles, and other ſignal enterprizes, but the death of any conſiderable chief calls for a ſacrifice of one or more tow-tows, according to his rank. To this claſs of their cuſtoms may alſo be referred that of knocking out their fore-teeth. Scarcely any of the lower people, and very few of the chiefs, were ſeen, who had not loſt one or more of them; and our voyagers underſtood, that this voluntary puniſhment, like the cutting off of the joints of the finger at the Friendly iſlands, was not inflicted on themſelves from the violence of grief, on the death of their friends, but was deſigned as a propitiatory ſacrifice to the "Eatooa," to avert any danger or miſchief to which they might be expoſed.

Little could be known with regard to their notions of a future ſtate. When they were aſked whither the dead were gone? the anſwer was, that the breath, which they ſeemed to conſider as the ſoul, or immortal part, was gone to the " Eatooa ;" and on repeating and urging the enquiry, they ſeemed to deſcribe ſome particular place, which they ſuppoſed to be the abode of the deceaſed ; but it did not appear as if they thought that, in this ſtate, either rewards or puniſhments awaited them.

As to their marriages, we have little to ſay, except that ſuch a relation or compact exiſts among them. In noticing their domeſtic concerns, it was found that the houſe ſeemed to be under the direction of one man and woman, and the children in the like ſtate of ſubordination as in civilized countries.

With regard to their funeral rites, we are informed, that on the death of an old chief, a number of people aſſembled, and ſeated themſelves round a ſquare area, fronting the houſe in which the deceaſed lay ; whilſt a man, in a red feathered cap, advanced from an interior part of the houſe to the door, and putting out his head, at almoſt every moment uttered a moſt lamentable howl, accompanied with the moſt ſingular grimaces and violent diſtortions of his face that can be conceived. After this ceremony, a large mat was ſpread upon the area, and two men and thirteen women came out of the houſe and ſat upon it, in three equal rows ; the two men and three of the women being in the front. The necks and hands of the women were decorated with feathered ruffs ; and broad green leaves, curiouſly ſcolloped, were ſpread over their ſhoulders. At one corner of the area, near a ſmall hut, appeared ſix boys, wearing ſmall white banners, and tufted wands, or *taboo*-ſtrikes (ſee Taboo) ; who would not permit our voyagers to approach them. The dead body, apprehended to be in this hut, ſtill remained in the houſe where the man in the red cap opened the funeral rites. The company, ſeated on the mat, began to ſing a melancholy tune, accompanied with a gentle and ſlow motion of the body and arms. They then raiſed themſelves on their knees, and in a poſture between kneeling and ſitting, moved their bodies and arms very rapidly, the tune keeping pace with their motions. After this performance had laſted an hour, with ſlower movements at intervals, more mats were ſpread upon the area, and four or five elderly women, one of whom was the wife of the deceaſed chief, advanced ſlowly out of the houſe, and being ſeated in the front of the firſt company, began to cry and wail moſt bitterly ; the women behind them joining in theſe lamentations, and the two men inclining their heads over them in a very melancholy and penſive attitude. In this ſituation they continued till night ; when the corpſe was removed during the abſence of Capt. King ; nor could he learn in the morning how it had been diſpoſed of. Three women of rank, however, informed him, that the preſence of ſtrangers hindered them from performing ſome neceſſary rites. Scarcely had he gone out of ſight, before he heard their cries and lamentations ; and meeting them a few hours afterwards, he found that they had painted the lower part of their faces perfectly black.

The chiefs are interred in the morais, or heree-erees, with the men ſacrificed on the occaſion by the ſide of them.

In Turnbull's Voyage round the World in the years 1800, 1, 2, 3, 4, we are told, that the Sandwich iſlanders form, in almoſt every reſpect, a ſtriking contraſt to the Otaheiteans. Without entering into the details of this difference, we ſhall only obſerve, that the intercourſe with Europeans has greatly and rapidly advanced them in civilization. Inſtead of miſſionaries, who teach them little, partly from their own want of comprehenſion, and partly from the ignorance of their inſtructors—or convicts and deſerters, who teach them every bad leſſon—the natives of Owhyhee have had American traders reſiding among them for fourteen years ; and they have had all the benefits which are frequently conferred on riſing communities by the appearance of one of thoſe great men, who go before their age, and lead, rather than force onward, the progreſs of ſociety ; the name of this ſingular perſon is Tamahama ; and our author's account of him is by much the moſt intereſting part of his work. We have not room for a long extract ; but we conceive, that the inſertion of the following paſſage will convey a more diſtinct idea of the progreſs made in civility by thoſe iſlanders, and of the character of this extraordinary perſon, than the moſt elaborate abſtract.

" His palace is built after the European ſtyle, of brick, and glazed windows, having European and American artificers about him of almoſt every deſcription. Indeed his own ſubjects, from their intercourſe with Europeans, have acquired a great knowledge of ſeveral of the mechanical arts, and have thus enabled him to increaſe his navy, a very favourite object with him. I have no doubt that, in a very few years, he will erect amongſt theſe iſlands a power very far from deſpicable.

" The circumſtances of this enterpriſing chief were greatly changed ſince the viſit of Capt. Vancouver, to whom, as to the ſervant and repreſentative of the king of Great Britain, with much formality and ceremony, he had made a conveyance of the ſovereignty of Owhyhee, in the hopes of being thus more ſtrongly confirmed in his authority, and ſupplied with the means of reſiſting his enemies.

" His dominion ſeems now to be completely eſtabliſhed. He is not only a great warrior and politician, but a very acute trader, and a match for any European in driving a bargain. He is well acquainted with the different weights and meaſures, and the value which all articles ought to bear in exchange with each other ; and is ever ready to take the advantage of the neceſſity of thoſe who apply to him or his people for ſupplies.

" His ſubjects have already made conſiderable progreſs in civilization ; but are held in the moſt abject ſubmiſſion, as Tamahama is inflexible in puniſhing all offences which ſeem to counteract his ſupreme command.

" It was only in 1792 that Capt. Vancouver laid down the keel of Tamahama's firſt veſſel, or rather craft ; but ſo aſſiduouſly has he applied himſelf to effect his grand and favourite object, the eſtabliſhment of a naval force, that, at the period of our arrival, he had upwards of twenty veſſels of different ſizes, from twenty-five to fifty tons : ſome of them were even copper-bottomed." N. lat. 21° 30′ to 22° 15′. E. long. 199° 20′ to 201° 30′. See Cook's Third Voyage, vol. ii. and vol. iii.

Sandwich *Land*, a name given by captain Cook to the moſt ſoutherly land diſcovered in the South Atlantic ocean ; otherwiſe called " Southern Thule." S. lat. 59° 30′.

SANDWICK. See Stromness.—Alſo, a town of the iſland of Pomona, on the weſt ſide. N. lat. 58° 53′. W. long. 5° 8′.—Alſo, a ſmall iſland near the weſt coaſt of Yell. N. lat. 60° 55′. W. long. 1° 30′.

SAND-WORT, in *Botany*. See Arenaria.

SANDWYCK, in *Geography*, a town of Norway, in the province of Chriſtiania ; 24 miles S.S.W. of Chriſtiania.—Alſo, a town of Norway, in the province of Drontheim ; 56 miles N.N.E. of Romſdal.

SANDY, a town of Hindooſtan, in Oude ; 45 miles W.S.W. of Kairabad. N. lat. 27° 17′. E. long. 81° 22′.

Sandy *Bay*, a bay in the ſtraits of Magellan. S. lat. 53° 10′. W. long. 72° 13′.—Alſo, a bay on the weſt coaſt of Newfoundland ; 43 miles S. of Point Rich.—Alſo, a bay on the north coaſt of the iſland of St. Chriſtopher's ; 1 mile E.S.E. of Diep town.—Alſo, a bay on the north-eaſt coaſt of New Zealand, between North Cape and Knuckle Point.—Alſo, a bay on the north-eaſt coaſt of lake Ontario.—Alſo, a bay, called “Little Sandy bay,” on lake Ontario, between Sophiaſburgh and Maryburgh, ſupplied by the eaſt lake, lying alſo between theſe townſhips, in the county of Prince Edward.—Alſo, a bay at the eaſt end of Jamaica, S. of Mulatto river, and 6 miles N. of Manchaneel harbour.—Alſo, a bay at the north-weſt extremity of the ſame iſland, weſt of Stoddard bay, and eaſt of Green iſland. *Little Sandy bay*, on the S.E. part of the iſland, is about a league W. of point Morant. *Sandy Cages* lie off the entrance of Port Royal Harbour.

Sandy *Cape*, a cape of New Holland, ſo called by Cook from two very large patches of white ſand which lay upon it. It is high enough to be ſeen at the diſtance of 12 leagues, in clear weather, and lies in lat. 24° 25′, long. 206° 51′.

Sandy *Cove*, a bay on the coaſt of Maſſachuſetts, N. of Cape Ann, lying between two head-lands. N. lat. 42° 45′. W. long. 70° 30′.

Sandy *Creek*, a river of America, which runs into the Ohio, N. lat. 38° 44′. W. long. 81° 55′.—Alſo, a river of South Carolina, which runs into the Cangaree, N. lat. 34° 37′. W. long. 81° 40′.

Sandy *Deſart, Great*, a deſart of Perſia, which is reckoned to extend from the banks of the Haermund to the great range of mountains, which ſeparates the ſouthern from the northern diviſion of Mekran, a diſtance of 400 or 450 miles; and from the town of Nooſhky to that of Jaſk (ancient Gedroſia), a diſtance of rather more than 200 miles. The ſand of this deſart is of a reddiſh colour, and ſo light, that the particles, when taken in the hand, are ſcarcely palpable. It is raiſed by the wind into longitudinal waves, which preſent, on the ſide towards the point from which the wind blows, a gradual ſlope from the baſe; and on the other ſide, they riſe perpendicularly to the height of 10 or 20 feet, and appear at a diſtance like a new brick wall. The camels, having aſcended the ſlope ſide, which they did with greater eaſe than they could mount the perpendicular ſide, as ſoon as they perceived the top of the wave giving way with their weight, moſt expertly dropped on their knees, and in that manner deſcended with the ſand, which was ſo looſe, that the firſt camel made a path ſufficient for the others to follow. This impediment was trifling, however, compared to that which travellers experience from floating or moving particles of ſand.

Arrian, ſpeaking of the march of Alexander through Gedroſia, ſays, that every beaſt of burden belonging to the army was nearly ſmothered in deep ſcorching ſand, and that they found many little tumuli, or hillocks of ſand, which they were obliged to aſcend; and where no firm footing could be had, they ſunk deep into it, as they would into clay, or newly fallen ſnow.

The deſart ſeems, at the diſtance of half a mile, to be a flat ſurface, about eight or ten inches above the level of the waves. This cloud or vapour appears conſtantly to recede as the travellers advance, and at times completely envelopes them, filling their eyes, ears, and mouths, and cauſing a moſt diſagreeable ſenſation. It is productive of great irritation and ſevere thirſt, not a little increaſed by the ſcorching rays of the ſun. The ground is ſo hot as to bliſter the feet, even through the ſhoes; and the natives affirm, that it is the violent heat which occaſions the ſand to move through the atmoſphere. The phenomenon now deſcribed is only ſeen during the heat of the day. The “ſahrah,” (*i. e.* the water of the deſart,) or watery appearance, ſo common in all deſarts, and the moving ſands, are ſeen at the ſame time, and appear to be perfectly diſtinct; the one having a luminous, and the other a cloudy appearance. The wind in this deſart is diſtinguiſhed, throughout the Eaſt, by the term of the “hade ſumoom,” or peſtilential wind. It has been known to deſtroy even camels, and other hardy animals; and its effects on the human frame are ſaid to be the moſt dreadful that can poſſibly be conceived. In ſome inſtances it kills inſtantaneouſly; but in others, the wretched ſufferer lingers for hours, or even days, in the moſt excruciating torture. Kinneir's Perſ. Emp.

Sandy *Harbour*, a port on the ſouth-eaſt point of the iſland of St. Lucia, where a ſmall river runs into the ocean.

Sandy *Hall Bay*, a bay on the north-eaſt coaſt of the iſland of St. Chriſtopher, a little to the weſtward of Windward Point.

Sandy *Hill*, a ſmall village of America, in New York, in the townſhip of Kingſbury, 2 miles N. of Fort Edward, on a high hill that overlooks Hudſon's river from the eaſt, in which is a poſt-office; 454 miles from Waſhington.

Sandy *Hill Point*, a cape on the north coaſt of the iſland of Barbadoes.

Sandy *Hook*, a ſmall iſland near the coaſt of New Jerſey, formerly a peninſula; but in 1777 and 1778 the ſea broke through the iſthmus, and formed it into an iſland; 7 miles S. of Long iſland. *Sandy Hook* or *Point* forms a capacious harbour. The light-houſe on the north point of the Hook lies in N. lat. 40° 30′. W. long. 74° 2′. When America was firſt diſcovered, few or no cod-fiſh were found ſouth of the banks of Newfoundland and Sable iſland. About 40 years ago they were diſcovered off Sandy Hook, and ever ſince they have become more plentiful on the fiſhing grounds off the Neverſink, in ſix, ſeven, and eight fathoms water.

Sandy *Inlet*, a channel between two ſmall iſlands near the coaſt of North Carolina. N. lat. 34° 29′.

Sandy *Iſland*, one of the ſmaller weſtern iſlands of Scotland. N. lat. 57° 2′. W. long. 6° 27′.—Alſo, an iſland in the Eaſt Indian ſea. N. lat. 10° 40′. E. long. 112° 48′.—Alſo, a ſmall iſland near the coaſt of Antigua. N. lat. 17° 4′. W. long. 67° 37′.—Alſo, a ſmall iſland near the ſouth coaſt of Antigua, one mile S. of Willoughby.—Alſo, a ſmall iſland in the Spaniſh main, near the Moſquito ſhore. N. lat. 14° 37′. W. long. 82° 10′.—Alſo, a ſmall iſland in the Indian ſea, near the coaſt of Africa. S. lat. 16° 40′.—Alſo, a ſmall iſland in the Chineſe ſea, near the coaſt of Cochinchina. N. lat. 12° 28′. E. long. 109° 12′.—Alſo, a ſmall iſland near the weſt coaſt of Sumatra. S. lat. 1° 50′. E. long. 100° 18′.—Alſo, two ſmall iſlands in the Chineſe ſea. N. lat. 10° 45′. E. long. 116° 40′.

Sandy *Key*, two rocky iſlets near the ſouth coaſt of Cuba. One in N. lat. 21° 20′. W. long. 82° 5′; and the other in N. lat. 21° 25′. W. long. 81° 25′.

Sandy *Lick*, a river of Pennſylvania, which runs into the Allegany, N. lat. 41°. W. long. 79° 32′.

Sandy *Point*, a cape in the ſtraits of Magellan. S. lat. 53° 10′.—Alſo, a cape of Weſt Florida, on the north part of St. Roſa bay.—Alſo, a town on the ſouth-weſt coaſt of the iſland of St. Chriſtopher. N. lat. 17° 27′. W. long. 62° 45′.—Alſo, a cape on the north point of Nantucket iſland. N. lat. 41° 22′. W. long. 69°.—Alſo, a town on the north-weſt coaſt of the iſland of St. Chriſtopher. It is a port of entry, and is defended by Charles fort, and Brimſtone hill, both near the town.—Alſo, the ſouth-eaſt extremity of the ſtate of Maſſachuſetts. N. lat. 41° 40′. W. long. 69° 55′.—Alſo, a cape on the ſouth-eaſt coaſt of the Chiampa. N. lat. 10° 57′. E. long. 108°.—Alſo, a cape of the iſland of Tobago. N. lat. 11° 6′. W. long. 6° 37′.

—Alſo, the ſouth-eaſt extremity of the iſland of St. Lucia. —Alſo, the ſouth-eaſt extremity of Antigua.

SANDY *River*, a river of Canada, which runs into lake Superior, 30 miles S. of Cape Chaillons.—Alſo, a river which runs into the ſame lake, N. lat. 47° 20′. W. long. 84° 55′.—Alſo, a river of the province of Maine, which riſes in Cumberland county, and, purſuing a north-eaſt courſe, runs into the Kennebeck, at the north-weſt corner of the townſhip of Starks.—Alſo, a river of America, which riſes in the Great Laurel mountains, from two ſprings called the "eaſtern and weſtern branches," which unite at Balclutha. The eaſtern branch ſeparates Kentucky from Virginia, as does the main ſtream, which runs into the Ohio, N. lat. 38° 8′. W. long. 82° 35′.

SANDY *Lands*, in *Agriculture*, thoſe ſorts of land which are in a great meaſure conſtituted of ſome kind of ſandy materials. Grounds of this nature are met with in large quantities in many parts of this country. See SAND-*Lands* and SOIL.

Theſe ſorts of land have commonly a much larger proportion of earthy materials in their compoſition, than thoſe which are denominated ſand-lands by farmers. The great miſchief of all theſe kinds of lands is, however, that of letting the moiſture run or drain through them too quickly, whereby they are liable to become dry and parched up. This may, however, be in ſome meaſure obviated by judicious manuring with ſubſtances of the clayey, loamy, and ſtiff muddy deſcriptions. The exact nature of them ſhould always be well aſcertained, before any calcareous matters are applied to them, as they may often contain them in a ſufficient quantity. Theſe ſorts of lands are likewiſe capable of being wrought at all ſeaſons, and with more convenience and leſs expence than moſt other kinds. In laying out ſandy lands, the incloſures ſhould be ſmaller than thoſe in other deſcriptions of ſoil. Hedges will here alſo be rather beneficial than injurious.

SANDY *Marle*, that ſort in which the clayey part contains an exceſs of ſand. When treated with acids, the reſiduum or clayey parts is found to contain more than 75 hundred-weight of ſand; of courſe chalk and ſand are the two prevalent ingredients. In colour it is browniſh-grey, or of a lead-colour. It is moſtly of a friable and flaky nature, but occaſionally forms very hard lumps. It ſeldom falls readily to pieces in water; but it chips and moulders away, by free expoſure to the influence of the atmoſphere and moiſture, though in but a ſlow and gradual manner. It efferveſces with acids; but the reſiduum, after ſolution, is not capable of forming a brick.

SANDY *Soil*, that which is of a ſandy nature. See SAND and SOIL.

SANDYNESS, in *Geography*, the northern extremity of the iſland of Rum. N. lat. 57° 3′. W. long. 6° 18′.

SANDYS, or, as it is ſometimes ſpelt, SANDES, EDWIN, in *Biography*, a learned prelate of the church of England, ſon of William Sandys, eſq., a magiſtrate in the county of Lancaſter, was born in the year 1519. He received his academical education at St. John's college, Cambridge, where he was admitted to the degree of B.A. in 1539, and to that of M.A. in 1541. In the following year he filled the office of junior proctor of the univerſity. In 1547 he proceeded to the degree of B.D., and was ſoon after elected maſter of Catharine-Hall. In 1548 he was vicar of Haverſham; and in 1549 he was preſented with a prebend in the church of Peterborough, and took his degree of D.D. In 1552 he was nominated by king Edward to a prebend in the cathedral church of Carliſle; and at the death of that monarch in the following year, he was vice-chancellor of the univerſity of Cambridge. On this event Dr. Sandys, who had been zealouſly affected towards the Proteſtant religion, took a zealous part in raiſing lady Jane Grey to the throne. He preached a ſermon before the univerſity, maintaining her right and title to the crown. He was deſired by the duke of Northumberland and others, who heard it, and at whoſe deſire it was preached, to print it, with which he readily complied; before, however, it could be written out, a change took place, which his friends thought required him to ſeek his ſafety by flight. But while others either fled, or readily abandoned their principles, he refuſed either alternative; and when he was deſired to proclaim queen Mary in the market-place at Cambridge, he ſaid it was ſo contrary to the opinions lately maintained by him in the pulpit, that he would not conſent to act ſo inconſiſtently: the conſequence of which was, that he was immediately ſtripped of his preferments, and it was reſolved that he ſhould be committed to the Tower. Of this reſolution he was informed by Mr. Thomas Mildmay, one of the duke of Northumberland's party, who ſaid, he was ſurpriſed that a learned man like Dr. Sandys could have ſpoken ſo unadviſedly, and ſtill more, that he would not turn with the ſtream: to which the worthy doctor replied; "I have not yet learned to change without conviction, and ſhall not be aſhamed of bonds. But if I could act as Mr. Mildmay acts, I need fear no bonds; for you came down againſt queen Mary, and armed in the field, and now return for queen Mary;—before a traitor, and now a zealous friend. I cannot with one mouth blow hot and cold after this ſort." He was accordingly immured within the walls of the Tower ſeven months, and was then releaſed from that priſon, and ſent to the Marſhalſea. It was while he was in this ſituation that Wyatt came at the head of his inſurgents to Southwark, who invited Dr. Sandys to join him with his company and counſel; but this he declined. Having been about two months in the Marſhalſea, he obtained his liberty; but was nearly committed a ſecond time, through the zeal of Gardiner, who was informed that Dr. Sandys was one of the greateſt heretics in England, and one of the principal corrupters of the univerſity. The doctor was appriſed of the intentions of his enemies, and went to Antwerp, where he arrived in the month of May 1554: from thence he was obliged to ſet off to Augſburg, to avoid the perſecution of king Philip, who had given orders to apprehend him whereever he might be found in the territories over which he had any influence. At Straſburg he was joined by his wife, whom he ſhortly after loſt by a decline, as he did a child by the plague. Towards the end of 1558 he went to Zurich, where he reſided ſeveral weeks in the houſe of Peter Martyr, with whom he ever afterwards maintained a friendly correſpondence. Upon the death of the queen he returned to Straſburg, and from thence he came to England, where he arrived in January 1558-9. In the following March queen Elizabeth appointed him one of the nine Proteſtant divines, who were to hold a diſputation with an equal number of the Popiſh clergy, before both houſes of parliament, at Wincheſter. He was alſo choſen one of the commiſſioners who were ſelected to prepare a new liturgy, and to deliberate on other matters for the reformation of the church. In 1559 he was nominated to the biſhopric of Carliſle, which he thought proper to decline; but accepted of that of Worceſter, and was conſecrated on the 21ſt of December. At this period Dr. Sandys was decidedly averſe from the uſe of Popiſh habits; but finding the queen a great ſtickler for theſe, and for certain images, he ſubmitted rather than loſe her majeſty's favour, and his own high preferment. On the biſhop's firſt viſitation in 1560, he was informed ſeveral of the prieſts indulged themſelves in licentious practices, which was generally ſcandalous to good morals, that he took occaſion, in a ſermon which he preached at the cathedral, to ſhew how neceſſary it was that prieſts ſhould be allowed to marry. When, about the year 1565, it was determined that a new tranſlation of the bible ſhould be made, Dr. Sandys, on account of his great ſkill in the original languages, was one of the biſhops who were appointed to undertake that work; and he had allotted to him the firſt and ſecond books of Kings, and the firſt and ſecond books of Chronicles. In the year 1570, upon the tranſlation of Grindal from the biſhopric of London to the archbiſhopric of York, Dr. Sandys was appointed by the queen to the vacant ſee, which he ſeemed at firſt deſirous of declining, but which at length he accepted. In 1571 he was ordered by the queen to aſſiſt the archbiſhop of Canterbury in the eccleſiaſtical commiſſion againſt the Papiſts and Puritans, the duties of which office he performed with great ſeverity. He charged the Puritans particularly with ſedition; and becauſe they ſteadily juſtified themſelves, he called upon his coadjutors to agree to their baniſhment from the city of London. He alſo laid claim to be ſuperintendant of the Dutch church in London, which occaſioned ſome uneaſineſs between him and the congregation. In 1576 he was tranſlated to the archbiſhopric of York, which involved him in ſome ſerious diſputes reſpecting the temporalities of the ſee, and in others with his ſucceſſor, the new biſhop of London, concerning the rents and dilapidations. In 1577 archbiſhop Sandys reſolved to viſit his whole province, in order, if poſſible, to put an end to all nonconformity. In purſuance of this reſolution, he proceeded in the firſt inſtance to Durham, where the dean, Dr. Whittingham, was the principal perſon under the biſhop, who had a ſecret and ſtrong inclination to Puritan principles, and who had not been ordained according to the form of the Engliſh ſervice book. Accuſations were preferred againſt him; but inſtead of anſwering them, he claimed his privileges, and inſiſted on the rights of the church of Durham: he even denied the archbiſhop's power in viſitation, upon which the archbiſhop, without heſitation, excommunicated him. Dr. Whittingham appealed to the queen, who appointed a commiſſion to inquire into the merits of the caſe. Of this commiſſion the preſident and another of the members were friendly to the Puritans, ſo that Whittingham eſcaped without cenſure. The archbiſhop was not at all ſatisfied that the matter ſhould thus have terminated, and he made ſome other attempts to haraſs the object of his enmity, which created againſt the prelate a great degree of odium. His eagerneſs alſo to find out Papiſts, and prevent their pernicious deſigns, rendered him very obnoxious to perſons of that communion. His life was thus rendered a ſcene of perpetual contention and warfare, in which he had of courſe numerous enemies, by whom many attempts were made to ruin his reputation and intereſt. One ſcheme, which was planned with this view, is thus related. In May 1582 he ſlept at an inn in Doncaſter, where, through the contrivance of ſir Robert Stapleton and other perſons, his enemies, the innkeeper's wife was, in the middle of the night, and while he was aſleep, conveyed into his bed. At the ſame moment, and according to a preconcerted plan, the huſband ruſhed into the room with a drawn dagger, threatening to avenge an injury which he pretended to have ſuſtained. By the diſturbance, ſir Robert Stapleton was ſuppoſed to have been awaked, and coming into the room, and ſeeming to give credit to the charge, adviſed the prelate to ſatiſfy the innkeeper rather than ſuffer ſuch a report to be noiſed abroad. The archbiſhop proteſted his innocence. Admitting the fact, ſaid the cunning Stapleton, ſtill the credit of religion requires that the ſuſpicion ſhould not for a moment get abroad. The archbiſhop unwarily followed the advice, and was accordingly laid under heavy contributions for a conſiderable time. At length he, by ſome means, diſcovered the hypocriſy of Stapleton, and brought the affair into the ſtar-chamber; and after a full examination of the buſineſs, he was declared innocent, and ſir Robert, with his accomplices, were ſentenced to an impriſonment and heavy fines. He died, after a life of toil and trouble, in July 1588, in the 69th year of his age. Several Letters, and other papers written by him, are inſerted in Strype's "Annals," in his "Life of Archbiſhop Whitgift," and in Burnet's "Hiſtory of the Reformation." In the year 1616, twenty-two of his diſcourſes were collected together, and printed in a ſmall quarto, under the title of "Sermons of the Moſt Rev. Father in God, Edwin, Archbiſhop of York."

Sandys, George, a traveller and poet, born in 1577, was the youngeſt ſon of the preceding. He was educated at Oxford, and in 1610 ſet out on his travels, which, after he had viſited the principal parts of Europe, he extended to Greece, Turkey, Paleſtine, and Egypt. On his return, he employed himſelf in digeſting the obſervations which he had made, and which he publiſhed in 1615, in a folio volume. His deſcriptions chiefly relate to the Eaſtern countries, and to Italy. The book was extremely popular for ſome conſiderable time after it was publiſhed. In 1673 it had reached to the ſeventh edition. The author next diſtinguiſhed himſelf as a poet. He died in 1643. He was regarded as an accompliſhed gentleman, as well as a man of great worth, learning, and ability. His chief works, as a poet, are "Ovid's Metamorphoſes engliſhed, mythologized, and repreſented in Figures;" to which was ſubjoined, "An Eſſay to the Tranſlation of the Æneis." In 1636 he publiſhed "A Paraphraſe on the Pſalms of David, and upon the Hymns diſperſed throughout the Old and New Teſtament." In 1640 he publiſhed "Chriſt's Paſſion," a tranſlation of Grotius's ſacred drama, "Chriſtus Patiens." He was thought by Dryden and Pope to have contributed very much to the improvement of Engliſh poetry. He paſſed the latter years of his life chiefly with ſir Francis Wyatt of Bexley, in Kent, He was intimately acquainted with the excellent lord Falkland, who addreſſed ſome poems to him, which are printed in Nichols's "Select Selections."

SANDYSTON, in *Geography*, a townſhip of America, in Suſſex county, New Jerſey, on Delaware river, at the foot of the Blue mountains, about 11 miles above Walpack, and at the ſame diſtance N.W. of Newton. It contains 703 inhabitants.

SANDYX, a kind of minium, made of ceruſſe, or rather lead, calcined and rubefied; called alſo *factitious ſandarach*.

It is of little uſe in painting; the real minium, or red lead, to which it is ſubſtituted, making a much better, brighter, and more durable colour.

Though the generality of authors have taken this to be only a name for the fine red colour, ſome have plainly uſed it for a blueiſh-green.

Strabo tells us, that the colour uſed by painters in his time, and called *armenium pictorium*, was of a blueiſh-green colour, and that it was called *ſandycis metallum* by ſome. Thus the word *zarnich* was made to expreſs the ſame two things with the addition of the yellow orpiment; and Avicenna deſcribes them altogether, telling us, that zarnich is yellow, red, or green. The two firſt of theſe colours are natural to zarnich, as the name of orpiment; and there is, indeed, a greeniſh zarnich now alſo known in the world, but that was unknown in his time; and we find that he meant the *lapis armenus* by the *green zarnich*.

SANE, in *Ancient Geography*, a town of Thrace, in the Acanthian iſthmus, or on mount Athos, near the canal formed by Xerxes, according to Herodotus. Thucydides ſays, that it was a colony of the iſle of Andros, and that it was on the Singitic gulf on the coaſt of the ſea which commands the iſle of Eubœa.

SANE *Memory*, *i. e.* perfect and ſound memory to do any lawful act.

SANEMKIAN, in *Geography*, a town of Perſia, in Farſiſtan; 40 miles S. of Schiras.

SANEN, SANA, or *Sarne*, a river of Switzerland, which riſes in the mountains between the canton of Berne and the Valais, and runs into the Aar, 7 miles W. of Berne.

SANEN, *Samen*, or *Geſſenay*. See SAMEN.

SANENSIS CIVITAS, in *Ancient Geography*, a town of Aſia Minor, in Phrygia.

SANETSCH, in *Geography*, a mountain of Switzerland, between the canton of Berne and the Valais, N. of Sion.

SANF, or SAF, in *Rural Economy*, a provincial term applied to the willow, or ſallow, in ſome places.

SANFORD, in *Geography*, a poſt-town of America, in York county and ſtate of Maine, having 1492 inhabitants. Mouſom river paſſes through Sanford and Great Works, which is a north-eaſterly branch of Piſcataqua, that has its ſource here, and paſſes into Berwick.—Alſo, a townſhip of Dutcheſs county, New York; 50 miles N.N.E. of New York.

SANFRO, a town of France, in the department of the Tanaro; 7 miles S.E. of Carmagnola.

SANFY, in *Agriculture*, a provincial term ſignifying wet, as land in a rainy ſeaſon; ſoft pulpy ground unfit for being wrought.

SANGA, in *Geography*, a town of Japan, at the lower end of the bay of Ximabara, in the iſland of Ximo, regularly built, with ſtraight ſtreets, and defended by a citadel; 40 miles N.E. of Nagaſaki. N. lat. 32° 44′. E. long. 130° 44′.

SANGAAR, *Straits of*, a narrow channel of the Pacific ocean, between the iſland of Jeſſo and Japan.

SANGADA, in *Ancient Geography*, a maritime country of India, W. of the mouths of the Indus.

SANGALA, an iſland of India, towards the origin of the river Indus; called Sagala by Ptolemy.

SANGALIA, or EUTHYDEMIA, a town of India, on this ſide of the Ganges, between the rivers Hydraous and Hyphaſis, towards 30 degrees and ſome minutes of latitude.

SANGALLAN, called *Congallan* by Britiſh ſeamen, in *Geography*, a ſmall iſland and cape in the Pacific ocean, on the coaſt of Peru, N.N.W. of the iſland of Labos, and three miles N.W. of Carette iſland: on the ſouth ſide of the cape is a very good harbour, frequented by coaſting veſſels from Lima and Panama. S. lat. 13° 45′. Off this cape the weather is very ſtormy.

SAN-GALLO, ANTONIO DE, in *Biography*, a celebrated architect, was born in the 15th century, in the territory of Florence. His father, Antonio Picconi, was a cooper by trade, and Antonio was brought up to the buſineſs of a joiner. Having, however, two uncles, Giuliano and Antonio San-Gallo, architects of conſiderable reputation at Rome, he placed himſelf under their tuition, and aſſumed their name. He ſoon exhibited conſiderable talents, and his progreſs in the art made him known to Bramante, who, in 1512, entruſted to him the execution of ſeveral works. He ſoon obtained employment from ſome cardinals; and in the pontificate of Leo X., when his uncle Giuliano quitted Rome, he was appointed his ſucceſſor as architect of St. Peter's, in conjunction with Raphael. He alſo manifeſted great ſkill as an engineer, and Leo adopted a plan which he gave for the fortification of Civita Vecchia. Under Clement VII. he was employed in enlarging and embelliſhing the Vatican palace, and in repairing the fortifications of Parma and Placentia. He is alſo celebrated for the conſtruction of a remarkable well at Orvietto, which had two ſtaircaſes for the deſcent and aſcent of beaſts of burden. He enjoyed the favour of Paul III., who employed him in many important works as architect and engineer; and when Charles V. viſited Rome after his Tuniſian expedition, San-Gallo had the planning of the triumphal decorations with which he was received. The Pauline chapel, and the magnificent ſtaircaſes by which the chapels of the Vatican communicate with St. Peter's, were of his conſtruction. The grandeſt effort of his genius was a wooden model of St. Peter's, which, however, was not cloſely followed. As he was noted for the ſolidity of his building, he was employed in ſtrengthening the foundations of the Vatican, and of the great columns which ſupport the cupola of St. Peter's. Being engaged by the pope to ſurvey the inundations of the lake of Marmora, the heat and the exhalations from the foul water cauſed a diſeaſe, of which he died in the year 1546. Gen. Biog.

SANGAM, in *Geography*, a town of Hindooſtan, in the Carnatic, on the Pennar; 24 miles W.N.W. of Nellore.—Alſo, a town of Hindooſtan, in Dowlatabad, on the right bank of the Godavery; 32 miles E. of Kondur.

SANGAMA, a river of Africa, which traverſes the kingdom of Awerri, and runs into the Atlantic, near cape Formoſa.

SANGAMARTA, in *Ancient Geography*, a town of India, on this ſide of the Ganges. Ptolemy.

SANGAMUNDAM, in *Geography*, a town of Hindooſtan, in the Travancore country; 30 miles W. of Travancore.

SANGANEER, a town of Hindooſtan, in the circar of Rantampour; 33 miles W. of Rantampour.

SANGARA, in *Ancient Geography*, a town of Aſia, in Meſopotamia, which belonged to Choſroes, king of the Parthians, and was taken by Trajan, the Roman emperor.

SANGARIANS, in *Geography*, a piratical tribe of Hindooſtan, inhabiting a diſtrict on the ſouth coaſt of the gulf of Cutch, who cruize for merchant ſhips as far to the weſt as the entrance of the gulf of Perſia. The capital of this ſtate is Noanagur; and Bate (or Bait), and Aramroy, are its principal ports. Nearchus names certain parts of the country between the mouth of the Indus and the river Arabius, "Sangada" and "Saranga;" but this tract was too confined to be the abode of a nation. M. D'Anville ſuppoſes that the country of Sangada was the ſame with the modern Sangara; if this be the caſe, ſays major Rennell, the Sangarians muſt firſt have removed from the weſtern to the eaſtern ſide of the Indus; and they muſt alſo have croſſed the gulf of Cutch.

SANGARIUS, or SANGARIS, in *Ancient Geography*, a river of Aſia Minor, which proceeded from mount Didymus towards Peſſinante, in the borough of Sangarus. The Euxine commences to form a ſmall gulf at the mouth of this river, the town of Heraclea being its other boundary. This river was famous in antiquity. It is mentioned by Livy and Strabo. According to Plutarch, it had borne the name of Xerabates. Venus had a temple or chapel on the banks of this river, with a ſtatue of the goddeſs.

SANGARTE′, in *Geography*, a river of Chineſe Tartary, which runs into the Saghalien, 70 miles N.E. of Oualin.

SANGAS, or *St. Duſk's Creek*, a ſmall ſtream in Upper

Canada, that diſcharges itſelf into lake Erie, E. of Sangas point, and affords a harbour for boats.

SANGAS, or *St. Duſk's Point*, is the moſt projecting point between the mouth of the Ouſe and the North Foreland, on the N. ſhore of lake Erie, E. of the river Waveney.

SANGAY, a river of Africa, which runs into the channel of Moſambique, S. lat. 13° 22'.—Alſo, a mountain of South America. See SANGUAY.

SANGAYA, a town of Africa, in the kingdom of Baol.

SANGBOY, a ſmall iſland in the Eaſt Indian ſea, near the S.W. coaſt of Mindanao. N. lat. 6° 52'. E. long. 121° 40'.

SANGEEASATOWN, a town of Hindooſtan, in Bahar; 5 miles E.S.E. of Durbungah.

SANGERFIELD, a poſt-town of New York, in Chenangoco; 120 miles N.W. of New York.

SANGERSHAUSEN, a town of Saxony, in Thuringia, near the Hartz Foreſt, and containing 700 houſes; 44 miles W. of Leipſic. N. lat. 51° 20'. E. long. 41° 25'.

SANGHIN, a town of France, in the department of the North; 5 miles S.E. of Lille.

SANGIA, a town of Arabia, in the province of Hedsjas; 25 miles S.E. of Niab.

SANGIR, an iſland in the Eaſt Indian ſea, about 24 miles long and 8 broad. N. lat. 3° 36'. E. long. 125° 21'.

SANGIS, a town of Sweden, in Weſt Bothnia; 15 miles W. of Tornea.

SANGOOL, a town of Hindooſtan, in the circar of Chanderee; 18 miles S. of Seronge.

SANGORE, a town of Lower Siam, on the ſide of a large river which runs into the gulf of Siam. N. lat. 7° 38'. E. long. 101° 9'.

SANGORI, or SANCORI, an iſland in the gulf of Siam, about 20 miles in circumference. N. lat. 10° 16'. E. long. 99° 54'.

SANGRO, a river of Naples, which riſes in the Apennines, on the confines of Lavora, and runs into the Adriatic, 6 miles from Lanciano, in Abruzzo Citra. N. lat. 42° 18'. E. long. 14° 37'.

SANGUAY, or SANGAY, a mountain of South America, in the eaſtern chain of the Andes, in the juriſdiction of Macas, and the audience of Quito. Its height is very great, and almoſt its whole ſurface is covered with ſnow. From its ſummit iſſues a continual fire, attended with exploſions which are ſometimes heard at Quito, though diſtant from it 135 miles. The adjacent country is rendered totally barren by the ſtones and cinders that are ejected from it. According to Bouguer, the height of the freezing point is 2440 toiſes above the level of the ſea, and it would end at the height of 4300 toiſes, not from the ceſſation of cold, which on the contrary increaſes with the diſtance from the earth, but becauſe no clouds nor vapours can aſcend to a greater height.

SANGUELOUK, or SANQUELOUK, a town of Siam. N. lat. 18° 30'. E. long. 99°.

SANGUESA, a town of Spain, in Navarre, on the river Aragon, anciently called "Ituriſſa," or "Suctacium." *Xavier*, (which ſee,) is three miles from it. It is diſtant 77 miles S.S.W. from Pamplona. N. lat. 42° 29'. W. long. 1° 25'.

SANGUICIJA, a river of Aſia, which paſſes through the city of Erivan.

SANGUIFICATION, in *Phyſiology*, the converſion into blood of the materials which ſupply the loſſes experienced by that fluid in nutrition, growth, ſecretion, and the other vital proceſſes to which it is ſubſervient. The compoſition of animal bodies is conſtantly changing; their particles are ſubject to an inceſſant motion of compoſition and decompoſition. The old materials are removed from them by the abſorbents, and new matter is ſupplied from the blood by the capillary veſſels. (See NUTRITION.) Various ſecretions and exhalations occurring conſtantly in many parts of the body, require a correſponding ſupply of new matter. (See GLAND.) The ſource of the ſupplies required for the purpoſes juſt ſpecified is the food, which is converted by the action of the ſtomach, and ſmall inteſtines, into chyle. (See DIGESTION.) This chyle, inſtead of being immediately applied to the nouriſhment of parts, &c. is conveyed into the blood; which, therefore, is a common receptacle, receiving all the new matter, and furniſhing all that is neceſſary for growth, nutrition, ſecretion, &c. The food of animals then undergoes a threefold change, being converted firſt into chyle, then into blood, and laſtly into the various conſtituents of our frame. It is the ſecond of theſe changes which conſtitutes *ſanguification;* by virtue of which the blood, receiving on one ſide, and giving out on the other, remains always the ſame; that is, the ſame in external appearance and obvious properties; animal chemiſtry not being yet ſufficiently advanced to detect the differences, which different kinds of food, and different ſtates of the ſyſtem, in all probability produce in this fluid.

What then is the nature of the proceſs by which the white milky fluid, the chyle, and the tranſparent lymphs of the abſorbing veſſels, (ſee ABSORBENTS and ABSORPTION,) are converted into blood? What are the agents of this change? Does it occur in the large or ſmall veſſels? Is it produced by reſpiration, by the addition of any thing from the air, or the ſeparation of any thing from the blood? We do not know. The proceſs of ſanguification is ſtill a myſtery, of which no part has hitherto been unveiled.

SANGUIN, or ZANWJN, in *Geography*, a village or town of Africa, on the Grain Coaſt, ſituated at the mouth of a river of the ſame name, where the Engliſh had formerly a factory, now abandoned. N. lat. 5° 22'. W. long. 9° 5'.

SANGUINAIRES, a ſmall iſland on the W. coaſt of the iſland of Corſica; 11 miles W. of Ajazzo. N. lat. 41° 45'. E. long. 8° 45'.

SANGUINARIA, in *Botany*, a name naturally ſuggeſted by the blood-coloured juice of the plant, and ſo called by M. Morin, the friend of Tournefort; although, according to Ambroſinus, it has been uſed ſynonimouſly with *Sanguinalis*, for herbs that have been found uſeful in ſtopping hemorrhages.—Dill. Elth. v. 2. 334. t. 252. Linn. Gen. 261. Schreb. 349. Willd. Sp. Pl. v. 2. 1140. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 3. 286. Michaux Boreal-Amer. v. 1. 309. Purſh v. 2. 366. Juſſ. 236. Lamarck Illuſtr. t. 449.—Claſs and order, *Polyandria Monogynia*. Nat. Ord. *Rhoeadeæ*, Linn. *Papaveraceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of two ovate, concave leaves, ſhorter than the corolla, deciduous. *Cor.* Petals eight, oblong, obtuſe, widely ſpreading; the alternate ones interior, narrower. *Stam.* Filaments numerous, ſimple, ſhorter than the corolla; anthers ſimple. *Piſt.* Germen ſuperior, oblong, compreſſed; ſtyle none; ſtigma thickiſh, two-furrowed, the height of the ſtamens, permanent. *Peric.* Pod oblong, ventricoſe, ſharp at each end, of one cell and two valves. *Seeds* numerous, round, pointed.

Eſſ. Ch. Petals eight. Calyx of two leaves. Pod ovate, of one cell.

1. S. *canadenſis*. Canadian Bloodwort Puccoon. Linn. Sp. Pl. 723. Curt. Mag. t. 162. (S. major et minor; Dill. Elth. v. 2. t. 252.)—Found abundantly in the woods of Canada and other parts of North America. It flowers with us in March and April. *Root* perennial, tuberous,

fleſhy, like that of Tormentil, fibrous, of a reddiſh ſaffron colour. *Stems* upright, ſmooth, paliſh green or browniſh, tinged with purple. *Leaves* radical, ſolitary, enveloping the flower-bud after the manner of *Oſmunda Lunaria;* when expanded they are lobed like fig-leaves and beautifully veined. *Flowers* ſolitary, terminal, ſnow-white, fully expanding only in fine clear weather. *Pod* yellow; when dry of a purpliſh glaucous hue. *Seeds* yellowiſh, poliſhed like thoſe of Millet.

Curtis obſerves of this plant that, although not ſhowy, "it has few equals in point of delicacy and ſingularity." The root, leaves, and ſtalks, when cut, emit an acrid juice of a bright red or orange colour, with which the native Americans are ſaid to paint themſelves.

Purſh, in his Flora of North America, mentions a variety with linear petals, which he calls *ſtenopetala.*

Sanguinaria, in *Gardening*, contains a plant of the low, herbaceous, flowering kind, of which the ſpecies cultivated is the Canadian ſanguinaria, bloodwort, or puccoon (S. canadenſis).

In it there are varieties with ſingle flowers, with ſemi-double flowers, and full flowers.

Method of Culture.—This plant is readily increaſed by parting the roots, and planting them out in the borders or other places where they are to remain, in the autumnal ſeaſon, when the leaves and ſtems decay. They ſhould have a looſe ſoil, with a mixture of bog-earth and rotten leaves, and ſheltered ſituation, not too much expoſed to the ſun; the roots ſhould not be parted oftener than every two years.

They afford variety in the borders, clumps, and other parts, among other low-growing bulbous-rooted plants.

SANGUINE, in *Geography*, a town of Italy, in the department of the Benaco; 15 miles E. of Mantua.

Sanguine, *Bloody*, or a thing abounding in blood.

Sanguine *Temperament*, or *Conſtitution*, is that where blood and heat predominate.

Sanguine conſtitutions require a frequent uſe of phlebotomy.

Sanguine people are uſually obſerved to be briſk, bold, daring, and even preſumptuous. Hence ſanguine hopes, *i. e.* ſtrong, aſſured, &c. hopes.

Sanguine, in *Heraldry*, the colour uſually called *murrey;* being made of red lake, tinged with a little Spaniſh brown. It is repreſented in engraving by tranſverſe hatches like purpure; and is moſtly uſed in the coats of knights of the Bath.

When borne by nobles, it is rather called ſardonyx; and in the coats of ſovereign princes, dragon's tail.

Sanguine *Stone*, *lapis ſanguinalis*, a kind of jaſper, brought from New Spain, of a dark-brown colour, marked with ſpots of a blood red.

It ſeems to be only an accidental heliotrope, differing from the common heliotropes that are brought from the Eaſt Indies, merely in being coarſer, and leſs tranſparent.

The Indians cut it in form of a heart, and uſe it in hæmorrhages, immoderate menſes, and other fluxes of blood. The patient applies it by graſping it in his right hand, having firſt dipt it in water. It is ſometimes alſo hung on the part whence the blood flows.

SANGUINEA, a name given by ſome of the chemiſts to nitre.

SANGUINEOUS Fever, a term formerly uſed by ſome medical writers to expreſs a kind of fever, in which there is always a plethora, or fulneſs of blood, which nature is attempting to leſſen by means of this accelerated motion of it, either by forming ſome hæmorrhage, or by throwing a part of it off, in form of ſweat. It is very obvious to reaſon, therefore, that bleeding is the firſt thing neceſſary in theſe fevers. The continent fevers, ſuch as the ephemera and ſynocha, are of this kind. Junker's Conſ. Med. p. 252. See Fever.

SANGUINERA, in *Geography*, a ſmall iſland in the Grecian Archipelago, near the coaſt of Natolia. N. lat. 36° 51′. E. long. 27° 10′.

SANGUINEROLA, in *Ichthyology*, a name given by the Italians to the phoxinus, or minow. Artedi makes this a ſpecies of cyprinus.

It has the Italian name from the blood-red colour which diſplays itſelf under its belly.

SANGUINETO, in *Geography*, a town of Italy, in the Veroneſe; 19 miles S.S.E. of Verona.

SANGUINEUS, in *Botany*, a name given by ſome of the ancients to the birch-tree, from the deep reddiſh-black colour of its twigs. Pliny calls it *ſanguineus frutex*, and not underſtanding that it was the ſame with the birch, mentions the name of that tree immediately after it, as if different from it. The Italians ſtill call the birch *ſanguino;* and ſome authors, from the redneſs of the twigs of ſome ſpecies of the alaternus, have called that ſhrub the *ſanguineus albus.* Some have ſuppoſed that this name was uſed to expreſs the birch-tree alſo, but erroneouſly; for though the bark of the body of that tree is ſometimes white, there was no reaſon for adding that epithet to the word *ſanguineus*, which not being uſed for any other tree, could need no diſtinction. The Romans, and many other nations, uſed this tree as we do, for the puniſhment of children's faults; and it is poſſible that the name *ſanguineus* might be given it on this occaſion. Pliny, lib. xvi. cap. 26.

SANGUIN-TAL-GUIN, in *Geography*, a lake of Chineſe Tartary, of an oval form, 30 miles long, and 12 broad. N. lat. 49° 8′. E. long. 98° 36′.

SANGUIPURGIUM, a name given by ſome authors to a ſlight ſpecies of fever, which was judged ſalutary, and only ſerving to purge and cleanſe the blood.

SANGUIS, in *Medicine*, &c. See Blood.

Sanguis, in our *Ancient Cuſtoms*, denotes a right or power, which the chief lord of the fee anciently had to judge and determine caſes where blood was ſhed. "De murderia et raptu, de igne, de ſanguine, &c." Monaſt.

Sanguis *Draconis Herba*, in *Botany*, a name by which ſome authors call the *lapathum ſanguineum*, or bloody dock.

Sanguinem *Emere*, was an obligation which the inhabitants of ſome manors, as that of Grendon, were under, to buy and redeem their villain-blood, or tenure, and make themſelves free men.

Sanguis *Caprinus*, or *Hircinus*, the blood of the he-goat, either wild or tame. This uſed to be prepared, with great precaution, to be uſed in medicine, and was ſuppoſed by many to have very extraordinary qualities.

Among other ſpecific virtues attributed to goat's blood, the two moſt conſiderable are, that, as they ſay, it cures the pleuriſy without bleeding, and that it diſſolves the ſtone in the bladder, by taking it in vehicles proper for thoſe diſeaſes. To be good, it is to be very hard, and difficult to pulverize.

Sanguis *Draconis*, in *Pharmacy*. See Dragon's *Blood.* Beſides the calamus Rotang, and different ſpecies of the pterocarpus, noticed under the article to which we have referred, many of the Indian redwoods, while growing, pour forth, through the fiſſures of the bark, a blood-coloured juice, that forms a reſinous concretion, to which the name of dragon's blood has been affixed: ſuch are ſome of the crotons, and other trees mentioned by Cranz. A ſimilar exudation, produced from a tree at Botany Bay, was diſcovered by ſir Joſeph Banks and Dr. Solander. But the ſubſtance now known in New South Wales by the name of red gum is perfectly ſoluble in water: the yellow gum of this place is, however, in its chemical and medical qualities, not very different from ſanguis draconis, and has been ſucceſsfully employed as an aſtringent by Dr. Blane. Woodville.

SANGUISORBA, in *Botany*, probably ſo named originally from the blood-red colour of its flowers, although the juices of this plant being aſtringent, the medicinal properties it poſſeſſes of ſtopping hæmorrhages, may be a better warrant for the name.—Linn. Gen. 58. Schreb. 78. Willd. Sp. Pl. v. 1. 653. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 186. Prodr. Fl. Græc. Sibth. 103. Ait. Hort. Kew. v. 1. 257. Juſſ. 336. Michaux Boreal-Amer. v. 1. 100. Purſh N. Amer. v. 1. 96. Lamarck Dict. v. 6. 496. Illuſtr. t. 85.—Claſs and order, *Tetrandria Monogynia.* Nat. Ord. *Senticoſæ?* Linn. *Roſaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, cloven into four, ſhort, ovate ſegments. *Cor.* of one petal, deeply divided into four, ovate, acute, equal ſegments. *Stam.* Filaments four, the length of the corolla; anthers roundiſh. *Piſt.* Germen placed between the calyx and corolla, ſquare; ſtyle thread-ſhaped, ſhort; ſtigma obtuſe, four-cleft. *Peric.* Capſule ſmall, two-celled. *Seeds* ſolitary, elliptical, ſmall.

Eſſ. Ch. Calyx four-cleft. Germen between the calyx and corolla. Seed ſolitary.

1. S. *officinalis.* Great Burnet. Linn. Sp. Pl. 169. Engl. Bot. t. 1312. Mart. Ruſt. t. 142. Fl. Dan. t. 97. —Spikes ovate.—Found on meadows in many parts of Europe. Not unfrequent in moiſt and rich paſtures in the north of Britain, flowering in June and July. *Root* perennial, ſtrong. *Stem* two feet high, erect, furrowed, rather naked, panicled above. *Leaves* on long ſtalks, unequally pinnated; leaflets heart-ſhaped, ſharply notched, ſmooth, veiny, the larger ones having a pair of little toothed appendages at the baſe of the partial ſtalks. *Stipulas* creſcent-ſhaped, toothed, claſping the ſtem. *Flowers* of a dark dull purple, or mulberry colour, in denſe, ovate, obtuſe, terminal, long-ſtalked heads or ſpikes; the uppermoſt flowers expand firſt. The ſegments of the *corolla* are hairy at their baſe, which appear to crown the *germen*; and hence is derived the very unuſual character of the genus, as above deſcribed. The whole plant is aſtringent. The leaves are an ingredient in cool tankards and ſalads. It is coarſe, and not acceptable to cattle.

Two varieties of this ſpecies are mentioned by authors, one called Italian, the other Spaniſh, Burnet. The former of theſe is three feet high, and bears a more cylindrical ſpike of brown, ſmaller flowers. The latter is not ſo tall, its ſpikes more globular, and of a reddiſh colour.

2. S. *media.* Short-ſpiked Great Burnet. Linn. Sp. Pl. 169. Willd. n. 2. ("Pimpinella ſpica breviori ſeu glomerata; Zanon. Hiſt. 181. t. 138.")—Spikes cylindrical.—Native of Canada; flowering from July to September. Very cloſely allied in habit and appearance to the laſt ſpecies, but differs in having cylindrical, not ovate, ſpikes of reddiſh *flowers*, and longer ſtamens. *Calyx* fringed at the edge. The *leaves*, according to Moriſon, are larger, longer, and more ſerrated.

3. S. *canadenſis.* Canadian Great Burnet. Linn. Sp. Pl. 169. Willd. n. 3. ("Pimpinella maxima canadenſis; Corn. Canad. 175. t. 174.")—Spikes very long.—Native of Siberia, Canada, and various parts of North America, flowering from June to September. *Stems* about a yard high, divided at the top into numerous *branches*, which ſtand erect. *Leaves* unequally pinnate; leaflets about four or five pairs, ſtiff, the lower ones alternate, the upper oppoſite, light green, deeply ſerrated. *Flowers* in long ſpikes, of an herbaceous white colour, each upon a ſhort ſtalk. Subject to vary with red flowers in thicker ſpikes, with broader leaflets, whitiſh underneath.

SANGUISUGA, in *Zoology*, a name by which ſome authors expreſs the *hirudo*, or *leech*. See each article.

SANGUISUGUM, a name given by ſome barbarous authors to a diſorder of the heart, ſuppoſed to ariſe from its retaining an abundant quantity of blood.

SANGURRY, in *Geography*, a town of Hindooſtan, in Bednore; 25 miles N.N.E. of Simogu.

SANGUY, a ſmall iſland in the vicinity of Celebes, in which is a ſmall Dutch garriſon, as an advanced guard to protect the Spice iſlands.

SAN-HAN, a town of Arabia, in the province of Yemen; 4 miles S. of Sana.

SANHEDRIM, SANHEDRIN, or *Synedrium*, among the ancient Jews, the ſupreme council, or court of judicature, of that republic; in which were diſpatched all the great affairs, both of religion and policy.

The word is derived from the Greek, συνεδριον, *a council, aſſembly*, or company of people ſitting together; from συν, *con, together*, and εδρα, *ſeat.*

Many of the learned agree, that it was inſtituted by Moſes, Numbers, chap. xi. and conſiſted at firſt of ſeventy elders, who judged finally of all cauſes and affairs; and that they ſubſiſted, without intermiſſion, from Moſes to Ezra. (See Deut. xxvii. 1. xxxi. 9. Joſh. xxiv. 1. 31. Judges, ii. 7. 2 Chron. xix. 8. Ezek. viii. 11.) Others will have it, that the council of ſeventy elders, eſtabliſhed by Moſes, Numb. chap. xi. was temporary, and did not hold after his death; adding, that we find no ſign of any ſuch perpetual and infallible tribunal throughout the whole Old Teſtament; and that the ſanhedrim was firſt ſet up in the time when the Maccabees, or Aſmoneans, took upon themſelves the adminiſtration of the government under the title of high-prieſts, and afterwards of kings, that is, ever ſince the perſecution of Antiochus.

The Jews, however, contend ſtrenuouſly for the antiquity of their great ſanhedrim: M. Simon ſtrengthens and defends their proofs, and M. le Clerc attacks them.

Whatever may be the origin and eſtabliſhment of the ſanhedrim, it is certain it was ſubſiſting in the time of our Saviour, ſince it is ſpoken of in the goſpels, Matth. v. 21. Mark, xiii. 9. xiv. 55. xv. 1. and Acts of the Apoſtles; and ſince Jeſus Chriſt himſelf was arraigned and condemned by it: that it was held at Jeruſalem; and that the deciſion of all the moſt important affairs among the Jews belonged to it. The preſident of this aſſembly was called *Naſi*, or prince; his deputy was called *Ab-beth-din*, father of the houſe of judgment; and the ſub-deputy was called *Chacan*, the wiſe: the reſt were denominated *tzekanim*, elders or ſenators. The room in which they ſat was a rotunda, half of which was built without the temple, and half within; *i. e.* one ſemicircle of the room was within the compaſs of the temple; and as it was never allowed to ſit down in the temple, they tell us this part was for thoſe who ſtood up; the other half, or ſemicircle, extended without the holy place, and here the judges ſat. The naſi, or prince, ſat on a throne at the end of the hall, having his deputy at his right hand, and his ſub-deputy at his left; the other ſenators were ranged in order on each ſide.

The ſanhedrim ſubſiſted until the deſtruction of Jeruſalem, but its authority was almoſt reduced to nothing, from the time in which the Jewiſh nation became ſubject to the Roman empire.

The rabbins pretend, that the ſanhedrim has always ſubſiſted in their nation, from the time of Moſes to the deſtruction of the temple by the Romans : and they maintain that it conſiſted of ſeventy counſellors, ſix out of each tribe, and Moſes as preſident ; and thus the number was ſeventy-one : but ſix ſenators out of each tribe make the number ſeventy-two, which, with the preſident, conſtitute a council of ſeventy-three perſons, and therefore it has been the opinion of ſome authors that this was the number of the members of the ſanhedrim.

As to the perſonal qualifications of the judges of this court, it was required that they ſhould be of untainted birth, and they were often of the race of the prieſts or Levites, or of the number of inferior judges, or of the leſſer ſanhedrim, which conſiſted of twenty-three judges. They were to be ſkilful in the written and traditional law ; and they were obliged to ſtudy magic, divination, fortune-telling, phyſic, aſtrology, arithmetic, and languages. It was alſo required, that none of them ſhould be eunuchs, uſurers, decrepid or deformed, or gameſters : and that they ſhould be of mature age, rich, and of good countenance and body. Thus ſay the rabbins.

The authority of the ſanhedrim was very extenſive. This council decided cauſes brought before it by appeal from inferior courts. The king, high-prieſt, and prophets were ſubject to its juriſdiction. The general officers of the nation were brought before the ſanhedrim. How far their right of judging in capital caſes extended, and how long it continued, have been ſubjects of controverſy. Among the rabbins it has been a generally received opinion, that about forty years before the deſtruction of Jeruſalem, their nation had been deprived of the power of life and death. And moſt authors aſſert, that this privilege was taken from them ever ſince Judea was made a province of the Roman empire, that is, after the baniſhment of Archelaus. Others, however, maintain that the Jews had ſtill the power of life and death ; but that this privilege was reſtricted to crimes committed againſt their law, and depended upon the governor's will and pleaſure. See this queſtion diſcuſſed under the article Jews.

In the time of Moſes, this council was held at the door of the tabernacle of the teſtimony. As ſoon as the people were in poſſeſſion of the land of promiſe, the ſanhedrim followed the tabernacle, and it continued at Jeruſalem, whither it was removed, till the captivity. During the captivity it was kept at Babylon. After the return from Babylon, it remained at Jeruſalem, as it is ſaid, to the time of the Sicarii, or Aſſaſſins ; afterwards it was removed to Jamnia, thence to Jericho, to Uzzah, to Sepharvaim, to Bethſamia, to Sephoris, and laſt of all to Tiberias, where it continued till their utter extinction. Such is the account which the Jews give of their ſanhedrim. But many learned perſons are of a different opinion. Petau (De Doctrin. Temp. lib. ii. c. 26.) fixes the beginning of the ſanhedrim to the period when Gabinius was governor of Judea, by whom were erected tribunals in the five cities of Judea, *viz.* Jeruſalem, Gadara, Amathus, Jericho, and Sephoris. Grotius agrees in the date of its commencement with the rabbins, but he fixes its termination at the beginning of Herod's reign. Baſnage places it under Judas Maccabæus and his brother Jonathan. Upon the whole, it may be obſerved, that the origin of the ſanhedrim has not been ſatisfactorily aſcertained ; and that the council of the ſeventy elders, eſtabliſhed by Moſes, was not what the Hebrews underſtood by the name of ſanhedrim. It has been alſo alleged, that this eſtabliſhment cannot be perceived under Joſhua, the Judges, or the Kings, nor after the captivity, till the time of Jonathan Maccabæus : to which purpoſe it has been ſuggeſted, that the tribunals erected by Gabinius were very different from the ſanhedrim. It was in being, however, as we have already mentioned, in and after the time of our Saviour ; but the Jews themſelves inform us, that it had not then the power of life and death. John, xviii. 31.

Before the death of our Saviour, two very famous rabbins had been preſidents of the ſanhedrim, *viz.* Hillel and Schammai, who entertained very different opinions on ſeveral ſubjects, and particularly upon that of divorce. This gave occaſion to the queſtion which the Phariſees put to Jeſus Chriſt upon that head. (Matt. xix. 3.) Before Schammai, Hillel had Menahem for his aſſociate in the preſidency of the ſanhedrim. But the latter afterwards deſerted that honourable poſt, and joined himſelf, with a great number of his diſciples, to the party of Herod Antipas, who promoted the levying of taxes for the uſe of the Roman emperors with all his might. Theſe were probably the Herodians mentioned in the Goſpel, Matt. xxii. 16. (See Herodians.) To Hillel ſucceeded Simeon his ſon, who is ſuppoſed to have been the perſon who took Jeſus Chriſt in his arms (Luke, ii. 28.) and publicly acknowledged him to be the Meſſiah. If this be the caſe, the Jewiſh ſanhedrim had for preſident a perſon, that was entirely diſpoſed to embrace Chriſtianity. Gamaliel, the ſon and ſucceſſor of Simeon, ſeems to have been alſo of the ſame diſpoſition and character.

There were ſeveral inferior ſanhedrims in Paleſtine, all depending on the great ſanhedrim at Jeruſalem. The inferior ſanhedrim conſiſted each of 23 perſons ; and there was one in each city and town. Some ſay, that to have a right to hold a ſanhedrim, it was requiſite there were one hundred and twenty inhabitants in the place. Where the inhabitants came ſhort of the number of one hundred and twenty, they only eſtabliſhed three judges.

In the great as well as the inferior ſanhedrim were two ſcribes ; the one to write down the ſuffrages of thoſe who were for condemnation ; the other to take down the ſuffrages of thoſe who were for abſolution.

Selden has a learned work on the ſubject of the Jewiſh ſanhedrim, "de Synedriis," printed at London in 1635, in three volumes, quarto.

SAN-HO, in *Geography*, a town of China, of the third rank, in Pe-tche-li ; 32 miles E. of Peking.

SANI, in *Mythology*, the Hindoo regent, or the perſonification of the planet Saturn. He is repreſented in the Indian zodiac of a blue colour, mounted on a raven ; ſometimes on an elephant, in a yellow dreſs, and holding a bow and arrow. Sometimes he has four arms, at others only two. He is the fabled offspring of Surya, or the ſun, as related in the article Prabha ; and, as in our arrangement, Saturday is the day of the week over which he aſtrologically preſides. See Zodiac.

Explanatory of the mythological character and attributes of Sani, and comprifing ſome other points, we give the following extract from the Hindoo Pantheon of major Moore.

"Sani is deſcribed in ſome paſſages of the Puranas, as 'clad in a black mantle, with a dark turban looſely wrapped round his head ; his aſpect hideous, and his brows knit with anger ; a trident in one of his four hands, a ſcimitar in a ſecond, and in the other two a bow and ſhafts.' The elephant has been thought an appropriate vehicle for the ſluggiſh 'ſlow-moving ſon of Surya,' as referring to the immenſe ſcope of Saturn's orbit, and the apparent ſlowneſs of his motion. And Sani being, among the aſtrologers of India, as well as with their ſapient brethren in Europe, a planet of malignant aſpects, the ill-omened raven may alſo be deemed a fit *vahan*, or vehicle, for ſuch a dreaded being. But this is not, I think, a ſufficient reaſon for the introduction of the raven into the mythological machinery of the Hindoo ſyſtem, ſo accurate, ſo connected, and ſo complete in all its parts; although the inveſtigations that it hath hitherto undergone have not fully developed or reached ſuch points of perfection. Now let me aſk the reaſon, why, both in England and in India, the raven is ſo rare a bird? It breeds every year like the crow, and is much longer lived: and while the latter bird abounds every where to a degree bordering on nuiſance, a pair of ravens, for they are ſeldom ſeen ſingle or in trios, are not found duplicated in any place. Perhaps take England or India over, two pair of ravens will not be found on an average extent of 500 or 1000 acres. I know not, for I write where I have no acceſs to books, if our naturaliſts have ſought the theory of this; or whether it may have firſt occurred to me, which it did while contemplating the character and attributes of Sani, that the raven deſtroys its own young. If this notion be well founded, and on no other can I account for the rareneſs of the annual-breeding long-lived raven, we ſhall at once ſee the propriety of ſymbolizing it with Saturn, or Kronos, or Time, devouring or deſtroying his own offspring."

The following aſtrological allegory, connected with Sani, exhibits a ſpecimen of the mythological veil, through which even ſcientific facts muſt be viewed in the relations of Hindoo writers.

In the reign of Daſaratha, the mortal father of Ramachandra, in whoſe perſon Viſhnu became incarnate, it happened that Sani, in his celeſtial journey, threatened a moſt inauſpicious conjunction; and it was foretold to the king, by the ſage Vaſiſhtha, that unleſs he attacked the regent of the planet, neither Indra, nor Brahma himſelf, could divert the continuance of a diſtreſſing drought, conſequent to ſuch aſpects, for twelve years. Daſaratha attacked, and after a violent conflict ſubdued, Sani, extorting from him a promiſe, that he would not again, by a ſimilar tranſit or paſſage (entering the Hyades, the Rohini of the Hindoos, from the Nakſhatra or lunar manſion Kritika, their Pleiades; this paſſage of Sani being called Sakatabeda, or the ſection of the wain), threaten ſo unhappy a conjunction: a promiſe that he would keep till about our year 1796, which the Hindoo aſtrologers have long predicted would be peculiarly inauſpicious, as the noxious planet would then approach the wain of Rohini. And in this age we cannot, they ſay, look for a hero like Daſaratha, in a miraculous car of pure gold, to place himſelf at the entrance of the wain, blazing like his progenitor the ſun, and drawing his bow, armed with the tremendous arrow Sanharaſtra, which attracts all things with irreſiſtible violence; even Sani, "the ſlow-moving ſon of Surya, dreſſed in a blue robe, crowned with a diadem, having four arms, holding a bow, a ſpiked weapon, and a ſcimitar." Thus, according to Mr. Wilford, Aſiat. Ref. vol. iii. he is deſcribed in the Brahmanda Purana. The aſtrologers add, that Mangala, or Mars, the child of Prithvi, has alſo been prevented from traverſing the wain of Rohini; but that Vrihaſpati, Sukra, and Budha, or Jupiter, Venus, and Mercury, paſs it freely and innocently; while it is the conſtant path of Soma, of whom the beautiful Rohini (the α Aldebaran of our maps) is the favourite conſort.

This aſtronomical fable, in which may be diſcovered traces of ſcientific facts, is perhaps too looſely related in the Puranas to admit of any uſeful calculus being grounded on it; otherwiſe, as it refers to a particular poſition of certain celeſtial bodies in the reign of Daſaratha, that did not occur again till about the year 1796, the times of theſe coincidences might poſſibly lead us to nearly the era of Ramachandra; a very important point in reſpect both to the hiſtory and chronology of the Hindoos.

The planet Sani, or Saturn, is appropriated more eſpecially by Hindoo aſtrologers to Brahma, who is ſaid to direct its motions; as Viſhnu is feigned to ſhine in the ſun, and Siva in Vrihaſpati, or Jupiter. With the Egyptians, Saturn was an object of abhorrence and dread, they not daring to pronounce his true name, and abominating all animals with red hair, becauſe it was his colour; ſo in India red is the colour of Brahma, he being phyſically a perſonification of the earth or matter; and ſymbolized in the ſkies by the ſlow-moving heavy Sani, and below by the ſluggiſh gooſe, his vahan or vehicle. Some enthuſiaſtic individuals among the Hindoos will not eat carrots, which appear indigenous all over India, and have a diſtinct name in many languages, becauſe, as it is ſaid, they look red like beef: but poſſibly the objection may have a more remote origin. See SARASWATI.

The day of Saturn, or Sani, is of courſe very inauſpicious in India, where moſt people, Hindoo or Mahommedan, are very ſuperſtitious on the point of lucky and unlucky days. This feeling has been, and in ſome degree is ſtill felt in all parts of the world. It cannot be ſaid to be extinct in England. Not only would an Hindoo avoid marrying, commencing a journey or a building, naming a child, &c. on Saturday, but dates are altered to avoid naming the unlucky day, and records of events chronologically falſified with the like view.

Of the mythological and other perſonages and ſubjects mentioned above, as well as of Sani, the enquirer will find farther information under the following articles of this work: INDRA, KRITIKA, MANGALA, PAVAKA, PRITHU, PURANA, RAMA, ROHINI, SIVA, SOMA, SUKRA, SURYA, VAHAN, VASISHTA, VISHNU, VRIHASPATI, YAMA.

SANJALLI, or JOALLY, in *Geography*, a kingdom of Africa, in the country of Senegal, ſituated between the kingdom of Burſali and the Atlantic, and extending about 30 miles along the north ſide of the river Gambia.

SANICIUM, in *Ancient Geography*, the capital of the Sanagenſes, in Gallia Narbonnenſis, ſituated on the Maritime Alps. Ptolemy.

SANICLE, in *Botany*. See SANICULA.

Medical writers formerly agreed in celebrating this plant as one of the greateſt vulneraries we have of our own growth. They recommended it as a mild reſtringent, internally and externally, for healing freſh wounds and eroſions; and many proceeded ſo far as to talk of fiſtulas having been cured by injecting a decoction of it; but the modern practice of ſurgery has fallen upon very different methods of practice in theſe caſes, from their predeceſſors, and in conſequence of that, the whole tribe of vulnerary herbs is diſregarded.

SANICLE, *Baſtard American*. See MITELLA.

SANICLE, *Bear's Ear*. See CORTUSA.

SANICLE, *Water*. See GEUM.

SANICLE, *Yorkſhire*. See PINGUICULA.

SANICULA, derived from *ſano*, *to heal*, having been formerly celebrated for its ſuppoſed healing properties. —Linn. Gen. 128. Schreb. 178. Willd. Sp. Pl. v. 1. 1366. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 291. Prodr. Fl. Græc. Sibth. v. 1. 176. Ait. Hort. Kew. v. 2. 118. Michaux Boreal-Amer. v. 1. 162. Purſh v. 1. 127. Tournef. t. 173. Juſſ. 225. Lamarck Dict. v. 6.

v. 6. 499. Illuſtr. t. 191. Gærtn. t. 20.—Claſs and order, *Pentandria Digynia.* Nat. Ord. *Umbellatæ*, Linn. *Umbelliferæ*, Juſſ.

Gen. Ch. *General umbel* conſiſting generally of four rays: *partial* of many rays, crowded together, nearly capitate. *General involucrum* divided into two parts, placed outwardly; *partial* ſurrounding on all ſides, ſhorter than the flowers. *Perianth* ſcarcely diſcernible. *Cor. Univerſal* uniform; flowers of the diſk abortive; *partial* of five, compreſſed, inflexed, cloſed petals. *Stam.* Filaments five, ſimple, erect, twice as long as the florets; anthers roundiſh. *Piſt.* Germen inferior, hiſpid; ſtyles two, awl-ſhaped, reflexed; ſtigmas acute. *Peric.* none. *Fruit* ovate, acute, rough, diviſible into two parts. *Seeds* two, convex and muricated on one ſide, flat on the other.

Eſſ. Ch. Umbels cluſtered in little heads. Fruit rough with hooked briſtles. Central flowers abortive.

1. S. *europæa.* Wood Sanicle. Linn. Sp. Pl. 339. Engl. Bot. t. 98. Fl. Dan. t. 293.—Radical leaves ſimple. Flowers all ſeſſile.—Native of rather mountainous woods in Europe; extremely common in Great Britain, where (according to Gerarde) "it joyeth in a fat and fruitfull moiſt ſoile," flowering in May.—*Root* perennial, with ſomewhat fleſhy fibres. *Stem* a foot and half high, erect, round, furrowed, almoſt naked, a little branched, ſmooth. *Leaves* ſtalked, ſmooth, deeply ſeven-lobed; lobes wedge-ſhaped, trifid, fringed, deep green above; paler beneath. *Flowers* ſeſſile, capitate, white or bluſh-coloured; the central ones male; the others either perfect, or female, whoſe petals are deciduous.

The virtues of this plant cauſed it to be "uſed in potions which are called Vulnerarie potions, or wound drinkes, which make whole and ſound all inward wounds and outward hurts;" but, as the author of Engliſh Botany remarks, "the experience of mankind, ſince good Gerarde wrote, has rather impaired the credit of ſuch ſovereign medicines." The herb is bitter and pungently aromatic, like many other umbelliferous plants.

2. S. *canadenſis.* Canadian Sanicle. Linn. Sp. Pl. 339. Willd. n. 2.—Radical leaves compound. Leaflets ovate.—Native of Canada and Virginia; found alſo by Thunberg at Japan.—It flowers in May and June. Very nearly allied to the laſt; differing only in being frequently ten times as large in all its parts, and having compound, not ſimple, *leaves.* Purſh reckons it a doubtful ſpecies.

3. S. *marilandica.* Maryland Sanicle. Linn. Sp. Pl. 339. Jacq. Ic. Rar. t. 348.—Male flowers on ſtalks; perfect ones ſeſſile.—Frequent in dry woods from Canada to Carolina. It flowers in June and July. Whole plant ſmooth. *Root* perennial, fibrous, whitiſh. *Stem* annual, erect, two feet high, branched alternately, trichotomous at the top. *Radical leaves* on long ſtalks, ternate; leaflets rhomboid, nearly ſeſſile; *ſtem-leaves* alternate, ſharper and ſmaller. *Umbel* ſtalked, ſimple, compoſed of a few, greeniſh-white *flowers.*

SANIDIUM, in *Natural Hiſtory*, the name of a genus of foſſils, of the claſs of the ſelenitæ, but neither of the rhomboidal nor columnar kinds, nor any other way diſtinguiſhable by its external figure, being made up of ſeveral plain flat plates.

The word is derived from the Greek σανιδιον, *tabella*, a flat thin plate or table, and expreſſes a body made up only of ſuch plates. And the ſelenitæ of this genus are of no determinate form, nor conſiſt of any regular number of planes or angles, but are merely flat, broad, and thin plates or tables, compoſed of other yet thinner plates, like the talcs, but diſtinguiſhed from thoſe bodies by this, that theſe plates are made up of arrangements of ſlender fibres, diſpoſed obliquely, but in uninterrupted lines acroſs the body.

The ſelenitæ having been always eſteemed (when meant of this claſs of bodies, for ſome have applied the word to certain ſpars and other ſubſtances) regularly figured foſſils, this genus has been overlooked by authors, and the ſpecimens of it which occurred, looked on as bodies of a different claſs, as ſpars or talcs. Their not fermenting with acids, however, determines them not to be ſpars; and their obliquely ſtriated ſtructure, their want of elaſticity, and their readily calcining in the fire, diſtinguiſh them from the talcs, and ſhew them to be true and genuine ſelenitæ.

Of this genus there are only two known ſpecies, the one colourleſs and pellucid, the other whitiſh and opaque. The firſt is found pretty frequently about Oxford, as alſo in Northamptonſhire, Yorkſhire, and other counties; the other is very common in all parts of Germany, and is found alſo in Leiceſterſhire, and ſome other parts of England, but with us it is not common. Hill's Hiſt. of Foſſils, p. 144, 145.

SANIES, in *Surgery.* The thin fetid diſcharge from ill-conditioned ulcers is ſo termed: good pus is both thicker and whiter, and has no unpleaſant ſmell. See Pus.

SANIR, in *Geography*, a town of Arabia, in the province of Hedsjas; 120 miles W. of Medina.

SANIS, Σανις, among the Greeks, a kind of puniſhment, inflicted by binding the malefactor faſt to a piece of wood.

SANITURNUS, in *Ancient Geography*, a river of Italy, which traverſed the city of Modena, according to Frontinus.

SANITZ, in *Geography*, a town of Ruſſia, in the government of Riga; 16 miles N.E. of Vala.

SANKAATY, a town of Aſſam, on the borders of Bengal; 65 miles E. of Rangamatty.

SANKAN, a town of Arabia, in Yemen, near the coaſt of the Red ſea; 35 miles N.N.W. of Abu-Ariſch. N. lat. 17° 14′.

SANKANAGA, the name of a ſerpent ſometimes mentioned in the mythological legends of the Hindoos; of the ſame family, perhaps, as another named *Sankaſura;* which ſee. Serpents are common in the fabulous machinery of India, of which ſee under Sesha. Of one named Sankanaga, the following legend is related. Agaſtya was a diminutive, but pious and learned, Brachman, who for his virtues was tranſlated to the ſkies, and now ſhines in the ſtar called by European aſtronomers Canopus, in the conſtellation Argo. This ſage is ſaid to have been ſo learned and pious, that he overcame thereby the ſerpent Sankanaga, whoſe breath was a fiery wind, that burned and deſtroyed all animals and vegetables in its neighbourhood. Agaſtya ſubdued the ſerpent, and carried it about in an earthen veſſel. It is ſurmiſed that ſome aſtronomical allegory is concealed in this legend; or that it may refer to ſome mitigation of the effects of the *ſamum*, or poiſonous wind of Egypt, where this ſage flouriſhed. For farther notice of him, ſee Aſiat. Reſ. vol. viii., and Maurice's Anc. Hiſt. Mention of Agaſtya is made in the article Tareka.

SANKAR, in *Geography*, a mountainous diſtrict of Thibet, ſituated between the 79th and 81ſt degrees of E. long., and about the 34th degree of N. lat. It affords mines of quickſilver, ſulphur, &c.

SANKARA, in *Mythology*, a name of the Hindoo deity Siva, or Mahadeva. (See theſe articles.) The name is moſtly applied to Siva in his character of Rudra, or Fate.

(See Rudra.) As related under that article, there are eleven Rudras ſometimes mentioned in the Hindoo books; but the reaſon of that particular number has not been explained. Sankara is called one of the Rudras. The word means benefactor, and is given occaſionally as a name to Hindoos of the preſent day, of the ſect of Saiva. (See Saiva.) One of this name and ſect is ſaid to have exerted himſelf ſo ſtrenuouſly in exterminating a hereſy of the Jainas, as to gain the reputation of being inſpired by the avenging Siva; and even to have been an incarnation of Rudra, or Fate. Mention is made of this in the article Jayadevi, where the mild tenet is given, which drew forth the vengeance of the furious bigot Sankara, otherwiſe called *Sankaracharya;* which ſee. In the article Jayadevi there are two errors of the preſs; and as this article is thence referred to, this opportunity is taken to correct them. For Kari, read Kaſi; and for Sina, read Siva. Of the hereſy of Jaina, mentioned above, ſee that article, and Sects *of Hindoos*.

SANKARACHARYA, in *Biography*, a very celebrated Sanſcrit author, whoſe excellent works on theology and philoſophy are much admired by many ſects of Hindoos, particularly thoſe of the ſect of Saiva, and the followers of the Vedanta theory, of which he is reckoned the reſtorer. (See theſe articles, and Sects *of Hindoos*.) He tarniſhed the brilliancy of his reputation by his intolerance and bigotry, which induced him to ſtir up and foment a furious perſecution againſt the heretical ſect of Jaina, and others. (See Jaina.) For this he was canonized by his own followers; though by others, eſpecially by the deſcendants of the objects of his holy vengeance, his name is held in deſerved abhorrence. His pious fury was ſo exceſſive, that his abettors judged it to be more than mortal, and that a portion of the avenging deity muſt have inſpired him; and it is accordingly fabled that he was a manifeſtation, or avatara, of the god Siva, one of whoſe names is Sankara; *acharya* being a ſurname denoting literary celebrity. (See Sankara.) A biographical account of this extraordinary man would afford a fine moral leſſon. His literary works would do honour to any name of any country, and his actions are indelibly diſgraceful. To the compunctious viſitings of his conſcience may perhaps be attributed the mode of his departure from this world, which was by the expiatory proceſs of a meritorious ſpecies of ſuicide, called karſhagni. This conſiſts in caſing the body with a thick covering of cow-dung, lubricated with cow's urine, which, when dry, ignites ſpeedily, and burns rapidly with a beautifully pure blue flame. This being ſet on fire, quickly conſumes, they ſay, both ſin and ſinner. (See Karshagni and Suicide.) His commentary on the Veda is held in great reſpect by the literati of the Eaſt. Its popular title is the *Baſhea*. He flouriſhed in the year 1000 of our era. See Veda and Vedanta.

SANKARI, or Songo, in *Geography*, a town of Africa, in the kingdom of Jallonkadoo, near the ſource of the Niger. N. lat. 11° 10′. W. long. 6° 20′.

SANKASURA, a conchological demon frequently mentioned in the fabulous legends of the Hindoos. The name means demon of the ſhell ſank, or ſhank, or chank; being, like our conch, a generic term for ſhell. (See Shank.) This demon was deſtroyed by Kriſhna, as related under the article Kasya; which ſee.

SANKAUY, in *Geography*, a town of Aſſam; 36 miles W. of Ghergonge.

SANKEIRA, a town of Hindooſtan, in Malwa; 10 miles W. of Ougein.

SANKERIDURGAM, a town of Hindooſtan, in Barramaul; 80 miles S.E. of Seringapatam.

SANKEY Canal. See Canal.

SANKIRA, in *Botany;* a name given by ſome authors to the plant, of which the China-root, uſed in medicine, is the root.

SANKO, in *Geography*, a town of Hindooſtan, in Bengal; 16 miles N.W. of Moorſhedabad.

SANKSA, a town of Thibet; 6 miles S. of Changlaſſe.

SANKYA, the name of one of the ſix principal ſchools, or theories, of philoſophy among the Hindoos. It is attributed to a philoſopher of the name of Kapila, who by ſome is ſaid to have upheld tenets leading to materialiſm. The Sankyas, however, profeſs to believe in the exiſtence of two eternal ſubſtances or beings: the one they call Paruſha, or male; the other Prakriti, or nature. (See our articles Parusha and Prakriti; where, however, we have conſidered them rather mythologically than in a philoſophical view.) So intimately blended as mythology is with every department of Hindoo literature, it is not eaſy to clear any ſubject of the obſcurity by which it is thereby involved. As far as this Sankya theory can be ſeen ſomewhat freed from perſonification, it ſeems to teach that Paruſha, or the male eſſence, exiſts in an eternal ſtate of reſt, impaſſible, and a mere ſpectator of the motions of the univerſe. This ſtate of their ſupreme they illuſtrate by the popular figure of a lotus, or water-lily; which, after the water paſſes over it, is left in its original condition. The Hindoos find in the lotus illuſtrations of almoſt every obſcurity. (See our articles Kamal and Lotos.) "The motions or phenomena of the material world," ſay the Sankyas, "and of all ſentient beings, proceed from Prakriti, or nature." In this tenet we recogniſe the theory of other ſchools; and it is applied by theologians in aggrandizement of the deities of their own ſect. A Saiva will apply the name of Paruſha to Siva, and of Prakriti to his Sakti, or active female energy, Parvati. In like manner will a Vaiſhnava apply them to Viſhnu and Lakſhmi; and other ſects to the objects of their excluſive adoration. See hereon under Sects *of Hindoos*, and under the foreign words in the preceding paragraph. The argument by which the Sankyas ſupport the tenet juſt aſcribed to them is not very clear. "Spirit is life; effect and cauſe are inſeparably united; conſequently a ceſſation of effect involves a ceſſation of the cauſe; therefore agency cannot be predicable of the Supreme Being. The idea that he acts ariſes from the union of life and underſtanding." Hindoo metaphyſicians profeſs to find no difficulty in fully comprehending ſuch arguments as theſe; and they endeavour to illuſtrate them by ſaying, that "life here denotes its ſimple abſtract nature, diveſted of the qualities of thought, feeling, action, &c. This ſimple abſtract life is the Supreme Being. Underſtanding (which denotes the active and ſenſitive principles of beings) ariſes from the operations of nature; and the union of underſtanding, or the active faculties, with life, which is the Supreme Being, produces the idea that he is the agent in the motions of the univerſe." In oppoſition to the Vedanti theory, affirming that underſtanding is the termination or completion of the one being, the Sankya aſſerts that it is the completion of nature. "Nature is eternal, but it is upheld by Life, the Supreme Being. When the univerſe diſappears, Nature remains in an inviſible ſeminal ſtate; but at the deſire of the Supreme Being, it aſſumes a viſible form, and becomes the creator of the world." If we put this ſentence into another ſhape,—the ſhape, indeed, in which it would appear in its original metaphyſical language, it will aſſume a mythological air, and admit of eaſy perſonification and application. Thus, "Prakriti is eternal, but it or ſhe is upheld by Paruſha. At a mahapralaya, Prakriti aſſumes an inviſible ſeminal ſtate; but by the volition of Paruſha, or Brahm, a Kalpa occurs, and Prakriti aſſumes a viſible form, and becomes Brahma the Creator." Mahapralaya denotes a periodical deſtruction, or change, of all things; Kalpa, a reorganization of matter; and matter is perſonified in Brahma. See KALPA, MAHAPRALAYA, and SIVA.

The ſoul, or ſenſitive part of living beings, proceeds, by the Sankya theory, from the organization of nature, but is formed of its more refined parts. This affords an opening for the charge of materialiſm. But, continue the Sankyas, in common with the Vedantas, by the efficacy of virtuous actions, men are cleared from the effects of Maya, paſſion, or deluſion, and united to the ſupreme ſpiritual eſſence. See MAYA.

A ſuccinct account of the different Hindoo philoſophical theories, ſeparated, as they actually are, from religious or mythological extravagance, is, we think, very deſirable. Such of our readers as have looked into this branch of Hindoo literature will acknowledge the difficulty, under our preſent knowledge of the ſubject, of giving any very ſatisfactory account of their real differences, or coincidences, with each other, or with other ſchools more familiar to us. We have, under various articles of this work, given ſhort notices on theſe points: for which, in addition to thoſe already referred to, the following may be conſulted: JAIMINI, KAPILA, MAYA, MIMANSA, NYAYA, PHILOSOPHY *of the Hindoos*, PATANJALI, VEDANTA, and others thence referred to.

SAN-LI-KIAO, in *Geography*, a town of Chineſe Tartary; 18 miles S.S.W. of Ning-yuen.

SANN, a river of Stiria, which riſes near Oberburg, and runs into the Koding, near Cilley.

SANN, a town of Egypt, on a canal which runs from the Nile to the lake Menzaleh; 70 miles N.E. of Cairo.

SANNA, a town of Sweden, in the province of Nericia; 12 miles W. of Orebro.

SANNABA, in *Ancient Geography*, a town of India, on this ſide of the Ganges. Ptolemy.

SANNAK, in *Geography*, a cluſter of iſlands in the North Pacific ocean, near the S. coaſt of Alaſhka. N. lat. 54° 50′. E. long. 196° 29′.

SANNAS, a mountain of Perſia, in the province of Lariſtan; 45 miles S.E. of Lar.

SANNAZARO, JACOPO, in *Biography*, an eminent Italian and Latin poet, was born at Naples in 1458. He received his claſſical education in the ſchool of Giuniano Maggio, and the academy of Pontano, and upon entering the latter, he changed his baptiſmal name into Actius Sincerus, which he always uſed in his Latin works. He was firſt inſpired as a poet by Carmoſina Bonifacia, a lady who became the theme of his verſe. Finding himſelf overwhelmed in this paſſion, he quitted his native country, and paſſed ſome time in France: being, however, unable to endure a very long abſence from the object of his attachment, he returned; before he could arrive, his Carmoſina had died in the bloom of her youth. His poetical reputation was now conſiderable, and he became known to king Ferdinand I. and princes Alfonſo and Frederic: he was admitted into their train, and accompanied them in ſeveral military expeditions. For the entertainment of his patrons he compoſed ſome dramatic pieces in the Neapolitan dialect, which became extremely popular. In the ſubſequent revolutions of the kingdom of Naples, and amidſt all the viciſſitudes undergone by the houſe of Aragon, Sannazaro remained faithfully attached to its members, and, upon the ſucceſſion of Frederic to the throne, he was rewarded with a penſion of 600 ducats, and the preſent of the pleaſant villa of Mergoghno, ſo much celebrated in his poems under the name of Mergillina. When this prince loſt his crown, and was obliged to retire to France, Sannazaro, after ſelling the remainder of his hereditary poſſeſſions, to relieve the neceſſities of his ſovereign, followed him, and continued attached to his ſervice till he died, in 1504. Sannazaro then returned to Italy, where he devoted himſelf to poetry and letters, preſerving his gaiety and the gallantry of a courtier to advanced years. He had, at length, the mortification to witneſs the deſtruction of his Mergillina by the imperial army under Philibert, prince of Orange; and though his revenge was in ſome degree gratified, by the intelligence that this leader was ſoon ſlain in battle, he himſelf did not long ſurvive. He died near Naples in 1530, at the age of 72. The name of Sannazaro ſtands very high in Italian and Latin poetry. In the firſt he is accounted one of the pureſt and moſt elegant compoſers of his age, and if he had not employed his mature powers upon Latin verſe, it has been thought that he might have attained to the higheſt rank in vernacular poetry. The moſt celebrated of his works in this claſs is entitled "Arcadia," a paſtoral, conſiſting of dialogues in verſe, each preceded by an introduction in a ſort of poetical proſe. It was, at the time of publication, ſo very popular, that it went through many editions, and in the 16th century ſixty editions had appeared. He was author likewiſe of ſonnets and lyrical pieces, of which the beſt editions are thoſe by Comino in 1723, and by Remondini in 1752. The Latin poems of Sannazaro are highly commended for the finiſhed elegance of their ſtyle and verſification: they conſiſt of piſcatory eclogues, elegies, epigrams, and a ſacred poem "De Partu Virginis." This laſt piece conſiſts of 1500 lines, containing many fine paſſages, and exhibiting great command of the Latin language, in adapting it to ſuch a ſubject. Eraſmus has juſtly cenſured the poet for his invocation of the muſes and Phœbus; for his repreſenting the Virgin as intent upon the Sybilline verſes, inſtead of the Jewiſh prophecies; and for the general air of heatheniſm given to the whole work. Roſcoe's Leo X.

SANNE, or SENNE, in *Geography*, a river of France, which runs into the ſea about nine miles from Dieppe.

SANNI, in *Ancient Geography*, a people of Aſia, near the Leſſer Armenia, and near Trebizond and Pharnacia. Strabo.

SANNINA, a town of Aſia, in Media. Ptolemy.

SANON, in *Geography*, a river of France, which runs into the Meurte, 2 miles E. of St. Nicolas.

SANORE, a country of Hindooſtan, S. of Viſiapour, and N. of the Myſore, about 120 miles long and 70 broad; which derives its name from Sanore, a fortreſs on the river Toom; 110 miles S.S.E. of Viſiapour.—Alſo, a town and fortreſs of Hindooſtan, on the left bank of the Toom, about 15 miles from its junction with the Nigoodan, to form the Tungabadra. On the oppoſite bank is another town, called Bancapour, or Sanore Bancapour, 110 miles S. of Viſiapour. N. lat. 15° 40′. E. long. 75° 50′.

SANOSA, a town of Auſtrian Poland, in Galicia, on the river San; 74 miles S.W. of Lemberg.

SANOWLEY, a town of Hindooſtan, in Oude; 50 miles N.E. of Fyzabad. N. lat. 27° 15′. E. long. 83° 11′.

SANPARAM, a town of Hindooſtan, in the circar of Cicacole; 10 miles N.E. of Kimedy.

SANPOO, a river of Aſia, ſuppoſed to be the ſame as the Burrampooter, which ſee.

SANPOO, or *Tſanpoo,* (*Yo*), or *Teeſta,* a river which riſes in Thibet, and joins the Ganges in Bengal.

SANPOORA, a town of Bengal; 62 miles N.W. of Ramgur.

SANPOU, a town of Corea; 113 miles S.S.E. of King-ki-tao. N. lat. 37° 8'. E. long. 128° 48'.—Alſo, a town of China, of the third rank, in Yun-nan; 7 miles S.W. of Ganning.

SANQUELIN, a town of Hindooſtan, in Soonda; 15 miles E. of Goa.

SANQUELOC, a town of Upper Siam; 35 miles N.W. of Porſelouc.

SANQUEM, a town of Hindooſtan, in Soonda; 25 miles S.E. of Goa.

SANQUHAR, a royal borough and market-town in the county of Dumfries, Scotland, is ſituated on the banks of the river Nith, and near the confines of Ayrſhire, at the diſtance of 27 miles N.N.W. from Dumfries, and 33 miles S.S.E. from the town of Ayr. It is conjectured by ſome writers to have been a town in the earlieſt period of Scottiſh hiſtory, and there can be no doubt that it enjoyed the privileges of a burgh of barony, at leaſt two centuries before the ſame were confirmed by charter in 1484. King James VI. at the inſtance of Robert Crichton, lord of Sanquhar, elevated it to the rank of a royal burgh in 1596, and as ſuch it now joins with the burghs of Dumfries, Annan, Kirkcudbright, and Lochmaben, in deputing a repreſentative to the Britiſh parliament. The corporation of this town conſiſts of a provoſt, a dean of guild, three bailies, and eleven counſellors; and excluſive of a large tract of commonty, poſſeſſes a revenue of nearly 100*l.* *per annum.* Formerly a conſiderable manufacture of knit ſtockings was carried on here, but that branch of induſtry received a fatal check at the commencement of the American war. It ſtill employs ſeveral families, though on a much narrower ſcale than before, when one perſon was accuſtomed to ſend to a ſingle houſe in Glaſgow 4800 pairs of ſtockings annually.

Since the decline of this manufacture, however, ſeveral carpet-works have been eſtabliſhed here, alſo a ſmall manufacture of woollen cloths, both which are rapidly increaſing in importance. Indeed no ſituation is better adapted for the proſecution of the woollen trade than Sanquhar, as it is almoſt in the centre of a country, whoſe ſtaple commodities are ſheep and wool, and which touches the head of Galloway on the one hand, and borders on Ayrſhire, Clydeſdale, Annandale, and Tweedale, on the other. To theſe advantages may be added abundance of coal and water in the immediate vicinity; likewiſe an eaſy communication with Edinburgh, Dumfries, Ayr, and Glaſgow, by excellent roads.

Sanquhar conſiſts chiefly of one principal ſtreet, nearly half a mile in length, with a number of ſtraggling houſes on each ſide of it. The only building worthy of notice is the church, which is a ſtructure in the early pointed ſtyle of architecture, but ſo much mutilated by decay and alterations as to have loſt all intereſt as an object of ancient art. Sanquhar market is held on Saturday weekly; and there are beſides two annual fairs for the ſale of black cattle and ſheep. The pariſh is very extenſive, being about fifteen miles in length and nearly ten in breadth; and containing, according to the parliamentary returns of 1811, 562 houſes, and 2709 inhabitants. It is prolific of minerals of various kinds, but particularly of coal, iron-ſtone, and lime-ſtone, all of which are mined in different parts of it. Near the town, on its ſouthern ſide, ſtand the ruins of Sanquhar caſtle, once the ſeat and reſidence of the Crichton family, one of whom was the romantic and chivalrous character, who, in the ſixteenth century, was celebrated for his learning and accompliſhments over all Europe, and is commonly known by the name of the admirable Crichton. The Statiſtical Account of Scotland by ſir John Sinclair, bart. vol. vi. 8vo. 1793. Carliſle's Topographical Dictionary of Scotland, 4to. 1813.

SANS PAREILLE, in *Conchology,* the name of a particular ſpecies of buccinum, which has its mouth opening a contrary way to that of all other buccina. This is a ſingle ſpecies among the recent buccina, but we find more than one kind with this peculiarity among the foſſile ſhells, and that in great abundance in many places in England.

SANSAC, in *Geography,* a town of France, in the department of the Charente; 10 miles S.E. of La Rochefoucauld.

SANSANDING, a very large town of Africa, in Bambara, ſituated on the banks of the Niger, much reſorted to by the Moors, who bring thither large quantities of ſalt, which they barter for ſhea-toulou and gold-duſt; 25 miles N.E. of Sego. When Mr. Park, in his African travels, paſſed between the outſkirts of this town and the river, he ſaw twenty large canoes, moſt of them fully laden, and many others rowing down the river full of paſſengers or goods.

SANSCRIT LANGUAGE. See SHANSCRIT.

SANSEGO, in *Geography,* a ſmall iſland in the Adriatic. N. lat. 44° 45'. E. long. 14° 36'.

SANSEVIERA, in *Botany,* named by Thunberg, who more correctly perhaps writes it *Sanſevieria,* in honour, as we preſume, of ſome botaniſt; but we are not able to diſcover any thing of his hiſtory.—Thunb. Nov. Gen. 127. Willd. Sp. Pl. v. 2. 159. Ait. Hort. Kew. v. 2. 278. Lamarck Dict. v. 6. 501. (Liriope; Loureir. Cochinch. 200. Salmia; Cavan. Ic. v. 3. 24. Aletris; Lamarck Illuſtr. t. 237. Gærtn. t. 15.)—Claſs and order, *Hexandria Monogynia.* Nat. Ord. *Coronariæ,* Linn. *Aſphodeli,* Juſſ.

Gen. Ch. *Cal.* none. *Cor.* inferior, of one petal, funnel-ſhaped, permanent; tube cylindrical; limb in ſix deep, revolute, nearly equal ſegments. *Stam.* Filaments ſix, awl-ſhaped, inſerted into the tube at the baſe of the ſegments, and equal to them in length; anthers oblong, erect. *Piſt.* Germen ſuperior, ovate; ſtyle awl-ſhaped, the length of the ſtamens; ſtigma three-cleft. *Peric.* Berry globoſe, of three cells. *Seeds* roundiſh, ſolitary.

Eſſ. Ch. Calyx none. Corolla of one petal; tube cylindrical; limb in ſix deep revolute ſegments. Stamens inſerted at the baſe of each ſegment. Berry of three cells. Seeds ſolitary.

1. S. *guineenſis.* Guinea Sanſeviera. African Bowſtring Hemp. Willd. n. 1. Ait. n. 1. Curt. Mag. 1180. t. 1179. (Aletris guineenſis; Jacq. Hort. Vind. v. 1. 36. t. 84. A. hyacinthoides β; Linn. Sp. Pl. 456.)—Leaves lanceolate, uniform. Style twice the length of the ſtamens. Bracteas one-third as long as the tube of the corolla. Flowers ſeſſile.—Native of Guinea. Long cultivated in our gardens, flowering in the dry ſtove moſt part of the ſummer. *Root* perennial, with ſtrong fibres. *Stem* none. *Leaves* lanceolate, erect, 18 to 24 inches long, rigid and coriaceous, entire, ſmooth, dark green tranſverſely variegated with a paler hue; their internal fibres ſupplying the Africans with bow-ſtrings. *Flower-ſtalks* taller than the leaves, each bearing a long ſpike of aggregate, greeniſh-white *flowers,* in great numbers, of conſiderable elegance. *Berry* tawny, with only one perfect ſeed.

Owing to the ſcarcely pardonable blunder, as it occurs in ſuch works ſo frequently, of the letter-preſs in the Botanical Magazine being numbered 1180, while the table is

1179, the accurate editor of Hort. Kew. has been miſled in his quotation. An almoſt unique inſtance with him!

2. S. *zeylanica.* Ceylon Sanſeviera. Willd. n. 2. Ait. n. 2. Roxb. Coromand. v. 2. 43. t. 184. (Aletris hyacinthoides α; Linn. Sp. Pl. 456. Salmia ſpicata; Cavan. Ic. t. 246. Liriope ſpicata; Lour. Cochinch. 201.)—Leaves ſmooth; partly oblong, acute, flat; partly linear-lanceolate, channelled. Style the length of the ſtamens. Bracteas the length of the partial flower-ſtalks.—Native of Ceylon, and other parts of the Eaſt Indies. Common in buſhy places on the coaſt of Coromandel, flowering from the beginning of January till May. The narrower and more various form of the *leaves*, beſides the other characters indicated above, and the ſomewhat ſmaller *flowers*, diſtinguiſh this ſpecies from the foregoing. Dr. Roxburgh ſays its uſe is ſimilar, the *leaves* affording the natives of Hindooſtan peculiarly excellent bow-ſtrings. That faithful hiſtorian of nature, whoſe recent death we have now to lament, ſuſpects that what is commonly termed China-graſs, or *Fucus Tendo* of Linnæus, is no other than the fibre of theſe leaves.

3. S. *carnea.* Fleſh-coloured Sanſeviera. Andr. Repoſ. t. 361. Ait. n. 3. (S. ſeſſiliflora; Gawler in Curt. Mag. t. 739.)—Leaves ſmooth, two-ranked, lanceolate ſword-ſhaped, keeled. Flowers ſolitary, ſeſſile.—Native of China, introduced by the late Mr. Evans of Stepney. It flowers in the greenhouſe at various ſeaſons. This is a ſmaller plant than either of the preceding. The *leaves* are ribbed, of an uniform green, and riſe much above the pale pink *ſpike* of *flowers*, which are ſolitary, not aggregate.

4. S. *lanuginoſa.* Woolly-leaved Sanſeviera. Willd. n. 3. (Katu kapel; Rheede Hort. Malab. v. 11. 83. t. 42.)—Leaves linear-lanceolate, with woolly ribs. Style the length of the ſtamens. Flowers aggregate, ſtalked, without bracteas.—Native of ſandy ground in Malabar. A doubtful ſpecies, moſt allied perhaps to our *zeylanica*, but Willdenow, on the authority of Rheede, has diſtinguiſhed it. The *flowers* are ſaid to be reddiſh externally, greeniſh within, and the *fruit* green. No *bracteas* are repreſented; which, if correct, affords a ſufficient diſtinctive character.

SANSIO, in *Geography*, a town of Sweden, in the province of Smaland; 26 miles S.E. of Jonkioping.

SANSON, Nicholas, in *Biography*, a celebrated French geographer in the 17th century, was born at Abbeville, in Picardy, in the year 1600. He was educated in the Jeſuits college of Amiens, and diſcovered an early inclination for that ſcience in which he afterwards excelled, and which was cultivated by his father, who had publiſhed ſeveral maps. At the age of 18 or 19 he had drawn a map of ancient Gaul on four ſheets, and compiled a Latin explanatory treatiſe to accompany it, but he was perſuaded to defer the publication of this work, in order that he might render it more perfect, and by the apprehenſion that, on account of his youth, it might be aſcribed to his father. He commenced his career in life in merchandize, but having met with conſiderable loſſes he determined to devote himſelf wholly to the purſuits of ſcience. In 1627 he publiſhed his map of ancient Gaul, which met with ſo favourable a reception that he had the greateſt encouragement to proceed in the career in which he had embarked. His next work made its appearance in 1636, under the title of "Græciæ Antiquæ Deſcriptio Geographica," which was followed, in the ſame year, by a curious piece, entitled "Britannia, or an Enquiry into the Antiquity of Abbeville." In 1637 he diſtinguiſhed himſelf by "A Treatiſe on the Roman Empire," with 15 maps. His attention in the mean time was not wholly engroſſed by his geographical productions, but directed to the fortifications of Abbeville, for which he was engaged in the capacity of engineer to the king. In 1641 he publiſhed a map of the rivers of France, and in 1644 he gave the public another work, entitled "France delineated," on five Latin maps, compriſing the ancient Itineraries, and five French ones, and accompanied with different illuſtrative treatiſes. Soon after this he publiſhed ſimilar maps, both in Latin and French, of "The Britiſh Iſles," "Spain," and "Italy:" with the laſt he gave "A Treatiſe on the Sovereign Princes of Italy;" and from this time he directed his labours to a more particular delineation of France, in which he proceeded till it was, at length, extended to nearly 120 folio ſheets. For the great ſervices which he thus rendered to the intereſts of ſcience, he was appointed not only geographer to the king, but had a penſion of 2000 livres ſettled upon him. This appointment made it neceſſary for him to remove to Paris; and ſome time after his ſettlement there, in 1646, he publiſhed nine maps of the courſe of the Rhine, with an alphabetical table of all the cities, their ſituations, &c. In 1647 he engaged in a controverſy with father Labbe, who, in his "Pharus Galliæ Antiquæ," had attacked the notes accompanying M. Sanſon's map of the Gauls, and yet copied them in a variety of places without making any acknowledgment of his obligations. On this occaſion M. Sanſon publiſhed his "Diſquiſitiones Geographicæ in Pharum Galliæ Antiquæ," in which he fully eſtabliſhed his charge of plagiariſms againſt Labbe, and alſo convicted him of a vaſt number of geographical blunders. In 1649 he publiſhed "Remarks on the Map of ancient Gaul at the time of Cæſar;" and in a few years afterwards he gave to the public his "Aſia," in 14 new maps, illuſtrated by ſeveral geographical and hiſtorical diſſertations, which was a very popular work. He next publiſhed "Geographia ſacra ex Veteri et Novo Teſtamento deſumpta, et in Tabulas quatuor concinnata, &c. Additæ ſunt deſcriptio Terræ Chanaan, ſive Terræ Promiſſæ, Jeſu Chriſti, et Apoſt. Petri et Pauli Vitæ; tum et in omnes eas Tabulas et Deſcriptiones, Animadverſiones et Index Geographicus." Of this work an edition was printed by Le Clerc, in 1704, with notes and an additional preface by the editor. In 1656 M. Sanſon publiſhed his "Africa," conſiſting of 19 maps, and afterwards his "America," in 16 maps; each ſet being accompanied with geographical and hiſtorical treatiſes. He was author of a great variety of other maps, in Latin and French, which, together with his other works, form a large atlas, in two vols. folio, accompanied by a ſet of "Methodical Tables," containing a compariſon of ancient with modern geography. M. Sanſon died in 1667, in the 67th year of his age. He left three ſons, each of whom poſſeſſed a portion of their father's genius, and obtained the poſt of geographer to the king. The eldeſt, Nicholas, was killed during the barricades of Paris in 1648, while defending the chancellor Seguier againſt the populace. He was author of a work entitled "Europe," written in the form of a dialogue, and illuſtrated with 20 French and nine Latin maps, and of many other works. William, the ſecond ſon, who died in 1705, was author of Latin notes againſt the geographical dictionary of Baudrand; alſo, of "An Introduction to Geography." The youngeſt ſon of M. Sanſon, Adrian, died in 1718.

SANSONATE, or La Trinidad, in *Geography*, a ſea-port town of Mexico, in the province of Guatimala, at the mouth of a river of the ſame name; 120 miles S.E. of Guatimala.

SANSOR, a town of Hindooſtan, in the circar of Ellicpour; 9 miles N. of Akoat.

SAN-SOUCI, a town of the Middle Mark of Brandenburg, near Potzdam, where is a royal palace, which has no claim to grandeur of external architecture.

SANSOVINO, Jacopo, in *Biography*, an eminent ſculptor and architect, whoſe family name was Tatti, was born in 1479, at the town of Sanſovino, in Tuſcany, from which place he took his uſual appellation. He became a diſciple of the famous Florentine ſculptor, Andrea Contucci, alſo called Sanſovino. At an early age he contracted an intimacy with the painter Andrea del Sarto, and a mutual communication of ſtudies and ideas took place between them. He was firſt taken to Rome by the architect Giuliano da San-Gallo, where he was employed in deſigning and modelling antiques. After paſſing ſome time at Rome, his want of health obliged him to return to Florence, where he was engaged in ſeveral works. In 1514 he was employed to deſign the triumphal arches erected for the entrance of Leo X., and his plans were ſo much approved by that pope, that he ordered him to give a model for an intended marble front of the church of San Lorenzo. It was approved, but the execution of the work being aſſigned to Michael Angelo, Sanſovino left Florence and returned to Rome. He there executed many works in ſculpture and architecture, among the latter of which was the magnificent church of St. John the Baptiſt. On the ſack of Rome in 1527, Sanſovino retired to Venice with the intention of proceeding to France, but the reception which he met with there, determined him to remain in that capital. He was appointed architect to the republic, and was immediately engaged in ſome of the ſplendid works which have inſeparably connected his name with the decorations of Venice. He died at Venice in the year 1570, at the age of 90. As a ſculptor he was diſtinguiſhed by the expreſſion and action of his figures, and the ſingular lightneſs of his draperies. He diſplayed in his art great powers of invention, directed by much good taſte. Gen. Biog.

Sansovino, Francesco, ſon of the preceding, was born at Rome in 1521. He accompanied his father to Venice, where he was inſtructed in claſſical literature by the beſt maſters. It being his father's deſign to fit him for advancement in the court of Rome, he was ſent to ſtudy the law at Padua; but the more agreeable ſtudies in which he had been initiated, gave him a diſtaſte to ſeverer purſuits, and inſtead of attending the ſchools, he procured an admiſſion into a newly founded academy. With this ſtep his father was ſo much offended, that going to Padua he refuſed to ſee his ſon; and Franceſco upon this, to appeaſe his father, conſented to remove to Bologna, where he went through all the proceſs of a legal graduation. But though he had taken a doctor's degree, he declined following the profeſſion, and devoted himſelf to literature. Upon the election of Julius III., who was his godfather, to the papal throne, in the year 1550, he flew to Rome full of hopes, but obtaining no valuable preferment, he returned to Venice, and devoted himſelf to literary occupations. He compoſed a multiplicity of works of various kinds, but they were written in great haſte, and were not at all calculated for duration. The two that have been moſt known are entitled "L'Origine e Fatti delle Famiglie illuſtri d'Italia," and "Il Ritratto delle piu nobili Citta d'Italia."

SANSUND, in *Geography*, a town of Norway, on the Glammen; 24 miles N.E. of Frederickſtadt.

SANT, a town of Bavaria, in the biſhopric of Bamberg; 9 miles N.W. of Burg-Eberach.—Alſo, a town of Hindooſtan, in Bahar; 30 miles W.N.W. of Saſeram. N. lat. 25° 23′. E. long. 83° 44′.

SANTA, a town of Spain, in New Caſtile, on the Xucar; 20 miles S. of Alarçon.—Alſo, a town of Peru, and capital of a juriſdiction, in the archbiſhopric of Lima, on a river of the ſame name. It was originally built on the ſea-coaſt, but is now above half a league diſtant; and it was then large and populous, and the reſidence of a corregidor, with ſeveral convents; but being pillaged by the Engliſh in the year 1685, it was abandoned by the inhabitants; and thoſe who could not remove to a more ſecure place, ſettled here. The whole number of houſes does not now exceed 30, and the beſt of them are conſtructed of cane, and the reſt of ſtraw. Theſe houſes are inhabited by about 50 poor families, conſiſting of Indians, Mulattoes, and Meſtizos; 210 miles N.N.W. of Lima. S. lat. 9° 3′. W. long. 78° 48′.—Alſo, a river of Peru, which runs into the South Pacific ocean, S. lat. 9°.—Alſo, a city of China, of the firſt rank, in the province of Yun-nan, ſurrounded with mountains, and ſituated on the borders of Ava, having a garriſon for the defence of the frontiers. N. lat. 24° 40′. E. long. 107° 46′.—Alſo, a town of Hindooſtan, in the circar of Cicacole; 10 miles N.E. of Kimedy.—Alſo, a ſmall iſland in the Pacific ocean, near the coaſt of Peru. S. lat. 9°.

Santa *Barbara*, a ſea-port and Spaniſh ſettlement of North America, in New Albion, with a preſidio and miſſion, on the coaſt of the North Pacific ocean, ſee *Canal of St.* Barbara.—Alſo, a town of the iſland of Cuba; 10 miles S. of Bayamo.—Alſo, a ſea-port on the S.E. coaſt of the iſland of Curaçoa, with a good harbour.—Alſo, a ſmall iſland in the North Pacific ocean, about 40 miles from the coaſt of New Albion. N. lat. 33° 24′. E. long. 241° 16′. See alſo *St.* Barbara.

Santa *Barbara de Timbiqui*, a town of South America, in the province of Popayan, near the mouth of the river Plata; 30 miles N.W. of Barbacoa. N. lat. 2° 12′.

Santa *Bembally*, a town of Hindooſtan, in the circar of Cicacole; 25 miles N.E. of Cicacole.

Santa *Caloma*, a town of Spain, in Catalonia; 11 miles S.E. of Cervera.

Santa *Clara*, a miſſion of Franciſcan friars, on the W. coaſt of North America, eſtabliſhed for the converſion and inſtruction of the Indians in New Albion, under the Spaniſh government. Theſe fathers have a guard, conſiſting of a corporal and ſix privates. The ſituation is a fertile ſoil, on which they cultivate wheat, maize, peas and beans; 40 miles S.S.E. of St. Franciſco.—Alſo, one of the ſmaller Canary iſlands, N. of Lancerotta. N. lat. 29° 35′. W. long. 13° 22′.—Alſo, a town of New Mexico, on the Bravo; 40 miles N.N.W. of Santa Fé.—Alſo, a ſmall iſland near the coaſt of Peru, ſituated in the bay of Guayaquil; 27 miles S. from the iſland of Puna. S. lat. 3°.

Santa *Cruz*, a ſea-port town of Morocco, in the province of Suz, or Suſe, called by the Arabs Aguadir, Agadeer, or Cape Aguer, and in the time of Leo Africanus Guertgueſſem. A Portugueſe gentleman built a wooden houſe on this coaſt, for the convenience of fiſhing, for which the ſpacious bay of this place, and the neighbouring ſea, afford an ample ſupply of fiſh; and he found it a very lucrative undertaking. The Moors call this place "El dar del Roomi," that is, the houſe of the Roman. About the beginning of the 16th century, *viz.* in 1503, Don Emanuel, king of Portugal, finding the importance of this poſt with a view to the conqueſts which he had already made, or farther projected, bought the ground, and built a fortreſs called Santa Cruz, which was taken from the Portugueſe in 1536. This town was, for a long time, the centre of an extenſive commerce, whither the Arabs of the Deſart, and the people of Soudan, reſorted to purchaſe various kinds of merchandize, for the markets of the interior of Africa; and caravans were conſtantly paſſing to and from Tombuctoo. Different European nations had ſeveral factories in this place, till the year 1773, when the emperor Seedy Mahomet marched againſt it, and cauſed it to ſurrender; the governor Talb Solh having long reſiſted, and at length terminated his exiſtence by means of a penknife, which was ſent to him baked in a loaf of bread. The merchants were allowed but a ſhort time to collect together their effects, when they were ordered to proceed to Mogodor, at the diſtance of about 35 leagues, where the emperor encouraged them to build houſes. Santa Cruz is the laſt port in the emperor's dominions, on the ſhores of the Atlantic. The town, which ſtands on the ſummit of the mountain, is ſtrong by nature, and its walls are alſo defended by batteries; but the principal battery is at a ſhort diſtance from the town, down the mountain, and was originally intended to protect a fine ſpring of freſh water, cloſe to the ſea: this battery alſo commands the approach to the town, both from the north and the ſouth, and the ſhipping in the bay. The town, called by the Portugueſe Fonté, is ſtill ſtanding at the foot of the mountain, and the arms of that nation are now to be ſeen in a building erected over the ſpring. The port of Santa Cruz is a large and very ſecure bay, capable of containing a great number of ſhips, and well defended on all ſides from the wind. Immenſe quantities of fiſh are caught here by the inhabitants of the town, and prepared in ovens, for tranſportation to the interior.

Beyond Santa Cruz there is no port frequented by ſhipping; there is, however, a tract of coaſt which holds out great encouragement to commercial enterprize, and ſecure eſtabliſhments might be effected upon it, which would amply remunerate the enterpriſing ſpeculator: the people of Suſe are alſo well diſpoſed towards Europeans, particularly the Engliſh; and the communication, as well as the ſhort diſtance between this place and the provinces or diſtricts where moſt of the valuable products of Barbary are raiſed, renders it peculiarly adapted to trade. There are but two roads fit for ſhipping between Santa Cruz and Cape Bojador, an extent of coaſt, for the moſt part deſart, of ſeventy leagues, the whole of which is inhabited by various tribes of Arabs, who have emigrated at different periods from the interior of Sahara, and pitched their tents wherever they could find a ſoil capable of affording paſture to their flocks. In theſe ſouthern climates the people are more ſuperſtitious than in the northern provinces; they have but few moſques, and therefore perform their devotion in the open air or in their tents. Horſes, camels, and other beaſts, live together with men, women, and children, indiſcriminately. When they are in want of water for their religious ablutions, they ſubſtitute ſand. Theſe reſtleſs people are continually at war with their neighbours, their conteſts originating in family quarrels: plunder keeps them inceſſantly in motion, and they traverſe the deſart to Soudan, Tombuctoo, and Wangara. The town of Santa Cruz contains 300 inhabitants; and together with its diſtrict, including Tiddi, Teddert, and Tamaract, it contains 1000. N. lat. 30° 28′. W. long. 9° 30′.—Alſo, a river of Morocco, which runs into the Atlantic, near cape Aguer.

SANTA *Cruz*, a town of Mexico, in New Biſcay; 50 miles W.N.W. of Parral.—Alſo, a town of Mexico, in New Biſcay; 150 miles N. of Durango.—Alſo, a town and bay on the weſt coaſt of the iſland of Curaçoa.—Alſo, a town of Teneriffe. See *Santa* CRUZ.—Alſo, a ſea-port town of Braſil, near the coaſt of the Atlantic; 15 miles N. of Porto Seguro.—Alſo, an iſland in the Pacific ocean, diſcovered and thus named by Mendana, in 1595; afterwards called Egmont iſland.—Alſo, a river of Patagonia, diſcovered in 1520, by don Juan Serrano, captain of the St. Jago, who accompanied Magellan in his voyage round the world. The ſhip was wrecked in this river, but the crew were ſaved. It runs into the Atlantic, S. lat. 50° 25′.—Alſo, a ſea-port town of Cuba. See *Santa* CRUZ.—Alſo, one of the Caribbee iſlands. See *St.* CROIX.—Alſo, an iſland in the Pacific ocean, ſeparated from the coaſt of New Albion by the canal of St. Barbara, about 50 miles in circumference. N. lat. 34° 7′. E. long. 240° 43′.—Alſo, a port on the weſtern coaſt of America. See *Santa* CRUZ.—Alſo, a town of New Mexico, and capital of the province of Mayo, at the mouth of the river Mayo; 750 miles N.W. of Mexico. See *Santa* CRUZ.—Alſo, a river of Braſil, which runs into the Atlantic, S. lat. 16° 20′.—Alſo, a town on the eaſt coaſt of the iſland of Palma.—Alſo, a ſmall iſland among the Philippines, near the S.W. coaſt of Mindanao. N. lat. 6° 40′. E. long. 122° 12′.—Alſo, a ſmall iſland near the ſouth coaſt of Luçon. N. lat. 13° 42′. E. long. 121° 52′.—Alſo, a town on the weſt coaſt of the iſland of Mindoro. N. lat. 13° 5′. E. long. 120° 51′.

SANTA *Cruz de Caravaca*. See CARAVACA.

SANTA *Cruz de Galiſteo*, a town of New Mexico; 24 miles S. of Santa Fé.

SANTA *Cruz de Mompox*. See MOMPOX.

SANTA *Cruz de la Sierra la Nueva*. See *Santa* CRUZ *de la Sierra*.

SANTA *Cruz la Zarza*, a town of Spain, in New Caſtile; 29 miles S.S.E. of Madrid.

SANTA *Fé*. See *Santa* FÉ.

SANTA *Maria*. See *St.* MARIA.

SANTA *Maria*, the moſt ſoutherly of the Azores iſlands, in the Atlantic, about 30 miles in circumference; diſcovered by Gonzalvo Velho Cabral in the year 1432. It has a ſtrong natural rampart of high mountains and ſteep rocks, with which it is quite ſurrounded, in a manner ſo connected, cloſe, and regular, as requires not the aſſiſtance of art, nor of caſtles, garriſons, fences, and fortifications. The interior parts are fertile, populous, and well cultivated, ſupplying all the conveniences of life in great abundance. What merits attention, as it conſtitutes a great part of the commerce of the iſland, is an ingenious porcelain manufacture, in which china-ware is well imitated, and the commodity brought to a conſiderable degree of perfection. Santa Maria la Prainah is the chief town, beſides which there are ſeveral villages. The number of inhabitants is about 5000. N. lat. 36° 57′. W. long. 25° 9′.

SANTA *Maria d'Arvas*, a town of Spain, in the province of Leon; 24 miles N. of Leon.

SANTA *Maria de Guadaloupe*. See GUADALOUPE.

SANTA *Maria de Compagna*, a town of Italy, in the department of the Upper Po; 8 miles E. of Crema.

SANTA *Marina*, a town of Spain, in the province of Leon; 8 miles E. of Aſtorga.

SANTA *Martha*. See *Santa* MARTA.

SANTA *Paz*, a town of the iſland of Cuba; 28 miles E.S.E. of Trinidad.

SANTA *Roſa*, an iſland of Weſt Florida. See *St.* ROSA.—Alſo, a town of Peru, in the dioceſe of La Paz; 90 miles N. of La Paz.—Alſo, an iſland in the North Pacific ocean, W. of the canal of Santa Barbara. N. lat. 33° 58′. E. long. 240° 22′.

SANTA *Tingo*, a town on the W. coaſt of the iſland of Luçon. N. lat. 16° 32′. E. long. 120° 47′.

SANTA *Yſabel*, a town of the iſland of Cuba; 70 miles S.W. of Havanna.

SANTA *Yſabella*, a town on the north coaſt of the iſland of Cuba; 135 miles W.S.W. of Havanna.

SANTABUCA, a town of the iſland of Cuba; 10 miles N.N.W. of Spiritu Santo.

SANTAELLA, a town of Spain, in the province of Cordova; 10 miles W.S.W. of Montilla.

SANTALACEÆ, in *Botany*, a natural order of plants, ſelected by Mr. Brown, Prodr. Nov. Holl. v. 1. 350, from the *Elæagni* and *Onagræ* of Juſſieu, and named from SANTALUM, ſee that article, which is one of this tribe. The order in queſtion belongs to the *Dicotyledones apetalæ*, and has the following characters.

Perianth ſuperior, in four or five ſegments, half coloured; the ſegments before expanſion parallel.

Stamens four or five, oppoſite to the ſegments of the perianth, and inſerted into the baſe of each.

Germen of one cell, with from two to four ſeeds, which are inſerted near the top of the central receptacle, and pendulous. *Style* one. *Stigma* often lobed.

Pericarp dry and pulpy, with one perfect ſeed.

Albumen fleſhy, the ſhape of the ſeed.

Embryo dicotyledonous, central, inverted, round.

Stem arboreous or ſhrubby.

Leaves alternate, or imperfectly oppoſite, undivided, without ſtipulas; occaſionally minute, and like ſtipulas in appearance. *Flowers* ſmall, ſomewhat ſpiked; rarely umbellate, or ſolitary. See LEPTOMERIA.

SANTALLA, in *Geography*, a town of Spain, in the province of Aſturias; 46 miles W. of Oviedo.

SANTALUM, in *Botany*, a word of Oriental origin; the Sandal Wood.—Linn. Gen. 191. Schreb. 86. Willd. Sp. Pl. v. 1. 691. Mart. Mill. Dict. v. 4. Juſſ. 321. (Sirium; Linn. Mant. 2. 145. Schreb. 82. Juſſ. 321. Lamarck Illuſtr. t. 74.)—Claſs and order, *Tetrandria Monogynia*. Nat. Ord. *Onagræ*, Juſſ. *Santalaceæ*, Brown.

Gen. Ch. *Cal.* Perianth ſuperior, of one leaf, bell-ſhaped, coloured, in four ovate, acute, equal ſegments, deciduous. *Cor.* Petals none. Nectary of four roundiſh, thick ſcales, alternate with the ſegments of the calyx, and crowning its orifice. *Stam.* Filaments four, thread-ſhaped, hairy at the baſe, oppoſite to the ſegments of the calyx; anthers oblong, the length of the nectary. *Piſt.* Germen inferior, conical; ſtyle thread-ſhaped, the length of the ſtamens; ſtigma with three or four lobes. *Peric.* Drupa obovate, bordered at the top, of one cell. *Seed* ſolitary.

Eſſ. Ch. Petals none. Calyx ſuperior, coloured, four-cleft, deciduous. Nectary of four glands, alternate with the ſtamens. Drupa bordered at the top.

1. S. *album*. True Sandal Wood. Linn. Sp. Pl. 497. Willd. n. 1. (S. verum; Breyn. Prodr. 94. Ic. t. 5. f. 1. Sandalum; Rumph. Amboin. v. 2. 42. t. 11. Sirium myrtifolium; Linn. Mant. 2. 200. Roxb. Coromand. v. 1. 2. t. 2.)—Leaves lanceolate, acute, veiny, ſix times as long as the footſtalks. Flower-ſtalks ſubdivided, racemoſe. Stem arboreous.—Native of many parts of the Eaſt Indies. This tree, according to Dr. Roxburgh, is of ſmall ſize on the Circar mountains, and the wood conſequently of little value. On the Malabar coaſt it is much larger, and the wood reckoned of the beſt ſort. The *leaves* are oppoſite, one and a half or two inches long, on ſhort ſtalks, ſmooth, entire; glaucous beneath. *Cluſters* terminal, of ſeveral ſmall *flowers*, whoſe *calyx* is of a yellowiſh-green externally; the inſide dull ſcarlet; the *nectaries* notched, rather tawny. *Fruit* purple, the ſize of a currant, much eaten by birds, who thus diſſeminate the plant. "The wood of this tree," ſays Dr. Roxburgh, "is the white and yellow Sanders, Santalum album, et flavum, of the Materia Medica. Both ſorts are the produce of the ſame tree, and not, as Garcias ſays, of different trees. Moſt trees in India, when large and old, become coloured towards the centre; that part is always much more hard and durable than the exterior uncoloured part. It is the ſame with the Sandal tree. The centre, when the tree becomes large, acquires a yellow colour, great fragrance and hardneſs; while the exterior part of the ſame tree, that covers the coloured part, is leſs firm, white, and without fragrance. The yellow ſort only is of uſe; and the larger the tree, the more valuable is the wood, it having then acquired a greater degree of fragrance, for which alone it is held in ſuch univerſal eſtimation."

2. S. *ovatum*. Ovate-leaved Santalum. Br. n. 1.—"Leaves elliptic-ovate, acute, veiny, four times as long as the footſtalks. Flower-ſtalks undivided or three-cleft. Stem arboreous."—Gathered by Mr. Brown in the tropical part of New Holland. He remarks that it is nearly related to the former, but diſtinct.

3. S. *venoſum*. Veiny-leaved Santalum. Br. n. 2.—"Leaves oval-oblong, bluntiſh, glaucous, ſlightly veiny, twice as long as broad. Cluſters brachiate, undivided. Stem arboreous."—From the ſame country.

4. S. *oblongatum*. Oblong-leaved Santalum. Br. n. 3.—"Leaves oblong, narrow, obtuſe, coriaceous, glaucous, ſlightly veiny above, four times as long as broad. Cluſters brachiate, ſimple or divided."—Gathered by ſir Joſeph Banks, in the tropical part of New Holland.

5. S. *lanceolatum*. Lanceolate-leaved Santalum. Br. n. 4.—"Leaves lanceolate, elongated, acute at each end, glaucous, coriaceous, without veins. Cluſters brachiate. Stem ſhrubby."—Found by Mr. Brown in the ſame country.

6. S. *obtuſifolium* Blunt-leaved Santalum. Br. n. 5.—"Leaves oblong-oval, obtuſe, coriaceous, veinleſs; glaucous beneath; the upper ones here and there alternate. Cluſters of few flowers. Stem ſhrubby."—Gathered by Mr. Brown near Port Jackſon, New South Wales.

SANTALUM, in the *Materia Medica*, &c. See SAUNDERS.

SANTANDER, in *Geography*, a province of the Spaniſh dominions in North America, in the domain of New Leon, extending on both ſides of the great river Bravo; abounding in grains and fruits of various kinds, with numerous herds of cattle, and having alſo mines, eſpecially of ſilver, in the Sierra Gorda, a conſiderable chain of mountains in the S. which has ſometimes given name to the province. It was only ſubdued, and the capital of the ſame name founded, in 1748. It has an excellent harbour, diſcovered in 1739, which might, in caſe of invaſion, prove fatal to Mexico.—Alſo, a ſea-port town of Spain, in Aſturia, ſituated on the ſea-coaſt, at the foot of a hill, and the ſee of a biſhop. The harbour is good, and is capable of containing a numerous fleet, defended by two well-fortified caſtles. It is defended from the fury of the winds by a mole, which projects into the ſea. The town, though not large, is ſtrong; and the ſuburbs are inhabited by fiſhermen, as the neighbouring ſea abounds with excellent fiſh. The environs produce excellent fruit of various kinds, and are laid out in vineyards or gardens; 75 miles N. of Burgos. N. lat. 43° 27′. W. long. 3° 49′.

SANTANI, a town of the iſland of Majorca; 28 miles S.E. of Majorca.

SANTANILLA, or SWAN *Iſlands*, two ſmall iſlands, ſurrounded with rocks, in the bay of Honduras. N. lat. 17° 20′. W. long. 83° 50′.

SANTANO, a town of the iſland of Cuba; 25 miles N. of Havanna.

SANTANS, a town of France, in the department of the Jura; 7 miles S.E. of Dole.

SANTAPILLY Rocks, rocks in the bay of Bengal, near the coaſt of Cicacole. N. lat. 18°. E. long. 83° 15′.

SANTARELLI, Giuseppe, in *Biography*, cavaliero, cappellano di Malta, and maeſtro di cappella, to the pope in 1770. In his youth he had been an opera ſinger of the firſt claſs; but after his admiſſion into the papal chapel, he had rendered himſelf not only a profound contrapuntiſt, but deeply read in the hiſtory of his art, and had employed many years in compiling the following curious work: "Della Muſica del Santuario, e della Diſciplina de' ſuoi Cantori;" or, "A Treatiſe on the Muſic of the Pontifical Chapel, and the Diſcipline of its Singers."

This work, divided into centuries from the time of our Saviour, as ſecolo primo, ſec. 2do. ſec. terſo, &c. gives authorities for all its aſſertions throughout, from eccleſiaſtical hiſtory.

The firſt volume was printed in 1764, but never publiſhed; the MS. of the ſecond was in great forwardneſs in 1770; and ſeemed to ſupply all the deficiencies of another curious work on the ſame ſubject, publiſhed in 1711, entitled "Oſſervazioni per ben regolare il Coro della Capella Pontificia;" or, "Rules for conducting the Choir of the Pope's Chapel," by Andrea Adami. But the hiſtorical part of this book beginning only at the year 1400, and ending in 1711, wants ſuch a complete work as that of Santarelli, which begins with the firſt ages of the church, and continues to the middle of the laſt century, for the gratification of ſuch curious lovers of church muſic as wiſh to trace it from its ſource.

It ſeems as if the worthy Santarelli had been prevented from publiſhing his firſt volume, and more vigorouſly proſecuting the ſecond, by the want of patronage. Since the eſtabliſhing the muſical drama in every city of Italy, ſecular muſic has been ſo much more cultivated and reſpected than ſacred, that there is an indifference, even among the cardinals and heads of the church, about the hiſtory and progreſs or preſent ſtate of eccleſiaſtical muſic, that chills the zeal of its few remaining admirers, as well as of profeſſors qualified to deſcribe its former, or improve its preſent ſtate.

This excellent profeſſor, and accompliſhed and poliſhed character, had publiſhed, ſo early as the year 1761, a ſhort tract, entitled "Informazione del cantor Giuſeppe Santarelli," chaplain of honour to cardinal Aleſſandro Albani, in anſwer to a note from his eminence, requiring a ſketch of the origin of the papal chapel eſtabliſhment, the number of ſingers, ordinary and extraordinary, with the various changes at different periods of time, and an account of the abuſes, relaxations of diſcipline, and diſagreements among the ſingers; in order that if he (the cardinal) ſhould be called upon, as præfect of the ſaid chapel, to reform the college, he might be prepared for the work. This tract, which contains much curious information on the ſubject, ſeems to have been the germ of ſig. Santarelli's larger work, and in the ſecond volume of the prince abbot of St. Blaſius's Hiſtory of Sacred Muſic, from the firſt ages of the church, to the preſent time (1774), there is a letter from Santarelli on the ſubject of *modern* church muſic, *à grand orcheſtra*, in anſwer to a letter from the learned abbot, enquiring who were the compoſers then living, whoſe choral productions were moſt worthy of admiſſion, for their gravity and dignity, into the ſacred ſervice; when the papal maeſtro di cappella moſt judiciouſly mentioned, with great reſpect and preference, as models worthy of imitation, Haſſe, Jomelli, and Perez; all then ſuppoſed by Santarelli to be living.

SANTAREN, in *Geography*, a town of Portugal, in the province of Eſtremadura, on the Tagus, anciently called "Scalabis," defended by a citadel. It contains 13 churches, 13 convents, and ſeveral hoſpitals: and an academy of hiſtory, antiquities, and languages, inſtituted in the year 1747. Several kings of Portugal formerly kept their court here. In 1146 this town was taken by the Moors, and it is famous for a battle fought in 1184, in which the king of Portugal obtained a ſignal victory over the Moors, and compelled moſt of them, after the loſs of their king, to return to Africa; the number of inhabitants is eſtimated at 8000; 38 miles N.N.E. of Liſbon. N. lat. 39° 15′. W. long. 8° 48′.

SANTASHEETA, a town of Bengal; 65 miles S.S.E. of Dacca.

SAN-TCHEOU, a ſmall iſland in the Chineſe Archipelago; 24 miles S.W. of Macao.

SANTEE, a navigable river of America, the largeſt and longeſt in the ſtate of South Carolina. It is formed by the union of the Congaree and Wateree; the latter or northern branch paſſing the Catabaw nation of Indians, and bearing the name of Catabaw river. It diſcharges itſelf into the ocean by two mouths, a little S. of George-town. N. lat. 33° 12′. W long. 79° 51′.—Alſo, hills of South Carolina; 10 miles N.N.E. of Amelia.

SANTELMO, an iſland in the Pacific ocean, diſcovered by Quiros in the year 1606. S. lat. 28°. E. long. 152° 25′.

SANTEN. See Xanten.

SANTEO, in *Botany*, a name given by the people of Guinea to a herb, which they eſteem remarkably good in all diſeaſes of the eyes, the herb being boiled in water, and the eyes waſhed with it. The leaves of this grow in pairs, oppoſite one to another, and have no footſtalks. The joints, or ſettings on of the leaves, are blackiſh, and they are of the ſize and ſhape of thoſe of the laurel.

SANTERABARRY, in *Geography*, a town of Bootan, on the borders of Bengal; 17 miles N. of Beyhar.

SANTERNO, a river, which riſes in Etruria, about 15 miles N. of Piſtoia, and runs into the ſouthern branch of the Po, about 14 miles N. of Comachio.

SANTEUL, or, as it is ſometimes ſpelt, Santeuil, John Baptist, in *Biography*, a modern Latin poet, was born at Paris in 1630. He ſtudied in the Jeſuits' college, and at the proper age entered among the canons-regular of the abbey of St. Victor, and devoted himſelf to a literary life. He acquired a conſiderable name by his productions in Latin poetry, in which he ſung the praiſes of ſeveral great men, and he furniſhed the city of Paris with a number of inſcriptions for public edifices. His character was very ſingular: he was violent, capricious, and impatient. He compoſed in a ſort of enthuſiaſm, with ſtrange grimaces and diſtortions, and he had the higheſt opinion of his own performances. His moral conduct was very open to reproof, yet he had his fits of devotion, and none of his productions were more admired than his hymns. Thoſe which he compoſed for the breviary of the church of Paris were ſo much applauded by the devout, that many other churches wiſhed to employ him in the ſame taſk. At this time Santeul was living in the great world, being much patronized by the two princes of Conde, the duke of Bourbon, and other men of rank and conſequence. He was alſo noticed by Lewis XIV. who granted him a penſion. He was, however, the ſubject of raillery, and the manner of his death affords a proof of the liberties that were taken with him. Having accompanied the duke of Bourbon to Dijon at the aſſembly of the ſtates of Burgundy, ſome inconſiderate perſon, in the way of a joke, caſt a quantity of ſnuff into his wine, which, as ſoon as he had ſwallowed, threw him into great agonies, that put a period to his life in 14 hours. He died in 1697, at the age of 67. In his laſt moments a page came to him and announced a meſſage from his highneſs the duke of Bourbon, upon which he exclaimed, "Tu ſolus altiſſimus," raiſing his eyes to heaven. He is thought to have diſplayed more of the true poet than moſt of thoſe who have diſtinguiſhed themſelves by modern Latin verſe. Of his works a complete edition was publiſhed in three vols. 12mo. at Paris, 1729.

Santeul, Claude, elder brother of the preceding, an eccleſiaſtic in the ſeminary of St. Magloire at Paris, was alſo an eminent Latin poet. He was as gentle in his manners as his brother was impetuous. He died in 1684, at the age of 57.

SANTHOF, in *Geography*, a town of Bavaria; 5 miles N.N.W. of Bamberg.

SANTHOVEN, a town of France, in the department of the Two Nethes, and chief place of a canton, in the diſtrict of Anvers. The place contains 702, and the canton 7059 inhabitants, on a territory of 202½ kiliometres, in 16 communes.

SANTHUL, a town of Hindooſtan, in Guzerat; 30 miles S.S.W. of Gogo.

SANTIAGO, or St. Jago, a large and handſome town, the capital of the kingdom of Chili, the reſidence of a governor, the ſee of a biſhop, ſuffragan of the archbiſhop of Lima, and the ſeat of a royal audience. This city was founded by Capt. Pedro de Valdivia, who began to build it in 1541, in the valley of Mapocho, near the city of Chili, about 20 leagues from the harbour of Valparaiſo, the neareſt port to it in the South Seas. Its ſituation is convenient and delightful, on a plain 24 leagues in extent, watered by a river meandering through it, and called Mapocho. The river runs ſo near the city, that, by means of conduits, water is conveyed from it through the ſtreets, and it alſo ſupplies the gardens that are attached to almoſt all the houſes. Its extent from E. to W. is 1000 toiſes, and from N. to S. 600. On the ſide oppoſite the river is a ſuburb, called Chimba, and on the E. ſide, almoſt contiguous to the houſes, is a mountain, called Santa Lucia. The city is well built, having its ſtreets ſtraight, at right angles, and commonly 36 feet wide, and paved. On account of the repeated earthquakes to which it is ſubject, the houſes are low, generally reſtricted to a ground ſtory, and for the moſt part conſtructed of unburnt bricks, though many of the new buildings are of ſtone, and of two ſtories. They are whitened without, and commonly painted within, and upon the whole, they are well contrived both for beauty and convenience. Near the middle of the city is the grand piazza, which, like that of Lima, is ſquare, with a very beautiful fountain in the centre. On the N. ſide are the palace of the royal audience, where the preſidents have their apartments, the town-houſe, and the public priſon. The W. ſide is occupied by the cathedral and the biſhop's palace. The cathedral is 384 feet in length, the work of two Engliſh architects, but finiſhed by Indians, their diſciples. Its mint is the work of a Roman architect. The S. ſide of the city conſiſts of ſhops, each of them being decorated with an arch, and the E. ſide is taken up by a row of private houſes. The other parts of the city are divided into inſulated and regular ſquares of houſes. Here are ſeveral churches, convents, nunneries, and colleges of Jeſuits. The office of the inquiſition has a commiſſary with various ſubalterns. The inhabitants, according to Ulloa, are computed at about 4000 families, and of theſe nearly one half is compoſed of Spaniards, among whom are ſome diſtinguiſhed both for rank and opulence. The other moiety conſiſts of Caſts and Indians, but chiefly of the latter. The abbé Raynal reckons the inhabitants at 40,000. The men are ſaid to be robuſt, of a proper ſtature, well-ſhaped, and of a good air; and the women have all the charms of thoſe of Peru, and are rather more remarkable for the delicacy of their features, and the fineneſs of their complexion, the natural beauty of which, however, they diſfigure by paint, under an abſurd notion of improving it. Their manners are ſaid to be not only decent, but engaging; aſſiduous in their polite attention to ſtrangers. The magiſtracy conſiſts of a corregidor, acting as the repreſentative of its governor, regidores, and two ordinary alcaldes. The chapter of the cathedral is compoſed of the biſhop, dean, archdeacon, chantor, canons, and other ſubordinate eccleſiaſtics. The temperature of the air is nearly the ſame with that of Conception: the luxuriance of the ſoil, and exuberance of all kinds of proviſions, the commerce, and various other particulars, are detailed under the article Chili, to which we refer. S. lat. 33° 40′. W. long. 69° 35′.

Santiago. See *St.* Jago. See alſo Compostella.

Santiago *de Cacem*, a town of Portugal, in Eſtremadura; 38 miles S. of Setuval.

SANTIANES, a town of Spain, in the province of Aſturias; 15 miles S.S.W. of Oviedo.

SANTICUM, in *Ancient Geography*, a town of Norica, between Larix and Verunum, according to the Itinerary of Antonine.

SANTILLANE, in *Geography*, a town of Spain, and capital of the eaſtern part of Aſturias, ſituated in a valley, near the coaſt of the bay of Biſcay; 11 miles S.W. of Santander. N. lat. 43° 23′. W. long. 4° 2′.

SANTIPOUR, a town of Bengal; 20 miles N. of Calcutta. N. lat. 23° 13′. E. long. 28° 34′.—Alſo, a town of Hindooſtan, in Allahabad; 27 miles N.W. of Currah.

SANTIYANEZ, a town of Spain, in Old Caſtile; 7 miles N. of Burgos.

SANTOLINA, in *Botany*, preſumed to be a diminutive of *ſancta*, meaning a holy little herb, in alluſion to ſome reputed virtues.—Linn. Gen. 416. Schreb. 548. Willd. Sp. Pl. v. 3. 1797. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 860. Prodr. Fl. Græc. Sibth. v. 2. 165. Ait. Hort. Kew. v. 4. 517. Purſh 520. Juſſ. 185. Tourn. t. 260. Lamarck Illuſtr. t. 671. Gærtn. t. 165. (Gnaphalium; Tourn. t. 261. Gærtn. t. 165.)—Claſs and order, *Syngeneſia Polygamia-æqualis*. Nat. Ord. *Compoſitæ diſcoideæ*, Linn. *Corymbiferæ*, Juſſ.

Gen. Ch. *Common Calyx* hemiſpherical, imbricated, with ovate-oblong, acute, cloſe-preſſed ſcales. *Cor.* compound, uniform, longer than the calyx. Florets all perfect, numerous, equal, monopetalous, funnel-ſhaped; their limb in five revolute ſegments. *Stam.* Filaments five, capillary, very ſhort; anthers combined into a cylindrical tube. *Piſt.* Germen oblong, quadrangular; ſtyle thread-ſhaped, the length of the ſtamens; ſtigmas two, oblong, abrupt, depreſſed. *Peric.* none, except the unchanged calyx. *Seeds* ſolitary, oblong, quadrangular, without crown, wing, or down. *Recept.* flattiſh, chaffy, with concave ſcales.

Eſſ. Ch. Receptacle chaffy. Seed-down none. Calyx imbricated, hemiſpherical.

A genus of ſlightly ſhrubby, ſomewhat aromatic plants, with diſcoid yellow flowers. They are natives of the ſouth of Europe, one only being found in America. Linnæus has four ſpecies in his Sp. Pl. ed. 2; Willdenow has eight. There has always been a degree of ambiguity between this genus and ATHANASIA; ſee that article; the ſlight crown of the ſeed in *Athanaſia* conſtituting the only diſtinction; inſomuch that Linnæus, having ſometimes been unable to decide with certainty, has referred a ſpecies occaſionally to one or the other, according to his ideas at the time. The following examples may ſuffice to give an idea of what we deem certain *Santolinæ*.

S. *Chamæ-cypariſſus*. Common Lavender Cotton. Linn. Sp. Pl. 1179. Willd. n. 1. Ait. n. 1. (Abrotonum fœmina vulgare; Cluſ. Hiſt. v. 1. 341. Chamæcypariſſus; Ger. Em. 1109.)—Stalks ſingle-flowered. Leaves with four rows of teeth.—Native of hillocks and open fields in France, Spain, &c. a hardy ſhrub in our gardens, flowering in July. The *ſtem* is much branched and buſhy, twelve or eighteen inches high. *Leaves* copious, an inch or more in length, ſomewhat cylindrical, ſoft and hoary, with a powerful very peculiar ſcent when bruiſed. *Flowers* deep yellow, about three quarters of an inch broad, flat in the diſk, each on a long, ſlightly leafy, upright, rigid ſtalk.—Willdenow's *ſquarroſa*, n. 2, ſeems a variety cauſed by confinement, ſhade, or moiſture; but we have not examined it, any more than his third ſpecies, *viridis*, which he ſays is entirely ſmooth.

S. *roſmarinifolia*. Roſemary-leaved Lavender Cotton. Linn. Sp. Pl. 1180. Willd. n. 4. Ait. n. 4. Sm. Exot. Bot. v. 2. 5. t. 62. (Abrotonum fœmina narbonenſe; Cluſ. Hiſt. v. 1. 341. fig. 342.)—Stalks ſingle-flowered. Leaves linear; thoſe of the flowering branches plain and entire; thoſe of the barren ones revolute, beſet with ſcaly tubercles.—Found on open hills near the ſea, in Spain and the ſouth of France. Hardy with us, flowering, though very rarely, in Auguſt. The habit is like the laſt, but the *flowers* are larger and more convex, and the *leaves* differ eſſentially, as expreſſed in the ſpecific character; thoſe of the young branches being curiouſly beſet with imbricated ſcales; while the reſt reſemble lavender rather than roſemary.

S. *maritima*. Sea Cotton-weed. Linn. MSS. in Sp. Pl. 1182. Sm. Fl. Brit. n. 1. Engl. Bot. t. 141. Fl. Græc. Sibth. t. 150, unpubliſhed. Dickſ. H. Sicc. faſc. 6. 11. Willd. n. 5. Ait. n. 5. (Athanaſia maritima; Linn. Sp. Pl. 1182. Mant. 2. 464. Filago maritima; Linn. Sp. Pl. ed. 1. 927. Mill. Ic. t. 135. Gnaphalium marinum; Ger. Em. 640.)—Flower-ſtalks corymboſe. Leaves oblong, obtuſe, crenate, denſely woolly.—Native of the ſandy coaſts of the ſouth of Europe and north of Africa, in great plenty. In England it is rare, occurring chiefly on the ſhores of Suffolk, Angleſea, and the ſouthern counties, where it bloſſoms in autumn, making an elegant appearance. The whole herb is inveſted with ſnowy wool, which conceals the notches of the *leaves*. The *flowers* grow many together, and are about a quarter of an inch broad, of a rich golden yellow. Gærtner, with good reaſon, believes this to be the real ancient *Gnaphalium*, and therefore eſtabliſhes that genus on this ſingle ſpecies, after the example of Tournefort; indicating moreover an eſſential character, in the two lateral pouches at the baſe of the *corolla*, which run down each ſide of the *ſeed*. Desfontaines adopts the genus, only altering the name to *Diotis*, in alluſion to thoſe two *ear-like* appendages. We do not know enough of all the reputed *Santolinæ*, to be certain how far they poſſeſs this character.

S. *montana*. Mountain Lavender Cotton. Sm. Prodr. Fl. Græc. Sibth. n. 2026. Fl. Græc. t. 852, unpubliſhed.—Stalks ſingle-flowered. Leaves doubly pinnatifid, ſmooth, with appendages at the baſe. Stems ſimple.—Gathered by Dr. Sibthorp on mount Athos. This is a tufted, herbaceous, ſmooth ſpecies, agreeing with the two firſt deſcribed in its long ſimple *flower-ſtalks*, though the *flowers* are ſmaller; and with the Linnæan *S. alpina* in its dilated many-cleft *leaves*.

Two annual ſpecies, nearly akin, with much branched, diffuſe, rigid *ſtems*, are defined in the Prodr. Fl. Græc.; one by the name of *rigida*, which is *Tanacetum monanthos*, Linn. Mant. 111; the other is *Santolina anthemoides*, Linn. Sp. Pl. 1180, and appears by the Linnæan herbarium to be very cloſely related to *Anacyclus valentinus*, Linn. Sp. Pl. 1258.

SANTOLINA, in *Gardening*, compriſes plants of the low, under-ſhrubby, evergreen, and herbaceous kinds, of which the ſpecies cultivated are, the common lavender-cotton (S. chamæcypariſſus); the roſemary-leaved lavender-cotton (S. roſmarinifolia); the alpine lavender-cotton (S. alpina); and the chamomile-leaved lavender-cotton (S. anthemoides).

In the firſt ſort there are ſeveral varieties of the hoary lavender-cotton; which in the firſt branches out like the common ſort, but ſeldom grows ſo tall: the branches are divided into a great number of ſtalks, which are ſhort, hoary, and below ſet very cloſely with ſhorter, thicker, and whiter leaves: the flowers are much larger, and the brims of the florets more reflexed, and of a deeper ſulphur-colour.

The creeping lavender-cotton, which is of ſtill lower ſtature, ſeldom riſing more than fifteen or ſixteen inches high: the branches ſpread horizontally near the ground, and have ſhorter leaves than either of the former; they are hoary, and finely indented; the ſtalks are ſhort, and are each terminated by a ſingle flower of a bright yellow colour, and larger than thoſe of the common ſort.

And the dark-green lavender-cotton, which riſes higher than theſe: the branches are more looſely diſpoſed, and more diffuſed; are more ſlender, ſmooth, and have very narrow long leaves of a deep green colour, indented only two ways; the ſtalks are ſlender, naked towards the top, and terminated by ſingle flowers of a gold colour.

In the ſecond ſpecies there is a variety in which the branches are ſhorter, thicker, and cloſer ſet with leaves; which come out in cluſters, are ſhorter, and blunt: the flower-ſtalks are ſparſedly diſpoſed, and have leaves to their top: the flowers are ſmall and of a yellow colour.

Method of Culture.—Theſe plants may be raiſed from ſlips or cuttings, which ſhould be planted out in a border of good light freſh earth in the ſpring ſeaſon, water and ſhade being afforded till they have ſtricken root, being afterwards kept clean from weeds till the beginning of autumn, when they ſhould be taken up with care, and planted out where they are deſigned to remain: when the buſineſs of removing them cannot be performed at the above period, it ſhould be delayed till the ſpring following, as when removed late they are apt to be deſtroyed in the winter: they ſucceed beſt in a poor dry ſoil. Thoſe of the ſhrubby ſort are the beſt and moſt readily increaſed this way.

They may however be raiſed from ſeeds, which ſhould be ſown in the ſpring in beds of light earth, either in ſhallow drills or all over the ſurface, covering them in to a moderate depth. They will come up the ſame year, and towards the autumn or in the ſpring, they ſhould be pricked out at half a foot diſtance, when after having half a year's growth they may be tranſplanted to proper diſtances.

The herbaceous kinds may alſo be increaſed by parting the roots in the autumn, and ſowing the ſeed in the ſpring, in any common earth, raking it in. When the ſeedlings are a little advanced in growth they ſhould be planted out in the above manner.

They have a very ornamental effect in the borders and clumps, when kept properly trimmed in and taſtefully intermixed with other ſimilar plants, in the fronts and more conſpicuous parts.

SANTONES, in *Ancient Geography*, a people of Gaul, placed by Strabo near the Garonne, whoſe capital was of the ſame name. They were the inhabitants of the Saintongs.

SANTONICUM, in *Botany*, *Semen ſanctum* of the old writers, or holy ſeed. See Artemisia.

SANTONGE, in *Geography*, a river of Madagaſcar, which runs into the ſea, on the E. coaſt. N. lat. 18° 55′.

SANTORIN, formerly " Thera," and more anciently " Calliſta," ſignifying " the handſome," and deriving its preſent name from " St. Irene," to whom it was dedicated under the emperors of the Eaſt, is, in proportion to its extent, the richeſt and moſt populous of all the iſlands of the Archipelago. Emerged from the bottom of the ſea, it was afterwards partly ſwallowed up in the year 237 B.C. and ſeparated from Theraſia, a ſmall iſland now called " Aſproniſi." The ſpace contained between theſe two iſlands, and at preſent filled up by the ſea, made, as it is ſuppoſed, a part of the iſland of Thera, or of the large iſland, which, at the time of this revolution, aſſumed the form of a creſcent. Indeed the coaſt of that gulf, compoſed of ſteep rocks, black, calcined, and towering upwards of 300 feet above the level of the ſea, appears to be the edge of an enormous crater, the bottom of which has never been fathomed.

Olivier obſerves, that if we reflect on the conſiderable changes which Santorin has experienced in conſequence of the effects of a volcano, that has acted in it from a very remote era, we may diſcover four principal periods, very diſtinct from one another. At the firſt period the iſland was limited to mounts St. Stephen and St. Elias, as far as the environs of Pyrgos and Meſſaria, the only places that are not volcanized. The ſecond was the formation of the reſt of the iſland as far as Theraſia or Aſproniſi. The roadſtead did not then exiſt, and the iſland was as large again, of a rounded or oblong form. The third period was that of the ſudden and extraordinary depreſſion, which took place in the middle of the iſland, from which has reſulted the roadſtead. The fourth and laſt period was that of the formation of thoſe iſlands, which have ſucceſſively iſſued from the bottom of the ſea. If we conſider what Santorin muſt have been at its ſecond period, becauſe it is ſtill ſo at this day, we ſhall eaſily be perſuaded, that it muſt have been one of the fineſt and the moſt fertile iſlands of the Archipelago. Its circular form, a ſoil ſuſceptible of culture, which roſe by degrees from the borders of the ſea in the form of a calotte flattened at its top, St. Stephen and St. Elias, ſituated at one of the extremities, covered perhaps with verdure and wood; every thing concurred to render Santorin, if not a very beautiful iſland, at leaſt one of the moſt agreeable of the Archipelago; for on the ſuppoſition that this mountain was covered with vegetables, it contributed to the embelliſhment of the iſland; it furniſhed the inhabitants with wood, and probably afforded them a very copious ſpring of water. At the preſent day, notwithſtanding the ſmall extent of its territory being eſtimated at ſeven or eight leagues in circuit, though it wants a good harbour, and has only ciſtern water, Santorin is ſtill the moſt populous and the richeſt of all the ſmall iſlands of the Archipelago. On the ſouth part of Santorin was built, on the ſummit of a mountain, now called St. Stephen's mountain, a flouriſhing town, the capital of the iſland, bearing the name of Thera. Its ruins ſtill atteſt its ancient magnificence. Here was a temple dedicated to Neptune, and another to Apollo, to whom the whole iſland was conſecrated. Several inſcriptions and monuments, and particularly two large ſtatues, erected in honour of the emperors Marcus Aurelius and Antoninus, are mentioned by thoſe who have viſited the iſland, and indicate the populous and flouriſhing ſtate of this iſland under the Roman empire. On this iſland are reckoned five principal villages, in each of which is a primate; *viz.* Pyrgos, Apanomeria, Scauro, Emborio, and Acroteri. The primates, diſtinguiſhed by the name of "Epitropi," are charged with the police of their reſpective diſtricts, with convoking the inhabitants for public purpoſes, &c.; they are renewed every year, and appointed by the general aſſemblies of the people. Beſides theſe five principal villages there are ſeveral others of leſs note, ſuch as Merevelli, Vourvoulo, Phiro-Stephani, Phira, Gonia, Carterado, Votona, Meſſaria, and Megalo-Chorio. The population, according to Sonnini, conſiſts of 8000 or 10,000 inhabitants, but according to Olivier, exceeds 12,000 ſouls; almoſt all of the Greek church. In Tournefort's time, the number of Roman Catholics amounted to one-third of the inhabitants; but at preſent they do not form one-ſixth. Here are two biſhops, the one Latin and the other Greek, and two convents of nuns of the ſame deſcription. The Greek prieſts are numerous and poor. The inhabitants ſhare, in common with ſeveral other iſlands, the advantage of having no Turks among them. They are very laborious, diligent, and temperate. They apply themſelves with incredible activity to the culture of the vine and that of cotton. The women manufacture cloth of different qualities; they alſo knit caps and ſtockings, which they ſell to ſtrangers, and ſend to Ruſſia, and to ſome towns of Italy. Wine forms the principal revenue of the iſland; and the moſt eſteemed is that known under the name of " vino ſanto." At a proper age it is preferable to the beſt Cyprus wine. The quantity of wine annually exported is reckoned at a million of okes. Hence is alſo exported a ſmall quantity of brandy. Although the ſoil of the iſland is very dry, and far from fertile, the cotton-tree and the vine thrive extremely well. The land is not good enough for wheat. Only a little barley and ſome legumes are gathered. Fruit-trees are very ſcarce; the fig-tree and the almond-tree are almoſt the only ones cultivated. A few ſheep, goats, and hogs are bred. Aſſes and mules are made uſe of for draught; oxen are ſeldom employed for ploughing. No fuel is uſed beſides wood and charcoal, which are brought from the coaſt of Aſia, or the lentiſk, which the inhabitants cut at Hiera, and on ſome neighbouring iſlands. The partridge and the hare, though common in moſt iſlands of the Archipelago, are very ſcarce at Santorin; but quails are very plentiful; and theſe they are in the habit of parboiling, and preſerving through the winter in vinegar, or in vino ſanto.

The villages ſituated on the ſummit of the interſected ground of the roadſtead preſent a very ſingular aſpect. The houſes are cut into the pumice-ſtone, half built on the outſide of it, and placed one above the other, according to the diſpoſition of the ground. The part which is elevated on the outſide is levelled at the top like a terrace, by means of a mixture of lime-ſtone and pumice-ſtone ſifted. The pooreſt villages are merely an aſſemblage of caverns made in the pumice-ſtone. Pyrgos is the moſt conſiderable, the beſt built, and the richeſt village of the iſland: the air is pure and the proſpect agreeable. All the houſes have a ciſtern, which ciſterns are carefully filled in the rainy ſeaſon, as the inhabitants have no other water to drink or to give to their cattle. From the top of the mountains of Santorin may be diſcovered the iſland of Candia, diſtant about 18 leagues.

The road of Santorin is about ſeven miles in length from N. to S., and ſix in breadth from the little harbour of Phira to the iſland of Aſproniſi. It would be one of the beſt ports of the Archipelago, if ſhips could anchor there; boats anchor at San Nicolo. Two leagues to the S.W. of Santorin lie two iſlets, little known and unintereſting. They are named the "Great and Little Chriſtiana." N. lat. 36° 28′. E. long. 25° 36′. Sonnini. Olivier.

SANTOS, a town and bay of Braſil, one of the oldeſt European ſettlements in this country; it is ſituated in the government of St. Paul, on an iſland in a river about three leagues from the ſea; defended by a rampart on the ſide of the river on which it ſtands. In common with St. Paul's, it owes its origin to the firſt ſhipwreck on the iſland of St. Vincent. The river or lagoon has three or four fathoms water, and a muddy bottom. The harbour of Santos has a ſafe entrance, and is very ſecure. It is a ſtrait, having the iſland of St. Vincent to the eaſt, for the extent of half a mile, when it takes a different direction. Here is ſituated the port, which has good anchorage, with regular ſoundings towards the ſhore, which ſhoals gradually. The currents and eddies cauſe ſome inconvenience, and the high land occaſions much variation in the winds, which perplexes mariners on their entrance into the Narrows, but as the water is not deep, and the current far from ſtrong, a ſhip is ſafe the moment her anchor is let go, and by means of a boat and kedge ſhe may be placed in any ſituation which the pilot chooſes. The part called the Narrows is defended by two forts, on paſſing which there is a kind of lagoon, three or four leagues in length, almoſt full of mangroves, terminated by the town of Santos. This is a place of conſiderable trade, being the ſtore-houſe of the great captaincy of St. Paul's, and the reſort of many veſſels trading to the Rio de la Plata. It is tolerably well built, and its population, conſiſting chiefly of merchants, ſhop-keepers, and artificers, amounts to 6000 or 7000 ſouls. The ſituation is inſalubrious, as the country around it is low, woody, and frequently deluged with rain, on account of the high mountains in its vicinity, which impede the paſſage of the clouds. Several rivulets flowing from the foot of theſe mountains interſect the land in various directions, and unite in one great river a little above the town of Santos. The rice of this diſtrict, which is cultivated in great quantities, is conſidered the beſt in Braſil, and the bananas are equally noted. From this port, the Spaniſh territories, as well as Rio Grande, receive a great proportion of their ſugar, coffee, rum, rice, mandioca, indigo, &c.; in return they bring hides and tallow, which are generally exported hence to Europe. As Santos is the embarking place of St. Paul's, its intercourſe with that town is very conſiderable. In the courſe of a day ſeveral hundred mules often arrive loaded with the produce of the country, and return with ſalt, iron, copper, earthen wares, and European manufactures. For the traffic of its immediate vicinity, it has the convenience of water-carriage; its river being navigable about 20 miles, up to Caberton, where an officer with a guard of ſoldiers is ſtationed to receive the king's duties for the repair of the roads and other public purpoſes. Santos is diſtant 31 miles S.S.E. from St. Paul's. S. lat. 24°. W. long. 46° 26′. Mawe's Travels in the Interior of Brazil.

Santos, an iſland on the W. coaſt of Brazil, about ſix leagues in circumference. S. lat. 24°.

Santos, *Los*, a town of South America, in the province of Cordova; 50 miles E. of Cordova.—Alſo, a town of South America, in the province of Panama, on the W. ſide of the bay of Panama; inhabited by a mixture of Spaniards and Indians. N. lat. 8°. W. long. 81° 8′.

SANTRIEH, a ſandy deſart of Africa, in Tripoli, ſituated on the S. of Siwah, in which was a temple of Jupiter Ammon.

SANTSI, in *Botany*, a name given by the Chineſe to a plant famous among them for its medicinal virtues.

It is deſcribed by the writers who have been on the ſpot in ſo remarkable a manner, that it cannot eaſily be miſtaken, provided their deſcriptions are juſt. They tell us that it grows wild on the mountains in ſome of the provinces of China, and that each root of it uſually ſends up eight ſtalks, the middle one greatly higher than the reſt.

They have no branches, and have each only three leaves at the top, and the middle ſtalk bears cluſters of flowers. The root they ſay is four inches thick, and puſhes out ſeveral ſide-branches of the thickneſs of a finger. The bark of theſe roots is rough and brown, and their internal parts ſoft and yellow.

The ſmall roots only are uſed in medicine, the great ones being ſeldom found. The plant flowers in the month of July, and the ſpring ſeaſon is accounted the beſt for taking up the roots.

The way of multiplying the plant is to cut the great root into ſlices tranſverſely, and plant theſe an inch deep in a good ſoil; they will ſoon ſhoot up the natural number of branches, and in three years the plant will grow to its utmoſt perfection.

The great uſe of the plant is in hæmorrhages, in which caſe it is ſaid to be almoſt infallible.

SANTVEIT, in *Geography*. See St. Veit.

SANTUTA, or Sanguta, in *Ancient Geography*, a town of Aſia, in the Greater Armenia. Ptolemy.

SANUA, a town of Aſia, in Albania. Ptolemy.

SANVITALIA, in *Botany*, ſo named by Lamarck, without any explanation.—Journ. d'Hiſt. Nat. v. 2. 176. Dict. v. 6. 508. Illuſtr. t. 686. Cavan. Ic. v. 4. 30. Willd. Sp. Pl. v. 3. 2190. Ait. Hort. Kew. v. 5. 109.—Claſs and order, *Syngeneſia Polygamia-ſuperflua*. Nat. Ord. *Compoſitæ oppoſitifoliæ*, Linn. *Corymbiferæ*, Juſſ.

Gen. Ch. *Common Calyx* hemiſpherical, imbricated, with ovate, concave ſcales. *Cor.* compound, radiated. Florets of the diſk tubular, perfect, with an erect, five-cleft limb; thoſe of the radius about fourteen, female, ovate, emarginate, ſpreading. *Stam.* in the perfect florets, filaments five, capillary, very ſhort; anthers united into a cylinder. *Piſt.* Germen in the perfect florets, oblong, compreſſed; ſtyle ſimple; ſtigmas two, ſpreading: germen in the female ones priſmatic, triangular, acute at the baſe, crowned at the top with three ſmall ſpines, the innermoſt of which is erect, the reſt reflexed; ſtyle and ſtigma as in the former. *Peric.* none, except the unchanged calyx. *Seeds*, of the radius, priſmatic, ſmooth, crowned with two reflexed, and one erect, briſtles; thoſe of the diſk wedge-ſhaped, compreſſed, encompaſſed with a vertical, membranous, toothed border, which gradually diſappears as the ſeeds approach the radius. *Recept.* chaffy.

Eſſ. Ch. Receptacle chaffy. Seeds of the radius crowned with three briſtles; thoſe of the middle of the diſk winged. Calyx imbricated.

1. S. *procumbens.* Trailing Sanvitalia. Willd. n. 1. Ait. n. 1. (S. villoſa; Cavan. Ic. v. 4. 31. t. 351.)—Stem procumbent. Leaves ovate, entire.—Native of Mexico, from whence it was brought to the Spaniſh gardens, and from thence introduced to thoſe of France, England, Germany, &c. The plant proves a hardy annual, flowering in July and Auguſt. The *ſtem* is much branched in an oppoſite manner, downy, like the ſtalked, oppoſite, three-ribbed *leaves.* *Flowers* terminal, ſolitary, encompaſſed with a few leaves; their diſk purple, almoſt black; their radius yellow; ſo that they reſemble ſome of the ſmaller *Rudbeckiæ.*

2. S. *helianthoides.* Upright Sanvitalia. Willd. n. 2.—"Stem erect. Leaves ovate-oblong; ſerrated at the extremity."—Native of Peru. The *flowers* of this are ſaid to be as large as thoſe of *Helianthus giganteus.*

SANUTO, Marino, in *Biography,* ſurnamed Torſello, a noble Venetian and traveller, was born in the 13th century at Rivo-Alto, in the ſtate of Venice. He paſſed his youth in five different voyages to the Eaſt; in which he viſited Armenia, Egypt, Cyprus, Rhodes, Paleſtine, and the neighbouring countries. Upon his return to Venice he compoſed a work, entitled "Liber Secretorum Fidelium Crucis:" in this he gave an exact deſcription of theſe provinces, with the manners of the people; alſo a relation of the changes of government, and the wars undertaken to recover them from the infidels. When his work was completed he travelled through Europe, with the view of engaging its ſovereigns to concur in a new attempt: in 1321 he offered his book to pope John XXII. at Avignon, with four maps of the parts deſcribed, but it was not accepted. He was living in the year 1329, but it is not known how much longer he ſurvived. The work of Sanuto, with his letters, was publiſhed in 1611 by Bongars, in the "Geſta Dei per Francos." The information contained in it has always been conſidered as highly valuable, and by ſome writers it has been regarded as "a complete treatiſe of the commerce and navigation of that age, and even of remoter times." There was another perſon of celebrity of the ſame name, who lived to the year 1535, and was much employed in public affairs by the republic of Venice. He wrote an ample chronicle of that ſtate from its origin to 1501, which has been publiſhed in Muratori's Collection of the Italian Hiſtorians.

SANXAY, in *Geography,* a town of France, in the department of the Vienne; 6 miles N.W. of Luſignan.

SAN-YA, a town of Corea; 13 miles W. of Tſintcheou.

SAN-YAM-LION, a town of Chineſe Tartary. N. lat. 41° 7′. E. long. 103° 3′.

SAN-YENG, a town of Africa, in the kingdom of Kayor, peopled by the Portugueſe.

SAN-YUEN, a town of China, of the third rank, in the province of Chen-ſi; 15 miles S. of Yao.

SANZA, a town of Naples, in Principato Citra; 7 miles N. of Policaſtro.

SANZIO, Raffaello, in *Biography.* See Raphael.

SAO, in *Geography,* a town of China, of the third rank, in Se-tchuen; 36 miles S.S.W. of Soui-tcheou.

SAOCES, in *Ancient Geography,* a high mountain in the iſland of Samothrace. Pliny.

SAOCORAS, a river of Aſia, in Meſopotamia, according to Ptolemy. It diſcharged itſelf into the Euphrates. This is the river Maſca of Xenophon.

SAOL, in *Geography,* a river of Africa, in the kingdom of Adel, which runs into the Arabian gulf, over-againſt the iſland of Mata.

SAON, a town of France, in the department of the Drome; 4 miles S.S.E. of Creſt.

SAONA, in *Ancient Geography,* a town of Italy, in the Cottian Alps.

Saona, in *Geography,* an iſland near the S. coaſt of Hiſpaniola, eighteen miles long and three broad, diſcovered by Columbus in the year 1494, abounding with pleaſant woods and paſtures, but now uninhabited, and frequented only by fiſhermen, at the time when the turtles come on ſhore to lay their eggs. The N. and S. ſides of the iſland are foul and rocky; nor is the E. ſide, where ſhips may ride in ſeven or eight fathoms water, well ſheltered from the winds. N. lat. 18° 8′. W. long. 69° 42′.—Alſo, a river of Naples, which runs into the Mediterranean; 12 miles W. of Capua.

SAONE, a river of France, which riſes about ſix miles E. from Darney, in the department of the Voſges, and joins the Rhone at Lyons.

Saone, *Upper,* one of the eleven departments of the eaſtern region of France, formerly Amont, in N. lat. 47° 30′, is bounded on the N. by the department of the Voſges, on the E. by that of the Upper Rhine, on the S. by the departments of the Doubs and Jura, and on the W. by thoſe of the Cote d'Or, and Upper Marne, containing 5582½ kiliometres, or 235 ſquare leagues, and 287,461 inhabitants, in 3 circles or diſtricts, 27 cantons, and 640 communes. The circles are Gray, including 81,286, Veſoul, 102,238, and Lure, 103,937 inhabitants. According to Haſſenfratz, its extent is 26 French leagues in length and 17 in breadth; the number of circles is 6, and that of cantons 48, and the population conſiſts of 264,111 perſons. The contributions in the 11th year of the French era amounted to 2,199,713 francs, and the expences, adminiſtrative, judiciary, and for public inſtruction, were 215,983 fr. 94 cents. Veſoul is the capital. The ſoil, moſtly level, yields grain, wine, hemp, fruits, and paſtures. Here are conſiderable foreſts, mines of iron, ſalt and coal quarries, mineral ſprings, &c.

Saone *and Loire,* one of the eleven departments of the eaſtern region of France, compoſed of Autunois, Charollais, Chalonnais, and Maconnais, in N. lat. 46° 30′, is bounded on the N. by the department of the Cote d'Or, on the E. by the department of the Jura, on the S. by the departments of the Ain, and the Rhone and Loire, and on the W. by thoſe of the Allier and the Nyevre. Its extent is 8912½ kiliometres, or 451 ſquare leagues, and its population conſiſts of 447,565 perſons. It is divided into 5 circles, 48 cantons, and 609 communes. The circles are Autun, comprehending 66,851, Charolles, 104,645, Chalons-ſur-Saone, 105,173, Louhans, 74,658, and Maçon, 96,238 inhabitants. According to Haſſenfratz, it contains 34 French leagues in length and 24 in breadth, 7 circles, 90 cantons, and 442,600 inhabitants. Its contributions in the 11th year of the French era amounted to 4,376,459 francs; and its expences, judiciary, adminiſtrative, and for public inſtruction, to 308,219 fr. Its capital is Maçon. This department is interſected with mountains, hills, vallies, and plains; the ſoil in general is fertile, yielding wheat, rye, fruits, wine, and paſtures. Here are foreſts, quarries of marble, mines of iron, coal, mineral ſprings, &c.

SAORGIO, a town of France, in the department of the Maritime Alps, and chief place of a canton, in the diſtrict of Monaco, ſituated on a rock, and on one ſide nearly encloſed by the Roia, a river mentioned by Lucian and Pliny, and on the other ſide by the Bendola, thus forming a peninſula. The place contains 1720, and the canton 1720 inhabitants,

bitants, on a territory of 127½ kiliometres, in one commune. On the oppoſite ſide of the Roia is a ſharp rock, nearly inacceſſible, and inſulated on all ſides, having on its ſummit an ancient fortreſs called "Malemort," and defended by three towers. Near the town is a fort, ſuppoſed impregnable, denominated St. George, in which is placed a garriſon. It contains two parochial churches, and three others; 17 miles N.E. of Nice.

SAORSKERA, a town of Thibet; 70 miles N.N.W. of Sirinagur.

SAOUADI, a burgh of Egypt, above *Minieh*, where the grottoes of the Thebais commence, ſo famous for the auſterity of the Anchorites, who retired hither in the firſt ages of the church. They extend the ſpace of 20 leagues even over-againſt *Manfelout*. They are quarries dug by the Egyptians, and the hieroglyphics obſervable on them confirm their antiquity. A foreſt of date-trees commences above Saouadi, and deſcends to the banks of the river.

SAOULY, a town of Hindooſtan, in Viſiapour; 8 miles N. of Currer.

SAOUNT, a town of Hindooſtan, in Guzerat; 21 miles N.N.E. of Godra.

SAOURGAM, a town of Hindooſtan, in the circar of Aurungabad; 65 miles E.S.E. of Aurungabad.

SAP, in ſpeaking of plants, denotes *juice.*

The word is formed from the Saxon, *ſæpe*, which ſignifies the ſame; and that, according to Mylius, from the Greek οπος, *ſuccus*, *juice.* Whence alſo the Latin *ſapa*, uſed for an inſpiſſated juice. See Rob.

Sap, in *Vegetable Phyſiology*, is properly that nearly uniform fluid, like the blood of animals; from whence, principally by the action of light, air, and heat upon their leaves, their various ſecreted fluids are elaborated. (See Circulation *of Sap; Leaves, and their Functions*, under Leaf; and Secretions *of Vegetables.*) The term *Sap* is indeed vulgarly, though erroneouſly, applied to theſe very ſecretions themſelves; as the milky juice of the fig, ſpurge, &c.; the yellow liquor in the ſtalks of celandine, *Sanguinaria*, and ſimilar plants.

Sap, in *Agriculture* and *Gardening*, the juice or blood which circulates in the veſſels of vegetable plants and trees, and by which they are nouriſhed.

It is obſerved by the author of Phytologia, that the ſap-juice which is abſorbed from the earth by the roots of plants, and conſtitutes their nouriſhment, is ſimilar to the chyle of animals, and conſiſts of water, ſugar, and mucilage, with other tranſparent ſolutions, as thoſe of carbon, phoſphorus, and calcareous earth. And though it has been proved by the experiments of ſome philoſophers, that vegetables can extract or compoſe all theſe ſubſtances from air and water alone; yet ſome materials contribute more to the production of this vegetable chyle or ſap-juice than others, ſuch as the recrements of dead vegetable and animal ſubſtances. And Dr. Hooper, in his "Obſervations on the Structure and Economy of Plants," ſtates, that two theories have been applied to the motion of the fluids in vegetables; the advocates of the one maintaining, that the vegetable ſap had a circulation analogous to the blood of animals; while others affirmed, that it only aſcends in the day, and deſcends again at night. In order, however, to prove the former, it would be neceſſary to demonſtrate in plants, as in animals, a centre from which the circulation begins, and to which it again returns; but no ſuch centre has ever been diſcovered by any naturaliſt. But as it has been proved that the roots and leaves attract a nutritious juice, and communicate it to the other parts of the plant; it is evident that it muſt be carried upward and downward; and from ſeveral experiments, it appears as ſatisfactorily proved as its nature will admit, that the humours attracted by the leaves deſcend at night, and thoſe by the root aſcend by day; for the leaves by night inhale dew, and ſeldom perſpire vapour, and *vice verſâ.* And he ſuggeſts, that it does not appear improbable, although it is not proved by ocular demonſtration (which is the only way to aſcertain the fact), that a plant is conſtructed with ſpecial veſſels for the aſcending and deſcending juices. But if a vegetable be not ſupplied with theſe ſpecial veſſels for the aſcent and deſcent of the ſap, it muſt be performed in the ſame veſſels, which at one time muſt therefore raiſe, and at another depreſs it. What would, however, ſeem to ſtrengthen the opinion of its being thus moved, is, that nature has made no apparent proviſion whereby the ſap might be prevented from deſcending, in the very ſame veſſels through which it aſcends. In the veſſels of animals, whoſe office it is to return a fluid, there is an apparatus called valves, which effectually prevent the contained fluid from going back. Theſe valves are entirely wanting in the veſſels of vegetables. The above idea is to be conſidered as purely conjectural, but may at ſome future time be aſcertained.

It is alſo further ſtated, that the experiments which prove that the nutritious juice, taken in by the abſorbent veſſels of the radicles, aſcends through the veſſels into the leaves and flowers, are the erection of flaccid plants, if water be poured on the ground, or if the root only be put into water: and the colouring of flowers, by putting plants into water impregnated with a colouring principle. And it is remarked, that although the aſcending ſuccous veſſels have been ſeen conveying the coloured fluid, it has never been carried ſo far as to enable the inquirer to detect whether the fluid was returned by the ſame or by ſpecial veſſels; yet he is very much inclined to favour the latter hypotheſis or opinion.

And that the veſſels of plants are endowed with vital power and irritability, and, after the manner of animal veſſels, alternately diminiſhed and augmented in diameter, would appear, he thinks, firſt, from the aſcent of the contained fluid. For this could not be returned again by the capillary attraction of the radicles, or the heat rarefying the fluids, or the internal velocity of the veſſels. Secondly, from the increaſed and diminiſhed motion of the veſſels, from various ſtimuli; for ſome increaſe the motion of the fluids, and others diminiſh it.

It is conceived, that without this contraction and dilatation, the very rapid circulation of the common juice or ſap of plants could not take place. It is obſerved, that the motion of ſap varies in every plant: this depends upon the irritability of the veſſels: thus it is the quickeſt in thoſe plants which are the moſt irritable, and *vice verſâ.* And the contraction of the veſſels is evident in moſt of the euphorbia; thus, if a branch be cut when freſh, a milky juice will flow out, and continue for ſome time. It is ſuppoſed that the cauſe of the contraction depends upon the irritability of the fibres compoſing the veſſels; hence it follows that the efflux of the milky juice will not take place when the veſſels of the plant are deprived of that property. And the writer concludes by obſerving, that the ſtimuli by which the irritable fibres are excited into motion, and diminiſhed and augmented in diameter, are water, a requiſite degree of heat, vital air, light, electric matter, and artificial ſtimuli, as nitre, ſal ammoniac, ſulphur, &c.

But Dr. Darwin, after ſhewing the great analogy that exiſts between the circulation in animals and vegetables, and offering various facts in illuſtration of it, preſents us with the following recapitulation of his theory. We may finally conclude, he thinks, that the circulation of vegetables is formed, like that of animals, by the irritability of their veſſels to the ſtimulus of the fluids, which they abſorb and protrude; that is, that the extremities of the branching veins of the leaves forcibly abſorb the vegetable blood from the extremities of their arteries, which correſpond with the pulmonary arteries of animals; and that it is thus puſhed on to the footſtalk of the leaf, where the veins unite, and branching out again take the office of an artery, like the aorta in fiſh, without perceptible pulſation. The ſap or blood in this artery is puſhed forwards by that behind it, the motion of which was given by the power of abſorption in the pulmonary vein, till it arrives at the extremities of theſe aortal branches, and is there again forcibly abſorbed by the terminations of the correſpondent veins, and again puſhed forwards to the caudex gemmæ, and to the footſtalk of the leaf, like the blood in the vena cava of animals. And further, that a part of this blood is at the ſame time forcibly ſelected and abſorbed by the various glands for the purpoſes of the neceſſary ſecretions, excretions, or nutrition; and the ſap-juice or chyle and the water, which is acquired by the abſorbent veſſels, that correſpond to the lacteal and lymphatic veſſels of animals, is carried, as well as the remainder of the juice or blood, to the footſtalk of the leaf. Here theſe abſorbent veſſels are believed to puſh their contents into the veins correſpondent to the vena cava of animals, and which now uniting without the intervention of a heart, aſſume the name and office of the pulmonary arteries; and branching out upon the leaf expoſe the returning blood and new ſap-juice to the influence of the air. And finally, all this is accompliſhed by the power of abſorption, as in the aortal arteries, and vena portarum of fiſh, which is excited into action by the irritability of the mouths of theſe veſſels to the ſtimulus of the fluids which they abſorb. And ſecondly, that a circulation of vegetable juices in every reſpect ſimilar to that in the common leaves above deſcribed, exiſts in the bracteas or floral leaves, except that the leaves of the leaf-bud prepare their juices for the production and nouriſhment of other buds in their boſoms; but theſe bracteas, which are the lungs of the fructification, prepare their juices for the nouriſhment of the pericarp and its included ſeeds, but not for that of the corol with its anthers and ſtigmas, as theſe in many flowers exiſt before the production of the floral-leaves, as in colchicum and hamamelis. Thirdly, that another circulation of vegetable juices exiſts in the ſexual parts of flowers, including the nectaries and corols. In the corols the vegetable blood is expoſed to the influence of the air, and prepared for the ſecretion of honey, which is the food or ſupport of the anthers and ſtigmas. In theſe the progreſſion and circulation of the fluids muſt be cauſed by the power of abſorption, which he has ſhewn to be a greater force than that of the heart of animals. Fourthly, that the progreſs of the fluids imbibed by vegetable lacteals from the earth, and by their lymphatics from the air, and from the ſurfaces of their internal cells, is evidently begun and carried on by the power of abſorption of their terminating mouths, and the annular contraction of their ſpiral fibres. Fifthly, that wonderful force with which the ſap-juice is drank up and protruded in the umbilical veſſels, which expands and nouriſhes the buds of trees, and which forms the wires of ſtrawberries above ground, and thoſe of potatoes under ground, with the great variety of bulbs and root-ſcions, is to be aſcribed to this ſingle principle of abſorption. Except that ſome of theſe long cylindrical veſſels are evidently compoſed of a ſpiral line, and which may, by the annular contraction of this ſpiral line, carry the fluids they have abſorbed, with great force, either in a forward or retrograde direction. And, ſixthly, he finally concludes that the branching abſorbents of the roots unite at the caudex of each bud, before it riſes out of the earth and forms a large trunk, which paſſes up the alburnum of the tree to the upper caudex of the bud at the footſtalk of the leaf, and may be compared to the receptaculum chyli of animals extended to ſo great a length; and that it there joins the great returning vein, which alſo is compoſed of the branching veins of the roots uniting at the lower caudex of the bud, and aſcending terminates at the upper caudex of it, where it becomes again branched, and forms the pulmonary artery.

And alſo that the aorta or great artery deſcends, he ſuppoſes, along with the great vein, or vena cava above-mentioned; and branching in the roots below, and on all other parts of the individual leaf-bud, performs the offices of ſecretion and nutrition. The pulmonary arteries and veins belong to the leaf; the former expoſe the blood to the atmoſphere beneath a thin moiſt pellicle, whence it becomes oxygenated, and probably acquires ſome warmth, and phoſphoric acid, and the ſpirit of vegetable life. The latter collect the aerated blood by their branches, and convey it to the upper caudex of the bud, at the footſtalk of the leaf, where they become the aorta or great artery above-mentioned. And that the ſides of the long abſorbent trunks, or receptacles of chyle, which riſe from the lower caudex, and terminate in the upper caudex of each bud, as well as the long trunks of the umbilical veſſels, evidently conſiſt of a ſpiral line, as well as thoſe trunks of abſorbents, which imbibe aqueous fluids from the air, and a part of their perſpirable matter on the ſurfaces of the leaves. But whether the pulmonary and aortal arteries or great veins conſiſt of a ſimilar ſtructure is not yet aſcertained.

It may alſo be obſerved, that in ſupport of this ingenious hypotheſis the reſults of different experiments made by the writer are given; and the whole is curious and intereſting to the inquirer.

Since the above, much has been done in this difficult inquiry by chemical inveſtigation and the labours of ſeveral enlightened vegetable phyſiologiſts, among whom, the illuſtrations afforded by Mr. Knight are particularly intereſting. The author of the work on "Agricultural Chemiſtry" ſtates, that in "all plants there exiſts a ſyſtem of tubes or veſſels, which in one extremity terminate in roots, and at the other in leaves. It is by the capillary action of the roots that fluid matter is taken up from the ſoil. The ſap in paſſing upwards becomes denſer, and more fitted to depoſit ſolid matter: it is modified by expoſure to heat, light, and air in the leaves; deſcends through the bark; in its progreſs produces new organized matter; and is thus in its vernal and autumnal flow, the cauſe of the formation of new parts, and of the more perfect evolution of parts already formed." But that though the roots may imbibe fluids from the ſoil or ground in the above manner, this power of capillary attraction alone is not ſufficient to account for the rapid elevation of the ſap into the leaves, as has been fully ſhewn by the experiment of Hales with a vine branch, for attraction of this nature can only be exerted by the ſurfaces of ſmall veſſels, and conſequently never raiſe a fluid into tubes higher than the veſſels themſelves. Mr. Knight, who has found that the ſilver grain in the alburnum of trees, &c. is elaſtic and contractile, ſuppoſes that the change of volume produced in it by the change of temperature or the ſtate of heat, is one of the chief cauſes of the aſcent of the ſap, as its fibres appear conſtantly to expand during the morning, and contract in the time of night; the riſe in this fluid, therefore, materially depending upon the agency of heat, as already ſeen. This ſilver grain is moſt diſtinct, it is ſaid, in foreſt trees, but that annual ſhrubs have even a ſyſtem of fibres ſimilar to it; as the analogy of nature is conſtant and uniform, ſo that ſimilar effects are moſtly produced by a ſimilarity of organs or parts.

Theſe concluſions are rendered extremely probable by the facts which the above acute phyſiologiſt has adduced in their ſupport. He found that a very trifling increaſe of temperature or heat was capable of cauſing theſe ſilver-grained fibres to ſeparate from each other, and a very ſlight diminution of it to bring on their contraction. That the ſap always riſes the moſt ſtrongly in ſpring and autumn, when the temperature is liable to vary; and that, if it be conceived that in expanding and contracting, the elaſtic fibres of the ſilver grain exert a preſſure upon the cells and tubes which contain the fluid abſorbed by the capillary attraction of the roots, this fluid muſt conſtantly move upwards towards the extreme points where the ſupply is wanted. And further, that as water has been ſhewn to be capable of being raiſed to almoſt any height by a trifling force, when the preſſure is removed by multiplied diviſions in the column of the fluid, the ſame principle, it is ſuppoſed, may operate in promoting the aſcent of the ſap in cells and veſſels of plants which have no rectilineal communication, and which every where oppoſe difficulties to the perpendicular preſſure of the ſap-juice. Several other intereſting facts and circumſtances likewiſe exiſt upon this ſubject, as well in regard to its aſcent as that of its deſcent in different caſes; the latter of which is ſuppoſed to materially depend upon gravitation, though the facts in reſpect to it are, on the whole, by no means ſo ſatisfactory or concluſive as thoſe of the other.

Sir Humphrey Davy has found that the ſap of plants, in general, is a very compound fluid, and that it contains moſt ſaccharine, mucilaginous, and albuminous matter in the alburnum; but moſt of the tanning principle or tannin, and extract in the bark. That the cambium, which is the mucilaginous fluid lodged between the wood and the bark, and which is eſſential to the formation of new parts, appears to be derived from theſe two kinds of ſap, and is probably a combination of the mucilaginous matter of one, with the aſtringent matter of the other, in a ſtate fitted to become organized by the ſeparation of its watery or more liquid parts. Theſe and other matters have alſo been found in the alburnous ſap of different ſorts of trees and plants by other experimenters. The fluids contained in the ſap veſſels of wheat and barley, afforded in ſome trials made by Mr. Davy, mucilage, ſugar, and a matter which coagulated by heat; the laſt of which was moſt abundant in this ſort of grain.

The knowledge of theſe facts, circumſtances, and reaſonings, may lead the farmer and gardener to a better and more perfect cultivation of different plants as crops, and enable them to underſtand their nature and economy in a more full and complete manner, ſo as to be capable of managing them in the moſt advantageous ways for the purpoſe of produce and utility. See on this ſubject the article CIRCULATION *of the Sap.*

SAP, in *Chemiſtry*. Vauquelin has made an uſeful though incomplete analyſis of the ſap of ſeveral of the common trees, chiefly with a view to the ſaline and earthy contents, and has diſcovered the preſence of acetite of potaſh in all of them, which entitles the acetous acid to be ranked among the native acids, as well as being a product of fermentation.

The following is a ſhort extract of Vauquelin's experiments. An. Chim. tom. xxxi.

Sap of the Elm.—This juice, which was collected in the ſpring, has a yellowiſh-red colour, and mild and mucilaginous taſte, and ſhews no exceſs of acid.

Ammonia produces an abundant yellowiſh precipitate, reſoluble in acids with efferveſcence, and which conſiſts chiefly of carbonated lime with a little vegetable matter. Barytic and lime-water produce the ſame. Oxalic acid and nitrate of ſilver give a white precipitate, ſulphuric acid excites a ſtrong efferveſcence, and the gas has a powerful ſmell of acetous acid. Oxymuriatic acid gives a yellow precipitate, and alcohol a flocculent one. This liquor was analyſed in the following way; 1039 grammes were heated in an open veſſel, and during evaporation a brown earthy matter gradually fell down and fixed to the ſides of the veſſel. When nine-tenths of the liquid were waſted by ſlow evaporation the reſidue was cooled, and the brown earth was ſeparately treated with muriatic acid, which diſſolved a portion with efferveſcence, and left an inſoluble portion, which, when waſhed and dried, amounted to 637 grammes. The muriatic ſolution, decompoſed by carbonated potaſh, gave 0.5 grammes of carbonate of lime. The evaporated liquid from the earthy depoſit ſtill contained much flocculent matter, which was ſeparated by filtration, and weighed, when dry, 43 grammes, part of which diſſolved in muriatic acid, and produced by precipitation .318 grammes of carbonate of lime, and .425 of inſoluble vegetable matter remained. The concentrated and filtered liquor was finally evaporated to dryneſs, and gave 9.553 grammes of a grey extract, ſtrongly deliqueſcent, and with a pungent ſaline taſte. Sulphuric acid added to it gave a ſtrong ſmell of radical vinegar, and a notable quantity of this latter acid was procured by diſtilling the extract with ſulphuric acid.

The author eſtimates the above 1039 grammes of ſap to contain .795 grammes of carbonate of lime; 1.06 of vegetable matter; and 9.24 of acetite of potaſh. The latter, however, is probaby given by eſtimation from the quantity of acetous acid obtained by diſtillation, and is therefore liable to much uncertainty, and if the particulars of the analyſis are correctly given, the carbonate of lime ought to be .818 (.318 + .5) inſtead of .795. The accuracy of theſe numbers, however, is of leſs importance, as there is no doubt that the varieties of ſoil, ſeaſon, climate, &c. influence much the compoſition of the ſap.

Sap of the Aſh.—This juice had a reddiſh-brown colour, and an aſtringent taſte, like the infuſion of tan. With reagents it was ſimilar to the laſt, except that ſulphate of iron was blackened with this ſap, and animal jelly gave a precipitate. It contained a little acid in exceſs, a calcareous ſalt, gallic acid and tan, beſides a vegetable extract, and a ſlight trace of ammonia. The extract left after evaporation to dryneſs and calcination was found to contain a little alumine.

Sap of Hornbeam.—This juice is colourleſs and limpid in its natural ſtate, has a ſoft and decidedly ſaccharine taſte, a ſmell reſembling whey, and a conſiderable exceſs of acid. When expoſed to the air undiſturbed for a length of time, it firſt becomes milky, and throws up a ſlight down on its ſurface, then it parts with much carbonic acid, afterwards it acquires a vinous ſmell and taſte, and at the ſame time its acidity increaſes, and it becomes limpid from the ſubſidence of ſome kind of mucilage. In about five or ſix weeks, in the ſummer time, this ſpontaneous acidity is at its higheſt, after which it ſenſibly diminiſhes, a thick, white, mucilaginous mould forms on the ſurface, all taſte of an acid is gone, and the liquor only taſtes mouldy. The ſame ſubſtance, kept in a cloſed bottle, remains apparently but little altered, except that there is ſo great a generation of acetous acid, that the liquor would make by itſelf a good ſubſtitute for vinegar in the ſeaſoning of food.

Sap of Birch.—This is a colourleſs ſaccharine acid liquor, which is fermentable in its natural ſtate, and its extract left after evaporation is equally ſo. The author attempted, but without ſucceſs, to extract ſugar from it by the uſual means.

Though this excellent chemiſt has not mentioned it in this place, it is probable that theſe ſaps alſo contain a quantity of *malat of lime*. Aikin's Dictionary.

SAP, *Circulation of the*. See CIRCULATION *of the Sap*.

SAP-*flow*, in *Rural Economy* and *Gardening*, a diſeaſed ſtate of vegetables, which, according to Dr. Darwin, takes place when the alburnum or ſap-wood of trees is wounded in the vernal months, as in birch and maple, and conſiſts of a ſaccharine and mucilaginous fluid ſimilar to the honey-dew, and which is often very troubleſome, when vines in hot-houſes are pruned too late in the ſeaſon, as the whole branch is liable to bleed to death, owing thus to the loſs of the ſap-juice, which ought to be employed in nouriſhing the buds, and expanding their leaves. And it is added, that when ſome perennial plants have riſen but a certain height from the ground, if their ſtems are much wounded, or cut off, the roots are liable to bleed to death from this diſcharge of umbilical fluid, or ſap-juice, which ought to have nouriſhed and expanded the new buds and foliage; as may be ſeen in cutting down the cow-parſnip, ſpondylium heracleum, in April; and on this account it has been recommended to mow down thiſtles, and other weeds, which are troubleſome from their numerous increaſe, early in the ſpring; as many of them will then die, and the reſt be much weakened by the ſap-flow, which attends their wounds at that ſeaſon. The ruſh may often be treated in this way with advantage.

Further, it is likewiſe obſerved, that in reſpect to trees another period of ſap-flow is ſaid to exiſt, when the new buds are forming after Midſummer. Whence wounds at this ſeaſon alſo muſt be injurious. Where this loſs of ſap-juice occurs in hot-houſes, various applications have been recommended by gardeners. The writer ſuſpects that a bit of ſponge bound upon the end of the cut branch, or on the wound, by means of ſome elaſtic bandage, muſt be the moſt certain application; or a wire twiſted round the end of the branch cut off, ſo tightly as to ſtrangulate the whole circulation of juices, and conſequently deſtroy the part above the ligature. This may ſuggeſt to the farmer the impropriety and miſchief of ſuffering trees or hedge-plants to be cut over or cropped at ſuch periods, as well as the performing of different other works of this nature when the ſap is flowing in the plants. See SAP.

SAP, *Procurement of the, for economical Uſes*. See TAPPING.

SAP, or *Sapp*, in *Building*. To ſap a wall, &c. is to dig or open a trench in the ground at the foot of a wall, &c. ſo ſo as to bring it down all at once for want of ſupport.

To ſap, according to Daviler, is to undermine a work with hammers, pickaxes, mattocks, &c. *viz.* a bank, or hillock, by propping it up, digging underneath it, and then burning the props or ſtays; or a rock, by digging a mine underneath it.

To demoliſh the thick, firm walls of old caſtles, &c. ſapping is much the readieſt way.

SAP, in the *Military Art*, denotes a work carried on under cover of gabions and faſcines on the flank, and mantelets or ſtuffed gabions on the front, to gain the deſcent of a ditch, counterſcarp, or the like.

It is performed by digging a deep trench, deſcending by ſteps from top to bottom, under a corridor, carrying it as far as the bottom of the ditch, when that is dry; or as far as the ſurface of the water, when wet.

When the covert-wall is well defended by muſketeers, the beſiegers make their way down into it by ſapping. (See *Plate* V. *Fortification*, *fig.* 4. *n.* 5.) When they are got near the foot of the glacis, the trench is carried on directly forwards; the workmen covering themſelves with blinds, woolpacks, ſand-bags, and mantelets upon wheels. They alſo make epaulements, or traverſes, on each ſide, to lodge a good body of men.

The ſap is uſually made five or ſix fathoms from the ſaliant angle of the glacis, where the men are only covered ſideways: for which reaſon they lay planks over-head with hurdles, and earth above them.

When they have forced the enemy to quit the covert-way, the pioneers immediately with ſand-bags, woolpacks, or other fences, make a lodgement, and cover themſelves, as well as they can, from the fire of the oppoſite baſtion.

There are ſeveral ſorts of ſaps; as the ſingle, which has only a ſingle parapet; the double, having one on each ſide; the flying, made with gabions, &c.

SAP *Faggots*, are a kind of faſcines, about three feet in length.

SAP-*Green* is a yellow-green prepared from the concreted juice of buckthorn-berries, and uſed in water-painting. See RHAMNUS, and *Colours from* FRUITS.

Sap-green is very uſeful for ſome purpoſes as a waſhing colour, as it makes a ſtrong and pretty bright ſtain. It may be prepared in the following manner: Take any quantity of buckthorn-berries before they are ripe, and preſs out the juice in ſuch a preſs as is uſed for making cyder or verjuice, or by any other method. Strain this juice through flannel, and then let it ſtand to ſettle; and when it has ſtood for a proper time, decant off the clearer part of the fluid from the ſediment. Put this juice into a ſtone or earthen veſſel, and evaporate it till it begins to become of a thick conſiſtence; then remove it into a ſimilar veſſel, ſuch as is uſed for heating cochineal, French berries, Brazil and other woods, &c. and finiſh the operation in balneo mariæ; collecting the matter into one maſs, as it acquires a proper conſiſtence. The marks of goodneſs in ſap-green are the tranſparency, brightneſs, and ſtrength of colour it appears to have, when rubbed on paper.

SAP, *Le*, in *Geography*, a town of France, in the department of the Orne; 3 miles N.W. of L'Aigle.

SAPA, or *St. Miguel de Sapa*, a town of Peru, in the dioceſe of Arequipa, the environs of which produce a great quantity of Guinea pepper; 6 miles E. of Arica.

SAPA, among the Romans, new wine boiled to the third part of its firſt quantity.

SAPACURI, in *Geography*, a town of Africa, in the country of Sierra Leona. N. lat. 10° 45′. W. long. 12° 25′.

SAPADILLAS, two ſmall iſlands in the Spaniſh main, near the coaſt of Veragua. N. lat. 9°. W. long. 81° 55′.

SAPARA, a town of Turkiſh Armenia; 6 miles S.E. of Acalziké.

SAPATA, or *Pulo Sapata*, a ſmall, high, and barren iſland in the Eaſt Indian ſea, which received its name from the reſemblance of its form to that of a ſhoe. N. lat. 10° 4′. E. long. 109° 10′.

SAPATOS, a ſmall iſland among the Philippines, near the north coaſt of the iſland of Panay. N. lat. 11° 56′. E. long. 122° 42′.

SAPATZIO, a town of Mingrelia; 55 miles E. of Ilori.

SAPELO, a town, or rather village, of America, in Liberty county, and ſtate of Georgia, oppoſite to the ſound and iſland of that name; 6 miles S. of Sunbury.—Alſo, an iſland near the coaſt of Georgia, 20 miles in circumference, at the mouth of a river of the ſame name. N. lat. 31° 23′. W. long. 81° 30′.

SAPHENA, in *Anatomy*, a name given to certain veins of the lower extremities. See VEIN.

SAPHET, in *Geography*. See SAFAD.

SAPHETA, in *Architecture*, is the board over the top of a window, placed parallel and oppoſite to the window-ſtool at the bottom.

SAPHEY KEY, in *Geography*, a ſmall iſland in the bay of Honduras, near the coaſt of Mexico. N. lat. 17° 10′. W. long. 88° 40′.

SAPIEHOW, a town of Lithuania, in the palatinate of Troki; 30 miles N.N.E. of Zytomiers.

SAPIENTIÆ DENTES, in *Anatomy*, the laſt tooth on each ſide of both jaws; ſo called becauſe they appear at the comparatively late period of 18 or 20 years of age. See the account of the teeth in the article CRANIUM.

SAPIENTIAL, SAPIENTIALIS, an epithet applied to certain books of Scripture, calculated for our inſtruction and improvement in prudence, or moral wiſdom: they are thus called in contradiſtinction to the hiſtorical and prophetical books.

The ſapiential books are Proverbs, Canticles, Eccleſiaſtes, the Pſalms, and Job; though ſome reckon this laſt among the hiſtorical books.

SAPIENZA, in *Geography*, three ſmall iſlands in the Mediterranean, near the coaſt of the Morea, oppoſite to Modon: the largeſt was formerly called "Sphacteria," being celebrated for the victory obtained there by the Athenians over the Lacedæmonians. The circumjacent ſea is called the "Sea of Sapienza." N. lat. 36° 53′. E. long. 21° 34′.

SAPIEZISZKI, a town of Lithuania, in the palatinate of Troki; 7 miles W. of Kowie.

SAPINDI, in *Botany*, ſo called from one of the leading genera, (ſee SAPINDUS,) is the 65th natural order in Juſſieu's ſyſtem, the 5th of his 13th claſs. (See RUTACEÆ, MAGNOLIÆ, and GERANIA.) The order is thus defined.

Calyx either of many leaves; or of one leaf, often deeply divided. *Petals* four or five, inſerted into the receptacle of the flower; ſometimes naked; ſometimes villous or glandular in the middle, on the inner ſide; occaſionally bearing an internal ſcale, called by Linnæus a nectary. *Stamens* moſtly eight, with diſtinct filaments, inſerted into the receptacle of the flower. *Germen* ſimple; ſtyle one or three; ſtigma one, two, or three. *Fruit* either drupaceous or capſular, with one, two, or three cells; or of one, two, or three ſingle-ſeeded grains or lobes. *Seeds* attached to the inner corner of each cell. *Corculum* deſtitute of albumen, the radicle incurved upon the, often incurved, lobes. *Stem* arboreous or ſhrubby, rarely herbaceous. *Leaves* alternate.

Sect. 1. *Petals double, or bearing an internal ſcale upon the inner ſide of the claw.*

Cardioſpermum; Paullinia; Seriana; Sapindus; Taliſia of Aublet; and *Aporetica* of Forſter.

Sect. 2. *Petals ſimple.*

Schmidelia; Ornitrophe of Commerſon; *Euphoria* of Commerſon, which is *Scytalia* of Gærtner; *Melicocca; Toulicia* of Aublet, which is Schreber's *Ponæa; Trigonis* of Jacquin; *Molinæa* of Commerſon, referred by Lamarck to *Cupania;* and *Coſſignia* of Commerſon.

Sect. 3. *Genera akin to Sapindi.*

Matayba of Aublet, which is Schreber's *Ephielis; Enourea* of Aublet; *Cupania; Pekea* of Aublet, which is *Rhizobolus* of Gærtner and Schreber.

Aeſculus, though referred by Juſſieu to his next order, *Acera*, is, as he remarks, nearly allied to the *Sapindi*.

SAPINDUS, that is, *ſapo indus*, Indian ſoap; the acrid rind of the fruit ſerving, inſtead of ſoap, to cleanſe linen, but not without hazard of injury to the texture of the cloth.—Linn. Gen. 197. Schreb. 265. Willd. Sp. Pl. v. 2. 468. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 2. 424. Juſſ. 247. Tourn. t. 440. Lamarck Illuſtr. t. 307. Gærtn. t. 70.—Claſs and order, *Octandria Trigynia*. Nat. Ord. *Trihilatæ*, Linn. *Sapindi*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of four ſpreading, ovate, nearly equal, flat, coloured, deciduous leaves, two of them external. *Cor.* Petals four, ovate, with claws; two of them nearer together than the reſt. Nectary of four oblong, concave, erect leaflets, one inſerted into the baſe of each petal; as well as four roundiſh glands, ſimilarly ſituated. *Stam.* Filaments eight, the length of the flower; anthers heart-ſhaped, erect. *Piſt.* Germen ſuperior, triangular; ſtyles three, ſhort; ſtigmas ſimple, obtuſe. *Peric.* Capſules three, globoſe, inflated, combined. *Seed.* Nut globoſe, of two cells, according to Gærtner.

Eſſ. Ch. Calyx of four leaves. Petals four, with ſcales at the baſe. Capſules fleſhy, inflated, combined.

Obſ. The three capſules are ſeldom all perfected.

1. S. *Saponaria*. Common Soap-berry. Linn. Sp. Pl. 526. Willd. n. 1. Ait. n. 1. Purſh v. 1. 274. (Prunifera racemoſa, folio alato, coſtâ mediâ membranulis utrinque extantibus donatâ, fructu ſaponario; Sloane Jam. v. 2. 131.)—Stem without thorns. Leaves pinnate, with lanceolate leaflets, and a winged common ſtalk.—Native of the Weſt Indies. Found on the ſea-coaſt of Georgia and Carolina, but Mr. Purſh thinks it has probably been introduced there. The plant has been ſeen now and then in our ſtoves, raiſed from ſeed, but has never been known to bloſſom. This *tree* is deſcribed by Sloane as twenty or thirty feet high, with a ſmooth bark, and upright branches. The *leaves* are pale green, ſmooth, about a foot long, with veiny, entire, pointed, ſomewhat alternate *leaflets*, uſually five in number. *Flowers* ſmall, numerous, in terminal, compound, finely downy panicles. *Fruit* uſually of one cell, globoſe, the ſize of a gooſeberry. We find no certain figure of this plant; the *Nux americana* of Commelin's Hort. Amſt. v. 1. t. 94, though reſembling it as to the leaves, has a different fruit, and has been ſuſpected to be taken from the Linnæan *Quaſſia amara*. The *ſeeds* of this *Sapindus* are black and hard, and ſerve for making beads, buttons, &c.

2. S. *longifolius*. Long-leaved Soap-berry. Vahl. Symb. v. 3. 53. Willd. n. 2.—"Leaves pinnate; leaflets lanceolate, ſmooth, one of them terminal; their common ſtalk ſimple."—Suppoſed to come from the Eaſt Indies. *Stem* without thorns. *Leaves* of five pair of ſtalked leaflets, the lower ones only oppoſite. *Flowers* in a twice compound cluſter. *Calyx* downy. *Vahl.*

3. S. *ſpinoſus*. Thorny Soap-berry. Linn. Sp. Pl. 526. Willd. n. 3. (S. n. 2; Browne Jam. 207. t. 20. f. 2.)—Leaves abruptly pinnate, elliptical, obtuſe. Stem very thorny.—Native of Jamaica. A *ſhrub*, very remarkable for the prickles of its *trunk*, which is ſeldom above ſeven or eight feet high, and two or three inches thick. *Fruit* ſmall. *Browne.*

4. S. *laurifolius*. Laurel-leaved Soap-berry. Vahl. Symb. v. 3. 54. Willd. n. 4. (S. trifoliatus; Linn. Sp. Pl. 526. Poerinſii; Rheede Hort. Malab. v. 4. 43. t. 19.)

—"Leaves pinnate; leaflets ovate-oblong, pointed, ſmooth; their common ſtalk ſimple. Petals downy at the edge."—Native of the Malabar foreſts. A tall, ſtout, evergreen *tree*, whoſe *leaves* are, as Vahl obſerves, pinnate, not ternate, and therefore his alteration of the name is commendable. *Flowers* ſmall, reddiſh-green, downy within. *Fruit* three-lobed, uſed for waſhing.

5. S. *emarginatus*. Downy-leaved Soap-berry. Vahl. Symb. v. 3. 54. Willd. n. 5.—Leaves abruptly pinnate; leaflets elliptical, emarginate; finely downy beneath; their common ſtalk ſimple. Petals downy at the edge.—Gathered by Dr. Ruſſel on the coaſt of Coromandel. *Herb. Banks.* The *leaves* are ſomewhat coriaceous, of three pair of leaflets, very ſmooth above; clothed beneath, like the *branches* and *ſtalks*, with velvet-like down. *Flowers* ſmall, in compound downy cluſters. Young *fruit* three-lobed, downy.

6. S. *rubiginoſus*. Ruſty Soap-berry. Willd. n. 6. Roxb. Coromand. v. 1. 44. t. 62.—Leaves abruptly pinnate, of ſeveral pair of oblong, acute, oblique leaflets; ruſty, and ſomewhat downy, beneath. Petals ſmooth.—Native of the mountainous parts of the Circars in Hindooſtan, flowering at the beginning of the hot ſeaſon. A large *tree*, whoſe wood is hard and durable, of a chocolate colour towards the centre. *Leaflets* four or five pair. *Flowers* ſmall, variegated with yellow and white. *Fruit* ſmall, oval, brown.

7. S. *tetraphyllus*. Four-leaved Soap-berry. Vahl. Symb. v. 3. 54. Willd. n. 7.—"Leaves abruptly pinnate; leaflets lanceolate-oblong, ſmooth; their common ſtalk ſimple. Cluſters nearly ſimple. Petals ſmooth."—Native of the Eaſt Indies, where it was found by Koenig. *Leaflets* two pair only, on ſhort ſtalks, very ſmooth, equal at the baſe, three inches long. *Flowers* five-cleft, but ſtill with only eight *ſtamens*. *Vahl.*

8. S. *rigidus*. Aſh-leaved Soap-berry. Ait. n. 2. Willd. n. 8. Vahl. Symb. v. 3. 55. (Nuciprunifera arbor americana, fructu ſaponario, orbiculato, monococco, nigro; Pluk. Alm. 265. Phytogr. t. 217. f. 7.)—Leaves abruptly pinnate; leaflets ovate-oblong; common ſtalk ſimple. Petals and fruit ſmooth.—Native of the Weſt Indies. Cultivated by Miller in 1759 It is ſaid in Hort. Kew. to be a greenhouſe plant, flowering from July to September. The *leaflets* are ſmooth and ſhining, pointed, curved, their two ſides of unequal breadth. *Panicles* compound, downy. *Fruit* often of three perfect grains.

9. S. *arboreſcens*. Small-fruited Guiana Soap-berry. Aubl. Guian. v. 1. 357. t. 139. Willd. n. 9.—Leaves abruptly pinnate; leaflets oval, pointed, ſmooth. Cluſters axillary, ſimple.—Native of the woods of Guiana, found by Aublet laden with fruit in May, when alſo it was putting forth freſh flowers. The *ſtem* is ſeven or eight feet high, and eight or nine inches thick, crowned with knotty ſpreading *branches*. *Leaflets* three pair, ſix inches at moſt in length. *Cluſters* ſcarcely branched, though the *flowers* are probably aggregate. *Fruit* red, its grains the ſize of a large currant; ſeldom all perfect.

10. S. *fruteſcens*. Large-fruited Guiana Soap-berry. Aubl. Guian. v. 1. 355. t. 138. Willd. n. 10.—Leaves abruptly pinnate; of many pair of elliptic-lanceolate, pointed, ſmooth leaflets. Cluſters axillary, ſimple.—Native of woods, and the borders of fields, in Guiana, bearing fruit in February. The *ſtem* is as tall as that of the laſt, but more ſlender. *Leaflets* about ſeven pair, the largeſt near a foot long. *Fruit* uſually of one large ſcarlet lobe, an inch long, with a black ſhining *ſeed*. Nothing is recorded of the uſe or qualities of theſe two laſt ſpecies. The *fruteſcens* is remarkable for the great ſize of its *leaves*, much diminiſhed in Aublet's plate. We have examined a leaf, with the fruit, in ſir J. Banks's herbarium; where alſo are one or two Indian ſpecies beſides, hitherto unpubliſhed.

SAPINDUS, in *Gardening*, contains plants of the tree, ſhrubby, and tender exotic kinds, of which the ſpecies cultivated are, the common ſoap-berry tree (S. ſaponaria); and the aſh-leaved ſoap-berry tree (S. rigidus). But there are other ſpecies that may be cultivated for variety.

The nuts of the firſt ſort were formerly brought hither, tipped with ſilver, or other metals, as buttons, which laſted and wore well.

Method of Culture.—Theſe plants may be raiſed from ſeeds, procured from their native ſituations, which ſhould be ſown in ſmall pots, filled with rich freſh earth early in the ſpring, plunging them in a hot-bed of bark, and watering them frequently. When the plants appear, the glaſſes ſhould be raiſed daily to admit freſh air; and when they have had ſome growth, they ſhould be ſhaken out of the pots, carefully ſeparated, and planted in diſtinct pots filled with light rich mould, replunging them in the hot-bed, and ſhading them from the ſun till they have ſtricken root, when they ſhould have free air admitted daily, when the weather is warm, and be frequently watered. As they ſoon fill the pots with their roots, they ſhould be often removed into larger ones, and be gradually inured to the open air; as, when too much forced in the ſummer, they are apt to die in the winter. In the beginning of the autumn they ſhould be removed into the bark-bed of the ſtove, or be placed upon the ſhelves of it, where they often ſucceed better, being managed as other ſtove-plants of the ſame nature.

They afford variety in ſtove collections, when properly intermixed with other ſorts.

SAPINUS, in *Botany*, a name given by ſome of the modern botanical writers to the fir-tree. This does not ſeem, however, to have been the tree ſo called by the ancients. Some of thoſe writers have plainly deſcribed the pine-tree under this name, and Pliny makes it the denomination of the pitch-tree, ſuch as was cultivated in his time.

The word ſapinus ſeems to be only a contraction of *ſapapinus*, a name given by the Latins to the domeſtic or cultivated pine, from the vaſt quantity of juice or ſap it contained. They had a way of expreſſing this juice, called by the word *ſapa*; and Theophraſtus has, for the ſame reaſon, called the domeſtic pine by the name *orrus*, ὀῤῥὸ., a word ſignifying *juice* or *ſap*. This was the pine-tree which bore the pine-nuts uſed in medicine and in foods; and Pliny, who calls it the *manured pitch tree*, plainly errs, becauſe that tree cannot bear eſculent nuts, or anſwer to the reſt of the deſcription.

SAPIUM, a name adopted by Browne, as it ſeems, from Pliny, who uſes it for a ſort of fir, abundant in reſin. De Theis derives the word from the Celtic *ſap*, fat or unctuous; and in this ſenſe it is applicable to Browne's plant.—Browne Jam. 338. Jacq. Amer. 249. Schreb. 657. Willd. Sp. Pl. v. 4. 572. Ait. Hort. Kew. v. 5. 333. Juſſ. 390. Lamarck Illuſtr. t. 792.—Claſs and order, *Monoecia Monadelphia*. Nat. Ord. *Tricoccæ*, Linn. *Euphorbiæ*, Juſſ.

Gen. Ch. Male, *Cal.* Perianth of one leaf, bell-ſhaped, coloured, divided half way down into two roundiſh, concave, obtuſe, converging ſegments. *Cor.* none. *Stam.* Filaments two, thread-ſhaped, combined at the baſe, ſpreading upwards, twice as long as the calyx, on whoſe ſegments they lie ; anthers oblong, of two lobes, divaricated at the baſe.

Female, in the lower part of the ſame ſpike, *Cal.* Perianth inferior, of one leaf, ſmall, bell-ſhaped, coloured, cloſely embracing the germen, three-toothed at the margin. *Cor.* none. *Piſt.* Germen ovate, longer than the calyx ; ſtyle erect, very ſhort ; ſtigma three-cleft, acute, reflexed, very large. *Peric.* Capſule roundiſh, with three ſlight furrows, obtuſe, three-lobed, of three cells and three valves, which ſeparate at the top into two parts. *Seeds* ſolitary, orbicular, compreſſed, rugged, unequally toothed at the margin.

Eſſ. Ch. Male, Calyx divided. Corolla none. Stamens two, combined.

Female, Calyx three-toothed. Corolla none. Style very ſhort. Stigma three-cleft. Capſule three-grained.

1. S. *aucuparium* Two-glanded Sapium. Jacq. Amer. 249. t. 158. Willd. n. 1. Ait. n. 1. (Hippomane biglanduloſa; Linn. Sp. Pl. 1431. Mançanilla lauri foliis oblongis; Plum. Ic. 164. t. 171. f. 2.)—Leaves oblong, pointed, minutely ſerrated. Footſtalks crowned with two glands.—Native of the Weſt Indies. Sometimes ſeen in our ſtoves. An elegant *tree,* thirty feet high, from whoſe trunk, when wounded, a kind of bird-lime exudes. The *leaves* are ſmooth and ſhining, about four inches long, with two conſpicuous glandular tubercles on the top of their *footſtalks.* *Spikes* terminal, many-flowered, long and ſlender, of a yellowiſh-green. *Calyx* dark purple. *Anthers* red.

2. S. *indicum.* Eaſt Indian Sapium. Willd. n. 2.— “Leaves ovate-oblong, pointed, ſerrated, with two glands at their baſe. Footſtalks without glands.”—Gathered by Dr. Roxburgh, in the Eaſt Indies. *Leaves* two inches, or rather more, in length, with two impreſſions at their baſe. *Footſtalks* half an inch long. *Capſule* the ſize of a medlar.

3. S. *ilicifolium.* Holly-leaved Sapium. Willd. n. 3. (Hippomane ſpinoſa; Linn. Sp. Pl. 1432. Mançinella aquifolii foliis; Plum. Ic. 164. t. 171. f. 1.)—Leaves ovate, with three ſpinous teeth at each ſide.—Native of South America. The *ſpikes,* by Plumier's figure, appear to be compound, at leaſt in the male portion. *Fruit* like the firſt ſpecies.

SAPLING, among *Gardeners,* a name by which they call any young tree that is full of *ſap.*

SAPO. See SOAP.

SAPO *Amygdalinus, Almond Soap,* in the *Materia Medica,* a form of medicine which has been much uſed in nephritic caſes, and made to ſupply the place of the common hard ſoap for internal uſes, in a more determinate manner for the phyſician, and a more cleanly one for the patient.

It is thus made: Take any quantity of freſh oil of almonds, and thrice its quantity of ſoap lees ; digeſt them together in ſuch a heat as will make them but juſt boil ; within a few hours the oil and lees will be united, and the liquor will ſoon after become ropy, and ſomething tranſparent, and will cool into the conſiſtence of a jelly ; then throw in ſea-ſalt till the boiling liquor has loſt its ropineſs ; continue the boiling till drops of the liquor being received upon a tile, the water is ſeen to ſeparate freely from the coagulated ſoap ; then take away the fire, and the ſoap will riſe to the top of the water ; whence it is taken off before it grows cold, and put into a wooden mould or frame, with a cloth bottom. Being afterwards ſeparated from the mould, it is ſet by till it has acquired a due conſiſtence. See ALMOND.

SAPONACEA TERRA, in *Natural Hiſtory,* a term uſed by ſome to expreſs a kind of native alkali ſalt, of the nature of the nitre, or natron, of the ancients, which is found on the ſurface of the earth, mixed with dirt, &c. in the neighbourhood of Smyrna, and thence called by ſome *Smyrna earth.* See FLOS *Aſiæ.*

It is found principally in two places near Duraclea, a large open village, about ſix leagues to the eaſtward of Smyrna ; and in a very flat plain, about a league weſtward from the river Hermus. It is at firſt gathering a fine whitiſh ſalt, which of itſelf boils up, as it were, out of the ground. It is always gathered before ſun-riſe, and only in mornings in which there falls no dew ; ſo that a ſtock ſufficient for the whole year muſt be laid in during the ſummer months. It comes up in ſome places an inch or two above the ſurface of the ground ; but when the ſun riſes upon it, it dries and falls down again. The earth producing it lies low in both places, and in winter is waſhy. It is thinly covered with graſs.

It may be ſuſpected, at firſt ſight, that the neighbouring ſea impregnates this earth about Hermus ; but the ground which produces it, and lies about Duraclea, is ſo far from the ſea, that it overthrows this ſpeculation ; though every morning in ſummer the earth be ſwept clean of this ſalt, the next morning always produces a new crop.

Dr. Smyth, who made experiments upon this ſalt, informs us, that three hundred drachms of it being put into a retort, and this ſet in a ſand-heat with a very ſtrong fire for twelve hours, yielded between five and ſix ounces of an inſipid phlegm, of no other ſmell but ſuch as, in all ſuch operations, ariſes from the fire. It appeared from this, that the matter contained no volatile ſalt. After this the quantity of two hundred drachms, calcined in a German crucible, was diſſolved in water. This compoſition of earth and water, boiled into a lixivium, made five hundred drachms, after it had boiled three hours, and the foul ſcum had been continually taken off during that time, and been filtrated ; the cloſe liquor being then evaporated to a dryneſs, there remained a pure white fixed alkaline ſalt, of the nature of pot-aſh.

The people of the place make ſoap with this earth in the following manner ; they mix three-fourths of this earth with one-fourth of lime, and then pour boiling water upon this mixture ; they ſtir this with a ſtick, and there ariſes to the top a thick browniſh ſubſtance, which they ſcum off ; they ſave this in veſſels by itſelf. They uſe both this and the clear liquor in making ſoap, but this is much ſtronger than the liquor. They put fifty quintals of oil into a larger copper boiling veſſel, and kindling a large fire under it, they let the oil boil a little, and then throw in by little and little firſt the ſcum of the ley, and afterwards the liquor itſelf ; though ſometimes they uſe only the one, or only the other. They continue adding more and more of theſe, till the oil acquires the conſiſtence of ſoap, which is often ſeveral days. The fire muſt be all this time kept up very ſtrong. The ſcum of the ley, and the ſtronger part of the ley itſelf, mix with the oil in the boiling, and the weaker part unmixing itſelf, ſinks to the bottom, and is let out by a cock prepared for that purpoſe. This is not thrown away, but is let run upon freſh lime and earth, to make a ley for future uſe ; and when the ſoap is perfectly made, it is laded out, and put upon a brick or lime floor to harden.

The common proportion in the making of the ſoap is two loads of earth, five quintals each, to fifty quintals of oil, and the produce is between ſeventy and eighty quintals of ſoap. The earth is bought at a dollar a load, and the ſoap at ſix and a half a quintal. There are employed annually, in making ſoap at Smyrna, at leaſt ten thouſand quintals of oil. The bringing of the ſoap-earth to Smyrna employs a thouſand camels, or fifteen hundred, for eight months of the year, the four ſummer months being too hot for camels to travel in. A common ſoap-houſe produces, at a medium, a thouſand dollars a-year clear profit. Phil. Tranſ. N° 220, p. 230.

SAPONARA, in *Geography*, a river of Sicily, which runs into the ſea, nine miles W. of Meſſina.—Alſo, a town of Naples, in Principato Citra; 20 miles N.E. of Policaſtro.

SAPONARIA, in *Botany*, Soapwort, ſo called becauſe its bruiſed leaves are ſaid to produce a lather, like ſoap, when agitated with water; a property we have not been able to diſcover.—Linn. Gen. 224. Schreb. 302. Willd. Sp. Pl. v. 2. 667. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 459. Prodr. Fl. Græc. Sibth. v. 1. 282. Ait. Hort. Kew. v. 3. 76. Juſſ. 302. Lamarck Illuſtr. t. 376.—Claſs and order, *Decandria Digynia*. Nat. Ord. *Caryophylleæ*, Linn. Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, naked, tubular, cylindrical, inclining to ovate, without angles, five-toothed, permanent. *Cor.* Petals five; claws narrow, angular, as long as the calyx; limb flat, dilated outwards, obtuſe. *Stam.* Filaments ten, awl-ſhaped, the length of the claws of the petals, into which five of them are inſerted, the five alternate ones being later; anthers oblong, obtuſe, incumbent. *Piſt.* Germen ſuperior, nearly cylindrical; ſtyles two, ſtraight, parallel, the length of the ſtamens; ſtigmas acute. *Peric.* Capſule the length of the calyx, in which it is encloſed, oblong, of one cell. *Seeds* numerous, ſmall, attached to a long, central, unconnected receptacle.

Eſſ. Ch. Calyx of one leaf, ovato-cylindrical, without angles, naked. Petals five, with long claws. Capſule ſuperior, oblong, of one cell.

Obſ. Several ſpecies referred to this genus by Linnæus, having an angular bell-ſhaped calyx, ſhort claws to their petals, and a nearly globular capſule, appear to us indubitably to belong to *Gypſophila*, with which they agree beſt in habit, and to which the writer of this article has removed them, in his Prodromus of the Flora Græca Sibthorpiana. Theſe are the Linnæan *S. Vaccaria*, *cretica*, and *illyrica*.

1. S. *officinalis*. Common Soapwort. Linn. Sp. Pl. 584. Willd. n. 1. Ait. n. 1. Fl. Brit. n. 1. Engl. Bot. t. 1060. Curt. Lond. faſc. 2. t. 29. Woodv. Suppl. t. 251. Bulliard. t. 257. Fl. Dan. t. 543. (Saponaria; Ger. Em. 444.)—Calyx cylindrical, with ſhallow teeth. Claws of the petals with four wings. Leaves elliptic-lanceolate, three-ribbed.—Native of the more temperate parts of Europe, in rather moiſt, rich waſte ground, flowering towards autumn. Mr. Purſh ſays it occurs in North America, but among rubbiſh, and in cultivated ground, occaſionally in gravel pits and on dry hills; ſo that he ſuſpects it to have been brought from Europe. The *root* is perennial, fleſhy, deep, and much branched. *Stems* numerous, about 18 inches high, erect, round, leafy, jointed, ſmooth. *Leaves* oppoſite, joined at the baſe, ſmooth, entire, ſlightly ſucculent; dark green above; paler beneath. *Panicles* terminal, forked, of numerous, large, handſome, pale pink *flowers*, with a ſweet oppreſſive ſcent; the *corolla* often more or leſs double. Gerarde found in Northamptonſhire a remarkable variety, ſince obſerved by Dr. Boſtock of Liverpool, on ſand-hills ſeven miles north of that town. In this the *leaves* are broad, ſheathing, and alternate; the *corolla* monopetalous. It is well repreſented in Ger. Em. 435, under the name of *Gentiana concava*.

2. S. *porrigens*. Hairy Soapwort. Linn. Mant. 239. Willd. n. 4. Ait. n. 3. Jacq. Hort. Vind. v. 2. 49. t. 109. Meerburgh Ic. t. 36.—Calyx deeply divided, downy and viſcid. Panicle widely ſpreading. Fruit pendulous. Leaves ſingle-ribbed.—Native of the Levant. Cultivated here by Moriſon. A hardy annual, flowering in July and Auguſt. The *ſtem* is rather taller than the former, terminated by a large forked *panicle*, of innumerable, ſmall, pink, long-ſtalked *flowers*. After flowering, each partial *ſtalk* points directly downwards. The *leaves* are lanceolate, ſmooth, rather ſucculent.

3. S. *ocymoides*. Baſil-leaved Soapwort. Linn. Sp. Pl. 585. Willd. n. 6. Ait. n. 4. Curt. Mag. t. 154. Jacq. Auſtr. append. 39. t. 23. Cavan. Ic. v. 2. 29. t. 134. (Lychnis montana repens; Ger. Em. 473.)—Calyx ſwelling upwards, villous. Stems forked, procumbent. Leaves elliptical. Petals nearly entire.—Native of Italy, France, and Switzerland; a hardy perennial with us, flowering from May to July. The *root* is large and fleſhy. *Stems* many, ſpreading on the ground in every direction, reddiſh, hairy. *Leaves* elliptical, acute, varying in breadth, hairy alſo. *Flowers* abundant from the numerous forks of the ſtem, roſe-coloured, with a blood-red, hairy, viſcid *calyx*, ſcarcely divided half way down. This plant is, as Curtis obſerves, excellent for adorning artificial rock-work, &c. though not propagated plentifully by ſeed.

4. S. *orientalis*. Small Annual Soapwort. Linn. Sp. Pl. 585. Willd. n. 7. Ait. n. 5. (Lychnis orientalis annua ſupina, antirrhini folio, flore minimo purpuraſcente; Dill. Elth. 205. t. 167.)—Calyx ſwelling in the lower part, villous. Stem forked, ſpreading. Leaves elliptic-lanceolate. Petals cloven.—Native of the Levant. A hardy annual, flowering from July to Auguſt. The annual *root*, more buſhy *ſtem*, and divided *petals*, as well as the ovate rather than club-ſhaped *calyx*, diſtinguiſh this ſpecies from the laſt-deſcribed.

5. S. *lutea*. Yellow Alpine Soapwort. Linn. Sp. Pl. 585. Willd. n. 8. Allion. Pedem. n. 1560. t. 23. f. 1. Sm. Spicil. 4. t. 5. (Lychnis floribus umbellatis ochroleucis, petalis ovatis, filamentis nigris; Allion. Spec. Ped. 29. t. 5. f. 2.)—Calyx ſomewhat ovate, hairy as well as the ſtem. Petals obovate, entire. Flowers corymboſe. Leaves linear-lanceolate, channelled.—Native of fiſſures of rocks on mount Cenis, as well as on ſome of the Alps of Switzerland and Savoy, but not common, flowering in Auguſt. This pretty plant is unknown in our gardens. The *root* is perennial, woody, tufted. *Stems* about three inches high. Radical *leaves* ſmooth, numerous; the reſt rather hairy. *Calyx* tinged with violet, as are alſo the *ſtamens*, and the claws of the otherwiſe pale lemon-coloured *petals*.

6. S. *bellidifolia*. Daiſy-leaved Italian Soapwort. Sm. Spicil. 5. Willd. n. 9. (S. lutea β; Linn. Sp. Pl. 585. Globularia lutea montana; Column. Ecphr. 152. t. 153, very good. Bellis montana, globoſo luteo flore; Bauh. Pin. 262. Lychnis lutea montana, globulariæ folio et facie; Barrel. Ic. t. 498.)—Calyx cylindrical, hairy. Stem ſmooth. Petals linear, crenate. Leaves ſpatulate.—Gathered by Columna, on the ſummits of ſome mountains in Italy. Linnæus and Haller confounded its ſynonyms with the *S. lutea*, from which the plant of Columna, examined by us in Vaillant's herbarium, differs in being thrice as tall, with ſpatulate, dilated radical *leaves*; the *ſtems* ſmooth; *ſtamens* yellow; and *petals*, according to the accurate Columna, linear, notched at the end. We are led to doubt Boccone's plant, figured in his *Muſeo di piante rare*, t. 62, and deſcribed at p. 75, as a native of mount Cenis, by the name of *Lychnis rubra globulariæ capitulo*. This may perhaps be *Lychnis alpina*, though Boccone's figure anſwers to our *Saponaria bellidifolia*.

7. S. *cæſpitoſa*. Tufted-leaved White Soapwort. Sm.

Prodr. Fl. Græc. Sibth. n. 952. Fl. Græc. t. 389, unpubliſhed.—Calyx ſmooth, contracted at the baſe. Leaves ſpatulate, tufted. Stem ſimple, ſingle-flowered, nearly naked.—Native of mount Delphi, in Negropont, where it was found by Dr. Sibthorp. The *roots* are perennial, crowned with denſe tufts of ſmooth *leaves*. *Stems* ſlender, erect, three or four inches high, each bearing a ſingle white *flower*.

Saponaria, in *Gardening*, contains plants of the herbaceous, perennial, and annual kinds, of which the ſpecies cultivated, is the common ſoapwort (S. officinalis).

In this there are two varieties; as with ſingle and double flowers, the latter of which is preſerved in gardens, but has the ſame fault with the ſingle one, of ſpreading very much at the root. Alſo the hollow-leaved, in which the roots do not ſpread like thoſe of the common ſort; the ſtalks are ſhorter, thicker, and do not grow ſo erect; they riſe a foot or more in height; the joints are very near and ſwelling; the leaves are produced ſingly on the lower part of the ſtalks, but towards the top they are often placed by pairs; they are about three inches long and two broad, having ſeveral longitudinal veins or plaits, and hollowed like a ladle; the flowers are diſpoſed looſely on the top of the ſtalk, have large cylindrical calyces, only one petal, and ſcarcely any viſible ſtamens; they are of a purple colour, and appear in July.

Method of Culture.—Theſe plants are readily increaſed by parting the roots, and planting them out either in the autumn or early ſpring; the hollow-leaved variety may likewiſe be raiſed from ſlips or cuttings planted at the ſame ſeaſons. It ſhould have a dry ſituation, where the air is good.

The double ſort affords variety in the borders and other parts, and the hollow-leaved variety is uſeful for ornamenting rock-work.

Both the root and leaves of this ſort of plants were formerly uſed for medicinal purpoſes; and the latter employed inſtead of ſoap in waſhing clothes, being boiled in water ſo as to afford a ſoap-like froth, whence the name.

Saponaria, in the *Materia Medica*, a name given at different times to ſeveral plants, which had in ſome ſort the properties of ſoap.

The ſtruthium of the Greeks, and herba lanaria of the Romans, having ſomewhat of this property, and being uſed in cleaning of the wool, ſeveral authors have explained it by the word ſaponaria; but this is leaving us as much in the dark as to the plant, as we were before, not at all aſcertaining which, if any of the plants at one time or other ſo called, was to be underſtood as being the ſame with the ſtruthium.

The Greeks have many times called hyſſop by the name ſaponaria; others have given the ſame name to the anagallis, or pimpernel; and others to ſeveral different plants, which they ſuppoſed to have the effects of ſoap, or of nitre in cleanſing of things.

None of the plants, however, that we have under the name ſaponaria, will at all agree with the ſtruthium, or herba lanaria, which was a thiſtle; and the very Arabians ſeem not to have known it, but have erroneouſly ſuppoſed their candiſi to be it.

The "ſaponaria officinalis," or *ſoapwort*, has been recommended for medical purpoſes. The root of this plant has no peculiar ſmell; its taſte is ſweetiſh, glutinous, and ſomewhat bitter; on being chewed for ſome time, it is ſaid to diſcover a degree of acrimony, which continues to affect the mouth a conſiderable time. According to Neuman, two ounces of the root yielded eleven drachms of watery extract; but Cartheuſer, from a like quantity, only obtained ſix drachms, and twenty-four grains. This extract manifeſted a ſweetiſh taſte, followed by an acrid quality. The ſpirituous extract is leſs in quantity, but of a more penetrating acrid taſte. Decoctions of the root, on being ſufficiently agitated, produce a ſaponaceous froth; a ſimilar ſoapy quality is obſervable alſo in the extract, and ſtill more manifeſtly in the leaves, inſomuch that they have been uſed by the mendicant monks as a ſubſtitute for ſoap in waſhing of their clothes; and Bergius, who made ſeveral experiments with the ſaponaria, declares that it has all the effects of ſoap itſelf. He obſerves alſo, that the ſaponaceous quality is not injured by acids, like that of the common ſoap.

From theſe peculiar qualities of the ſaponaria there can be little doubt of its poſſeſſing a conſiderable ſhare of medical efficacy, which we could wiſh to find faithfully aſcertained.

The diſeaſes for which the ſaponaria is recommended, as ſyphilis, gout, rheumatiſm, and jaundice, are not, perhaps, the complaints in which its uſe is moſt availing; for a fancied reſemblance of the roots of ſaponaria with thoſe of ſarſaparilla, ſeems to have led phyſicians to think them ſimilar in their effects, and hence they have both been adminiſtered with the ſame intentions, particularly in fixed pains, and venereal affections. Bergius ſays, "in arthritide, cura mercuriale, &c. nullum aptiorem potum novi."

However, according to ſeveral writers, the moſt inveterate caſes of ſyphilis were cured by a decoction of this plant, without the uſe of mercury.

Haller informs us, that Boerhaave entertained an high opinion of its efficacy in jaundice, and other viſceral obſtructions. Woodville's Med. Bot.

Saponaria *Terra*, in *Mineralogy*, a name given by ſome authors to the common fuller's earth.

Saponaria *Terra alba*, in *Natural Hiſtory*, a name given by ſome authors to the common tobacco-pipe-clay.

They called the common fuller's earth alſo ſaponaria terra, and diſtinguiſh it from this by the epithet *purpuraſcens;* though it has no ſuch colour as purple about it. See Cimolia.

SAPONARIUM Lixivium. See Lixivium *Saponarium.*

SAPONEA, a name given by authors to a pectoral medicine, made of oil of ſweet almonds and ſugar, mixed with the diſtilled water of violets.

SAPONIES, in *Geography*, a denomination given to Indians of America, who inhabit a territory on the N. branch of Suſquehannah river: the number of warriors is eſtimated at 30.

SAPOR I., in *Biography*, king of Perſia, ſucceeded his father Artaxerxes, founder of the houſe of Saſſan, A.D. 240. He was of a fierce and martial character, ſtrong in body, active and able. One of his firſt projects was to renew the war with the Roman empire: having taken the field, he over-ran Meſopotamia and threatened Antioch, when the younger Gordian advanced to meet him. The Perſian king withdrew into his own dominions, and was followed by Gordian, but this unfortunate prince was murdered by Philip, who aſſumed the purple as the price of his crimes. As it was neceſſary for the uſurper to return, he made peace with Sapor, abandoning to him the countries which he had invaded. After this, Sapor marched againſt Choſroes, king of Armenia, whom he cauſed to be aſſaſſinated, and then marching into the country, at the head of an irreſiſtible force, reduced it to the condition of a province. He now, availing himſelf of the diſtracted ſtate of the Roman empire, renewed his incurſions, obliged ſeveral ſtrong towns to ſurrender, and laid ſiege to Edeſſa. Valerian, who was at this time emperor, marched to its relief, and the two ſovereigns encountered each other in the neighbourhood of that city. Valerian was defeated and made priſoner. Sapor then croſſed the Euphrates, and advanced to Antioch, which he took by ſurprize, and ſacked. He next made himſelf maſter of Tarſus, in Cilicia, and then laid ſiege to Cæſarea, in Cappadocia, which, after a time, ſubmitted to his power. His victorious arms were checked by the Roman general Baliſtus, who obliged him to retire towards the Euphrates. At this time Odenathus the Palmyrene, who had formerly been treated with great inſolence by Sapor, appeared as his enemy, and after various ſucceſſes, drove him acroſs the river. In the mean time the Perſian monarch tarniſhed the glory of his ſucceſs againſt Valerian, by his ungenerous and inhuman conduct towards his unfortunate captive. Odenathus afterwards twice advanced as far as Cteſiphon, and reduced to his obedience all the countries between Palmyra and the Tigris. After his death, his widow, the celebrated Zenobia, maintained her independence againſt the Perſian arms. Sapor, amidſt a variety of fortune, continued to aggrandize himſelf at the expence of the neighbouring ſovereigns till his death, which happened in the year 271 or 272, after a reign of 31 years.

SAPOR II. king of Perſia, ſon of Hormouz or Hormiſdas II. was born in the year 310: he was not born till after the deceaſe of his father, and had the ſingular fortune of being declared monarch before his birth: for at his father's death, when the ambition of the princes of the royal blood was excited by the want of an heir apparent, the Magi ventured to aſſert not only the pregnancy of the widow, but that ſhe had conceived a ſon; and the ſatraps in conſequence paid homage to their unborn ſovereign. During the minority of Sapor, his capital was plundered by Thair, an Arabian prince, who carried away the king's aunt; but this inſult was revenged by him as ſoon as he came to years of maturity, and Thair and his people fell under his authority. The moderate uſe which he made of his victory cauſed him to be acknowledged by the Arabs as the protector of their nation. At the inſtigation of the Magi, Sapor became a perſecutor of the Chriſtians reſiding in his dominions; who, he was led to believe, were more attached to the emperor Conſtantine than himſelf. Sapor was anxious to recover from the Romans the provinces which they poſſeſſed beyond the Tigris, and for the purpoſe of gaining information of the military ſtrength of the empire, he ſent a ſolemn embaſſy to Conſtantinople, under the pretext of renewing the peace between the two nations. This was amicably received by Conſtantine, who returned a letter, in which he pleaded with the king in favour of the Chriſtians, and in the event obtained for them a better treatment. Sapor, however, gave ſuch indications of his intention to make good his claims upon the provinces that formerly were a part of the Perſian dominions, that Conſtantine is ſaid to have been preparing for an expedition into the Eaſt when death put an end to his projects. Immediately upon this event, Sapor broke into the Roman borders, and made himſelf maſter of ſeveral important fortreſſes in Meſopotamia. In a number of actions on the Roman and Perſian borders, between Conſtantius and Sapor, the arms of the latter had generally the advantage. At the battle of Singara, however, in 348, the Romans put the Perſians to flight, and took poſſeſſion of their camp, a ſon of Sapor's being made priſoner in the purſuit, and inhumanly maſſacred; but in the end, the Perſians rallied and repulſed the Romans with great ſlaughter. He was unable, with his utmoſt efforts, to make himſelf maſter of the ſtrong city of Niſibis, which was defended with unabating conſtancy by its Chriſtian inhabitants. An inſurrection in his eaſtern provinces led him to attempt a negociation with the Roman emperor; but his claims were ſo high that no treaty could be agreed on. The ſubſequent civil wars in the Roman empire gave the Perſian monarch an advantageous opportunity of again paſſing the boundaries, and in the year 359 he croſſed the Tigris, and laid ſiege to Amida. This place, after a vigorous defence, was carried by ſtorm, and all its remaining inhabitants were either maſſacred or carried into ſlavery. After this, Sapor was principally employed in ſecuring his conqueſts, till the ſucceſſion of Julian to the empire, whom he wiſhed to make his friend. But the Roman emperor rejected the overtures, and declared his intention of ſpeedily viſiting the Perſian capital at the head of his army. This expedition took place in the year 363, but it was fatal to the invader. Julian was killed in an action, and his ſucceſſor, Jovian, had no other way of extricating himſelf from his difficulties, than by accepting the terms of accommodation which Sapor offered. Theſe were the reſtitution to the Perſian empire of the conteſted provinces, and the ſtrong city of Niſibis, which had proved impregnable to his arms. Sapor faithfully performed, on his part, the conditions by which the ſafe retreat of the Romans was ſecured, and the termination of this invaſion proved the moſt glorious event of his reign. He was now left at liberty to purſue his ſchemes of aggrandizement in other quarters, and marching into Armenia, he got poſſeſſion of the king, whom he put to death, and then reduced the country to the condition of a Roman province. Sapor died in the year 380, with the renown of having been one of the greateſt princes of his line. Univer. Hiſt. Gibbon.

SAPOTA, in *Botany*, the Weſt Indian name of ſeveral ſorts of fruit, ſomewhat reſembling a plum. See ACHRAS.

SAPOTÆ, or SAPOTEÆ, a natural order of Juſſieu's, the 48th in his ſyſtem, the 15th of his 8th claſs. (See GENTIANÆ.) The order is thus defined.

Calyx divided, permanent. *Corolla* regular; its ſegments in ſome inſtances agreeing in number with thoſe of the calyx, but at the ſame time accompanied by an equal number of intermediate appendages; in other inſtances twice as numerous, without any ſuch appendages. *Stamens* oppoſite to the ſegments of the corolla, and agreeing therewith in number; or elſe twice as numerous, the appendages in that caſe bearing anthers. *Germen* one; ſtyle one; ſtigma moſtly ſimple. *Fruit* either a berry or drupa, of one or many cells, each containing a ſolitary ſeed, which is bony and poliſhed, marked with a lateral ſcar. *Corculum* flat, enveloped in a fleſhy albumen. *Stem* ſhrubby or arboreous. *Leaves* alternate, for the moſt part undivided and entire. *Flowers* numerous, axillary, their ſtalks ſingle-flowered. The *plants* are milky.

The genera placed here by Juſſieu are *Jacquinia; Manglilla*, ſee MYRSINE; *Sideroxylum; Baſſiæ; Mimuſops; Imbricaria* of Commerſon; *Chryſophyllum; Lucuma*, a genus, with a Peruvian name, founded by Juſſieu and Dombey upon *Achras mammoſa;* and *Achras*.

The following are ſubjoined, as allied to the true *Sapotæ*. *Myrſine; Inocarpus; Olax;* and *Leea*.

Mr. R. Brown, Prodr. Nov. Holl. v. 1. 529, points out the affinity of this order to the *Ebenaceæ*, and augments it with a new genus, SERSALISIA; which will be found in its proper place hereafter. At the ſame time he eſtabliſhes the order of MYRSINEÆ, ſee that article; and propoſes to remove to its leading genus, *Myrſine*, amongſt other things, *Samara coriacea* of Swartz; *pentandra* of Ait. Hort. Kew.; and *floribunda* of Willdenow. See SAMARA.

SAPOU, in *Geography*, a town of Aſiatic Turkey, in Diarbekir; 20 miles N. of Hazou.

SAPOZOK, a town of Ruſſia, in the government of Riazan; 68 miles W. of Riazan. N. lat. 54° 5′. E. long. 40° 44′.

SAPPAN, in *Botany*. See CÆSALPINIA.

SAPPAN, in the *Materia Medica*, a name uſed by ſome authors for the wood of the arbor Campechiana, or logwood, uſed in dyeing. See HÆMATOXYLUM *Campechiana*.

This wood has a ſweetiſh ſub-aſtringent taſte, and no remarkable ſmell; it gives a purpliſh-red tincture both to watery and ſpirituous infuſions, and tinges the ſtools, and ſometimes the urine, of the ſame colour; but from the experiments of Du Hamel and others, it does not appear to colour the bones of animals, as obſerved of madder and ſome other plants of that claſs. It is uſed medicinally as an aſtringent and corroborant. In diarrhœas it has been found peculiarly efficacious, and has the recommendation of ſome of the firſt medical authorities: alſo in the latter ſtages of dyſentery, when the obſtructing cauſes are removed, to obviate that extreme laxity of the inteſtines uſually ſuperinduced by the repeated dejections. Extractum ligni campechenſis is ordered in the pharmacopeias, and may be given in the doſe of one ſcruple or two, repeated according to the urgency of the ſymptoms. Woodville's Med. Bot.

SAPPAN, in *Geography*, a river of Aſia, which riſes in Salengore, and runs into the ſtraits of Malacca, N. lat. 2° 37′. E. long. 101° 47′.

SAPPAR, a ſmall iſland in the Eaſt Indian ſea, near the W. coaſt of Naſſau. S. lat. 2° 55′. E. long. 99° 45′.

SAPPARE of Sauſſure and Kirwan, *Cyanite* or *Kyanit* of Werner, *Diſthene* of Haüy, in *Mineralogy*, a ſpecies of the cryſtallaceous genus, the colour of which is milk-white, pearl-grey, blueiſh-grey, or ſmalt-blue, Pruſſian blue, or ſky-blue. It ſometimes occurs entirely blue, but more frequently ſpotted, ſtriped or clouded with this colour. It is found in maſs, diſſeminated, and cryſtallized in long oblique four-ſided priſms, truncated on the lateral edges. The cryſtals are imbedded or interſect one another, and vary from middle-ſized to very ſmall. Its external and internal luſtre is bright-ſhining pearly. Its fracture is broad, diverging, and interſecting radiated, paſſing into curved-foliated. The fracture of the cryſtals is foliated in three directions. Its fragments are ſlaty and ſometimes imperfectly rhomboidal. In maſs it is uſually tranſlucent; the cryſtals are for the moſt part tranſparent. Its hardneſs is about equal to that of fluor ſpar. It has a ſlight degree of flexibility, and feels ſomewhat greaſy. Sp. gr. 3.51 to 3.62.

It is infuſible *per ſe* before the blowpipe. Its component parts, according to Theodore de Sauſſure, are

29.2	Silex,
55.	Alumine,
2.25	Lime,
2.	Magneſia,
6.65	Oxyd of iron,
6.9	Water and loſs.
102.00	

It occurs in primitive mountains imbedded in micaceous ſchiſtus and accompanied by grenatite.

It is found near Banchory in Aberdeenſhire, and in the largeſt of the Shetland iſlands; alſo in Norway, the Swiſs Alps, the Pyrenees, the Tyrol, Carinthia, Bavaria, France, and Siberia.

The very pale varieties of this mineral are ſometimes miſtaken for tremolite; it may be diſtinguiſhed however by the blue tinge which even the paleſt are not entirely free from: beſides, tremolite is found chiefly in granular lime-ſtone, but cyanite in micaceous ſchiſtus. The tranſparent varieties of a Pruſſian blue colour are ſometimes, when cut and poliſhed, ſold for ſapphires, from which however they are readily diſtinguiſhed by their inferior hardneſs and ſpecific gravity. Kirwan's El. of Mineralogy, vol. i. Aikin's Dict.

SAPPERS, are ſoldiers belonging to the royal artillery, who are employed in forming the ſaps.

A brigade of ſappers generally conſiſts of eight men, which form two equal parties; whilſt one party is advancing the ſap, the other furniſhes the neceſſary materials; and thus they alternately relieve each other.

SAPPHIC, in *Poetry*, a kind of verſe much uſed by the Greeks and Latins; and ſo denominated from the inventreſs Sappho.

The Sapphic verſe conſiſts of eleven ſyllables. or five feet; of which the firſt, fourth, and fifth, are trochees, the ſecond a ſpondee, and the third a dactyl, as in

"Integer vitæ, ſceleriſque purus,
Non eget Mauri jaculis nec arcu." Horace.

Three verſes of this kind, cloſed with an Adonic verſe, conſiſting of a dactyl and ſpondee, uſually make a ſtrophe. Though we have ſome choruſſes in the ancient tragic poets, containing a much greater number of Sapphics ſucceſſively. They generally run rough, unleſs they have the cæſure after the ſecond foot.

SAPPHIRE, in *Mineralogy*, a precious ſtone, next in hardneſs and value to the diamond. (See GEM.) The more common colour of the ſapphire is blue, in various ſhades. It is ſometimes red, and has been miſtaken for the ruby, but it is harder, and ſcratches the latter gem. The primitive form of the cryſtal is a rhomboid, nearly rectangular, the angles being 96° and 84°.

The ſapphire is infuſible *per ſe* by the blowpipe, but it loſes its blue colour in the fire. The conſtituent parts of the ſapphire, as given by Klaproth, are

Alumine	98
Oxyd of iron	1
Lime	0.5

Thus it appears that the principal part of the ſapphire is pure clay or alumine; and Klaproth obſerves, "what a high degree of coheſive power muſt nature command, to be able to transform ſuch a ſubſtance as common clay into a body, ſo eminently diſtinguiſhed and ennobled by its hardneſs, brilliancy, and reſiſtance to the action of the fire or acids, and the effects of all deſtroying time." Klaproth's Eſſays.

The method of making the counterfeit ſapphires in paſte is this. Take of cryſtal prepared, two ounces; minium, or common-red lead, ſix ounces; zaffer prepared, five grains; manganeſe prepared, ſeven grains; mix all the powders perfectly together, and put them into a crucible; cover it with a ſtrong lute, and put the whole into a potter's kiln, to ſtand in the hotteſt place for twenty-four hours; it will be of a moſt beautiful deep ſapphire colour. Blue paſtes of two other degrees of blue are alſo made in the following manner. For a ſky-blue, take cryſtal prepared, two ounces; red lead, ſix ounces; prepared zaffer, twenty-one grains; mix all well together, and bake them as before. For a deep violet-blue, take cryſtal, two ounces; red lead, four ounces, and four grains of painter's blue ſmalt; mix all, and bake together in the kiln.

Theſe both make good blues, but much inferior to the firſt proceſs. (Neri's Art of Glaſs, p. 132.) See PASTE, and method of *imitating gems*, under the article GEMS. For engraving on ſapphire, ſee the ſame article.

SAPPHIRE *Colour.* To give this elegant and beautiful blue to glaſs, the workers in the glaſs-houſe uſe the following method. Take a hundred weight of rochetta-frit, and add to it a pound of prepared zaffer, and to this an ounce of manganeſe; mix all well together, and put them into the furnace to melt and purify, and when it is become perfectly pure and fine, work it into veſſels, &c. This ſmall quantity of manganeſe, with the zaffer, gives a moſt beautiful violet blue. Neri's Art of Glaſs, p. 93. See GLASS.

SAPPHIRE-*Rubies*, are certain precious ſtones, between blue and red; which, in effect, are nothing but rubies, whoſe colour is mixed with blue. See GEMS.

SAPPHIRINA AQUA, the *blue eye-water*, is thus made. Pour a pint of ſtrong and freſh lime-water into a copper veſſel; and add to it a drachm of crude ſal ammoniac, and throw in ſome filings or ſmall pieces of copper, it ſoon acquires a beautiful blue colour, and is not only uſed as an eye-water, but alſo to deterge old ulcers; and ſometimes is mixed with other things in injections for gonorrhœas.

SAPPHIRO-RUBINUS, in *Natural Hiſtory*, a name given by ſome modern writers on gems to a ſtone, partly a ſapphire and partly a ruby; or, more properly ſpeaking, a ſapphire tinged in ſome part with the ruby colour, while the reſt remains blue. The Indians call this *nilacundi.*

SAPPHO, in *Biography*, a celebrated Greek poeteſs, was a native of Mitylene, in the iſle of Leſbos, and flouriſhed about the year 610 B.C. She married a rich inhabitant of Andros, by whom ſhe had a daughter, and it was not, probably, till after ſhe became a widow, that ſhe rendered herſelf ſo diſtinguiſhed by her poetry and amours. Her verſes were chiefly of the lyric kind, and love was the general ſubject, which ſhe treated with ſo much warmth, and with ſuch beauty of poetical expreſſion, as to have acquired the title of the tenth muſe. Her compoſitions were held in the higheſt eſteem by contemporary poets, the Roman as well as the Grecian, and no female name has riſen higher in the catalogue of poets. Her morals have been as much depreciated, as her genius has been extolled. Beſides her deſperate paſſion for Phaon, ſhe has been accuſed of an unnatural attachment to ſome of her own ſex. She is repreſented by Ovid as very far from handſome, and as ſhe was probably no longer young when ſhe became enamoured of the beautiful Phaon, his neglect of her is not at all to be wondered at. Unuſed to neglect, and unable to bear her diſappointment, ſhe repaired to the famous precipice of Leucate, popularly called the Lover's leap, and throwing herſelf into the ſea, terminated her life and her love. Of the poems of Sappho, two pieces are only left, *viz.* "An Ode to a Young Female," and "A Hymn to Venus," with ſome fragments quoted by the ſcholiaſts. Theſe have been very frequently publiſhed with the works of Anacreon, and with the other minor Greek poets. Catullus has given an elegant tranſlation of the ode: and Ambroſe Phillips has publiſhed an Engliſh verſion of the hymn. Some writers have mentioned two perſons of the name of Sappho, one of Ereſca, the other of Mitylene; the firſt the lover of Phaon, the ſecond the poeteſs: but they are generally regarded as the ſame.

Sappho invented the mixolydian mode, which was the higheſt of the five original modes, having its loweſt ſound, or proſlambanomenos, upon F ✳, the fourth line in the baſe of the Guido ſcale. The mixolydian was ſtill higher, by half a tone; the hypermixolydian a minor third higher; and the hyperlydian a fourth higher. Plato, deſirous of ſimplifying muſic, and of keeping the ſcale within moderate bounds, complains, in the third book of his Republic, of the licentiouſneſs of theſe acute modes. Now if the only difference in the modes was the place they occupied in the great ſyſtem, with reſpect to gravity or acuteneſs, the invention, as it was called, of this mixolydian mode, may have been ſuggeſted to Sappho, by her having a voice of higher pitch than her predeceſſors; ſhe was, perhaps, the Agujari of her time, and could tranſcend the limits of all former ſcales with equal facility. But though nature may have enabled this exquiſite poeteſs to ſing her verſes in a higher key than any one had done before, yet as it is allowed but to few to ſurpaſs the common boundaries of human faculties and talents, it is probable that her ſucceſſors, by attempting, with inferior organs, to aſcend thoſe heights, had given offence to Plato, and determined him to prohibit the uſe of this mode in his republic, as indecorous, and too effeminate even for women. If, however, it be true, that the characteriſtic of the modes depended partly, if not principally, upon the rhythm or cadence, it ſeems not an improbable conjecture, that beſides the difference of pitch, the novelty of Sappho's mixolydian mode might, in a great meaſure, conſiſt in her firſt applying to melody the meaſure called Sapphic, from her invention of it.

Horace adopted the Sapphic meaſure in many of his odes: among others, *Jam ſatis terris nivis*, &c.

Sappho formed an academy of females who excelled in muſic; and it was doubtleſs this academy which drew on her the hatred of the women of Mitylene, who accuſed her of being too fond of her own ſex; but will not her love for Phaon, and the fatal termination of her exiſtence, ſufficiently exculpate her? And might ſhe not have written the celebrated verſes "Bleſt as the immortal gods is he," &c. for another. Many of our poetical ladies whom we could name, have written excellent impaſſioned ſongs of complaint in a male character.

Beſides the ſtructure of verſe called Sapphic, ſhe invented the Æolic meaſure, compoſed elegies, epigrams, and nine books of lyric poetry.

SAPPO, in *Geography*, a town of Africa, in the kingdom of Yani, on the S. ſide of the Gambia. N. lat. 13° 30′. W. long. 14° 5′.

SAPY, a ſmall iſland in the Eaſt Indian ſea, near the coaſt of Cumbava. S. lat. 8° 33′. E. long. 119° 18′.

SAPY, *Straits of*, a narrow channel of the Eaſt Indian ſea, between the iſlands of Cumbava and Commodo.

SAPZIO, a town of Mingrelia; 30 miles E.N.E. of Ruki.

SAQUEM. See SUAQUEM.

SARA, a town of Japan, in the iſland of Xima; 15 miles N.W. of Taiſero.—Alſo, a river. See MADEIRA.

SARABACUS, or SABARACUS, in *Ancient Geography*, a town of India, on the other ſide of the Ganges. Ptolemy.

SARABAITES, SARABAITÆ, a name anciently given by the Egyptians to vagabond and ſtrolling monks, who travelled through various cities and provinces, and gained a maintenance by fictitious miracles, by ſelling relics to the multitude, and other ſimilar frauds.

The word is derived from the Hebrew סרב, *ſarab, to rebel.*

St. Benedict gives a frightful idea of theſe Sarabaites in the firſt chapter of his rule. Caſſian does not ſpeak a whit more favourably of them in his fourteenth conference; nor St. Jerom in his letter to Euſtochium.

Caſſian calls them, "Renuitæ; quia jugum regularis diſciplinæ renuunt."

SARABANDA, Ital. a ſaraband, the name of a grave Spaniſh dance, in triple time of ſix crotchets or ſix quavers in a bar; with generally a moving baſs. It was formerly danced with caſtanettes. At the latter end of the 17th

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century, and the beginning of the laſt, the ſaraband conſtantly conſtituted a part of every concerto, ſonata, ſolo, and ſuit of leſſons for the harpſichord.

In all Corelli's works there are ſarabands, and in every one of Handel's firſt book of leſſons; but it is now no longer uſed as a dance, or an air, in an inſtrumental compoſition.

The ſaraband is ſaid to be derived originally from the Saracens, as well as the chacone. It had its name, according to ſome authors, from a comedian called Sarabande, who firſt danced it in France. Others derive the name from the Spaniſh *ſarao, a ball.* It is uſually danced to the ſound of the guitar, or caſtanettes.

SARABARA, among the *Ancients*, a Mediſh or Babyloniſh garment, which reached only to the knees.

SARABAT, or SARAVAT, in *Geography*, a river of Aſiatic Turkey, which runs into the gulf of Smyrna, N. lat. 38° 40′. This was the ancient *Hermus*, which ſee.

SARABIA, a town of Chili, near the coaſt; 70 miles N. of Valparaiſo.

SARABOS, or SARABUS, a town of the iſland of Sardinia; 25 miles N.E. of Cagliari.

SARABRIS, in *Ancient Geography*, a town of Spain, in the Tarragonenſis. Ptol.

SARABUS, a river of India, on this ſide the Ganges, which diſcharged itſelf into this river. Ptol.

SARACA, in *Botany*, an unexplained name.—Linn. Mant. 13. Schreb. 480. Willd. Sp. Pl. v. 3. 856. Mart. Mill. Dict. v. 4. Juſſ. 422.—Claſs and order, *Diadelphia Hexandria*. Nat. Ord. *Lomentaceæ*, Linn. *Uncertain*, Juſſ.

Gen. Ch. *Cal.* none. *Cor.* of one petal, funnel-ſhaped; limb in four deep, ovate, ſpreading ſegments, the uppermoſt rather diſtant from the reſt; throat with an elevated border. *Stam.* Filaments ſix, ſetaceous, declining, inſerted into the throat of the corolla, three on each ſide, connected by their baſe; anthers furniſhed with a ſpur. *Piſt.* Germen ſuperior, ſtalked, oblong, compreſſed, the length of the ſtamens; ſtyle awl-ſhaped, declining, the length of the germen; ſtigma obtuſe. *Peric.* Legume?

Eſſ. Ch. Calyx none. Corolla funnel-ſhaped, four-cleft. Filaments three on each ſide of the throat. Legume ſtalked.

1. S. *indica.* Indian Saraca. Linn. Mant. 98. Willd. n. 1. (S. arboreſcens; Burm. Ind. 85. t. 25. f. 2.)—Native of Java. *Burmann.* A *tree*, with alternate, abruptly pinnate *leaves;* the *leaflets* three or four pair, ſtalked, oblong, entire. *Panicle* compoſed of alternate ovate *ſpikes*, each about half an inch long. *Bracteas* ſomewhat imbricated, oppoſite, in pairs, ovato-lanceolate. A very obſcure and little-known plant.

SARACE, in *Ancient Geography*, a town of the Colchide. Ptol.

SARACENS, in *Hiſtory*, a general appellation, under which the Arabian tribes from Mecca to the Euphrates were confounded by the Greeks and Latins, concerning the etymology of which there has been a difference of opinion. This name, uſed by Ptolemy and Pliny in a more confined, by Ammianus and Marcellinus in a larger, ſenſe, has been derived, ridiculouſly (ſays Gibbon) from Sarah, the wife of Abraham, obſcurely from the village of Saraka (Steph. de Urbibus), more plauſibly (ſays the hiſtorian of the Roman empire) from the Arabic words, which ſignify a *thieviſh* character, or *oriental* ſituation. (Hottinger Hiſt. Orient. Pococke, Specimen.) Forſter, in his "Journey from Bengal to England," deduces it from Schara, ſignifying in Arabic a deſart; but others think that it is manifeſtly derived from Sherkin, which ſignifies eaſtern. This appellation, though of unaſcertained origin, and though cuſtomarily pronounced by every Chriſtian mouth with horror and abhorrence, belonged to a people who roſe from obſcurity to a conſiderable degree of eminence, and who contributed, by their migrations through parts of Aſia, and alſo through Africa to Europe, to the diffuſion of ſcience. The laſt and moſt popular of theſe etymologies is refuted by Ptolemy, who expreſsly marks the weſtern and ſouthern poſition of the Saracens, then an obſcure tribe on the borders of Egypt. The appellation therefore cannot allude to any *national* character; and ſince it was impoſed by ſtrangers, it muſt be found, as Gibbon conceives, not in the Arabic, but in a foreign language.

At a period when ignorance and barbariſm prevailed through every part of the Roman empire, philoſophy found an aſylum among the Saracens, or Arabians, a people who, for ſeveral centuries after the appearance of Mahomet, were ſcarcely leſs celebrated in their literary and philoſophical, than in their civil and military character. Of their language, learning, philoſophy, &c. we have already given a brief account under the articles ARABIC *Language*, *Learning*, *Philoſophy*, &c. We ſhall here add ſome further particulars. During the firſt ages of Mahometaniſm, philoſophy found no protection in Arabia. Its dawn on this country, after true ſcience had been trampled under foot among the Saracens by ignorance and bigotry, may be traced to the acceſſion of the family of the Abbaſſides. (See ARABIC *Learning.*) After the death of Al-Mamon, who was not only learned himſelf, but an illuſtrious patron of the learned, which happened in the year 833, philoſophy continued its progreſs among the Saracens. The ſchools, which in the times of Raſhid and Al-Mamon had been inſtituted under the direction of John of Damaſcus, Honain, and others, long flouriſhed, and ſupplied a ſucceſſion of perſons, diſtinguiſhed by their literature and ſcience. Science, protected by the Saracen princes, after the empire was divided into ſeveral caliphates, in Aſia, Africa, and Europe, was, by means of their conqueſts, diſſeminated through a great part of the world. From the beginning of the 9th to the end of the 13th century, eminent ſchools of learning flouriſhed in the Saracen empire, among which the principal were thoſe at Bagdat, Baſſora, and Bochara, in the eaſt; at Alexandria and Cairo, in Egypt; at Morocco and Fez, in Barbary; and in ſeveral cities of Spain. The college at Bagdat was ſo flouriſhing at the beginning of the twelfth century, that it contained ſix thouſand men, including maſters and ſcholars. In that of Baſſora, the members of the ſociety formed a ſect for correcting the corruptions which had crept into Iſlamiſm, which they acknowledged could not be purged away without the aid of philoſophy. At Cairo, where, about the year 1000, twenty ſchools were inſtituted, the philoſophy of Ariſtotle was taught to great crowds of pupils from all parts of the world. The ſchools of Africa and Spain were diſtinguiſhed by the names of Averroës, Avicenna, and other eminent philoſophers, at a period when barbariſm univerſally prevailed among the weſtern Chriſtians. Many of theſe colleges were large and magnificent buildings, liberally endowed, furniſhed with valuable libraries, and adorned with learned profeſſors of languages, mathematics, aſtronomy, and philoſophy.

It was a neceſſary conſequence of the increaſe of knowledge among the Saracens, that the abſurdities of the ſuperſtition, which their illiterate prophet had eſtabliſhed, were perceived; and it became neceſſary, in order to defend it againſt the reaſonings, and the ridicule, of Chriſtians, Jews, and philoſophers, to give ſuch an explanation of the Koran, as might make it appear not wholly inconſiſtent with reaſon and common ſenſe. Hence aroſe a variety of forced interpretations of the law, each of which had its advocates, and became the foundation of a diſtinct ſect. Soon after the time when philoſophy began to be ſtudied among the Saracens, the followers of Mahomet were divided into ſix ſects, and theſe were afterwards ſubdivided into ſeventy-three. The riſe of theſe ſects was unqueſtionably owing to the advancement of knowledge. See MAHOMET and MAHOMETANISM.

Among the Saracens in Aſia, Mauritania, and Spain, we find a long catalogue of writers on metaphyſics, phyſics, logic, ethics, politics, mathematics, and aſtronomy; ſeveral of whom we ſhall here enumerate, and refer for a further account of the principal of them to their reſpective biographical articles in the courſe of this Cyclopædia. The firſt we ſhall mention was *Jacobus Al-Kendi* of Baſſora, who flouriſhed at the beginning of the 9th century, and acquired among his contemporaries the title of "The Philoſopher." Another Arabian, who deſerves notice among the teachers of philoſophy and mathematics, was *Thabet Ebn Korra*, of the ſect of the Sabii, who wrote a ſummary of their doctrine. Among the celebrated philoſophers of the ſchool of Bagdat was *Al-Farabi*, or *Abu Naſr*, who flouriſhed in the 10th century. As a philoſophical theologian, *Al-Aſhari*, or *Eſciari*, obtained high renown. He founded a new ſect, called Aſharians or Aſharites, among the Mahometans, (ſee SEFATIANS,) and died in the year 942. Another celebrated profeſſor of mathematical and phyſical ſciences, who adorned the ſchool of Bagdat at this time, was *Abul Huſein Eſophi.* In medicine and philoſophy a high degree of reputation was obtained by *Al-Raſi*, called alſo *Abubeker* and *Al-Manſor*, a native of Rai, in Perſia. Of *Avicenna*, or *Ibn-Sina*, born at Bochara in 978, an account has been already given. *Thograi*, a Perſian of Iſpahan, who was grand viſier to the ſultan Malich Maſhud, is celebrated for his poetical talents, a ſpecimen of which is given by Pococke, and for a commentary which he wrote upon the republic of Plato, a philoſopher to whom the Saracens paid little attention. Having incurred the diſpleaſure of the ſultan, he was put to death by his order in the year 1121. *Al-Gazel* of Tos, or Tus, in Aſia, was celebrated among the Mahometans, particularly for his "Demonſtration of Iſlamiſm," and his "Treatiſe on the Unity of God." He wrote ſeveral other treatiſes, and after having lived in ſplendour as a public preceptor at Bagdat, diſtributed his riches among the poor, aſſumed the habit of a hermit, and retired to Mecca. From Mecca he travelled into Syria and Egypt, and after ſtaying for ſome time at Cairo, and alſo at Alexandria, he returned to Bagdat, where he died. Among the Moors in Africa and Europe, we find at the period to which we now refer, ſeveral Arabian philoſophers; ſuch are *Eſſeriph Eſſachali*, a native of Sicily, famous for his knowledge of medicine, aſtrology, and coſmography. He died at Cividat, in Africa, in 1121. Among the Spaniſh Saracens were *Avenpace* and *Avenzoar*, whoſe names have been much celebrated. About the ſame time flouriſhed *Theophail* of Seville, preceptor to Maimonides and Averroës, and famous for his medical ſkill and for his knowledge of the Peripatetic philoſophy; he died about the cloſe of the 12th century: but of all the Arabian philoſophers and phyſicians, the moſt celebrated was *Averroës*, ſee his article.

In order to form a proper opinion of the nature and ſpirit of the Saracenic or Arabian philoſophy, it will be neceſſary to conſider its connection with Iſlamiſm, and alſo the peculiar circumſtances of the Saracen nation. Before the introduction of the Mahometan religion among the Arabians, in the year 622, their manner of living was unfavourable to the progreſs of knowledge. This was unſettled and roving, and their chief attention was occupied about their flocks and herds. Of the introduction and influence of Mahometaniſm we have already, under different heads, to which we have above referred, given as ample an account as our limits will allow. After the acceſſion of the Abbaſſidean dynaſty, learning and learned men, as we have before obſerved, enjoyed the countenance and protection of the Arabian princes; but philoſophy was called in rather to perform the office of a ſervile auxiliary to Iſlamiſm, than to reſume her natural authority over the human mind, and reſcue it from the tyranny of ſuperſtition. In the moſt enlightened period of Arabian philoſophy, the utmoſt that was attempted was to apply the principles of philoſophy to the correction of the abſurdities of Mahometaniſm. Hence the abſurd dogmas of the Koran were either gloſſed over, or blended with more rational tenets, ſo that the Mahometans became thus more attached to a ſyſtem founded in abſurdity and ſupported by impoſture: and moreover, when it was diſcovered that the letter of the Mahometan law could not eaſily accord with philoſophical notions, and difficulties were perceived to reſult from an attempt to unite them, ſome reſolved at once to treat all theſe ſpeculations with contempt, and, without the trouble of inquiry, to acquieſce in the doctrines of the prevailing religion, however irrational: whilſt others perplexed themſelves with ſubtle diſputations, till they were loſt in the miſts of ſcepticiſm, or in the thick darkneſs of atheiſm. The prevalence of the Peripatetic philoſophy cauſed an almoſt inſurmountable barrier in the way of diſſeminating juſt notions, either of ſcience or of religion. Philoſophy among the Saracens derived its tone and complexion from the Peripatetic ſyſtem; and in every branch of ſcience, with reſpect to which Ariſtotle led the way, the Arabian philoſophers followed him as an infallible guide. This was particularly the caſe with regard to logic, metaphyſics, and morals. The mathematical ſciences were cultivated with great induſtry by the Arabians, and in arithmetic their inventions and improvements were valuable; but in geometry they made no addition to the treaſures tranſmitted by the Greek mathematicians, but rather corrupted their doctrine. In medicine, to which the Arabians paid much attention, their chief guides were Hippocrates and Galen; but by attempting to reconcile the doctrine of theſe writers with the phyſiology of Ariſtotle, they introduced into their medical ſyſtem many inconſiſtent tenets, and many uſeleſs refinements. With regard to botany, they miſunderſtood the meaning of Dioſcorides, whom they wiſely choſe as their guide; nor were they more ſucceſsful in other branches of ſcience. Their diſcoveries in chemiſtry were not inconſiderable, but they were concealed under the occult myſteries of alchemy. In aſtronomy they made few improvements upon the Greek authors whom they followed. If, indeed, aſtrology deſerves the name of a ſcience, which owes its exiſtence altogether to ignorance, ſuperſtition, and impoſture, in this the Arabians muſt be allowed to have excelled all other philoſophers. Upon the whole, it may be obſerved, that when philoſophy, in order to eſcape the violence of barbariſm, took refuge in Arabia, ſhe met with no very favourable reception. The Saracens were too much under the dominion of authority and prejudice, to be capable of proſecuting the ſearch after truth with an independent ſpirit. Wanting ſufficient confidence in their own abilities, they choſe rather to put them under the direction of Ariſtotle, or any other guide, than to ſpeculate for themſelves with the freedom of true philoſophy: the conſequence was, that, notwithſtanding all their induſtry and ingenuity, they contributed little towards enlarging the field of human knowledge. We do not mean to aſſert that there were no great men among the Arabians, or that philoſophy owed nothing to their exertions: we freely confeſs, that it was in a great meaſure owing to the light of learning and ſcience, which ſhone in Arabia, that the whole earth was not at this time overwhelmed with intellectual darkneſs. But thus much may be with confidence aſſerted, that the advances which the Arabians made in knowledge were very inconſiderable, compared with what has been done in modern times; and that, in the preſent enlightened ſtate of the world, ſcience can ſuffer no material loſs, if their writings be permitted quietly to repoſe in that oblivion to which time has conſigned them. The Arabians certainly fell far ſhort of the Greeks in general knowledge; and it was only in a very few particulars that they made any additions to the fund of ancient wiſdom. Since the original writings of the Greeks are come down to the preſent times, we have little reaſon to regret the want of thoſe remains of Arabian learning, which are ſtill untranſlated.

According to Al-Gazel, the doctrine of the Arabians concerning God and ſpiritual natures were as follows:

God created all things from nothing, and doth whatever he pleaſeth. In his eſſence he is one, without companion or equal, eternal and immutable. He has no corporeal form, nor is circumſcribed by any limits. He neither exiſts in any thing, nor does any thing exiſt in him. The divine eſſence admits of no multiplicity; his attributes therefore do not ſubſiſt in his eſſence, but are his eſſence itſelf. That God exiſts, is known by the apprehenſion of the intellect in this world, and in the eternal habitation of the holy and bleſſed, by immediate viſion and intuition. Whatever happens in nature, happens according to the will and appointment of God, whoſe decrees are in all things irreſiſtible. The law, or word of God, is eternal and uncreated. God has created all things for the manifeſtation of his glory, and will reward his worſhippers, not according to their merit, but according to his own munificence. Angels, the ſervants of the moſt high God, are clothed with ethereal bodies of different forms, and have different offices aſſigned them; and, though neither their names nor diſtinctions are known, they ought to be loved and honoured. The ſouls of men are immortal, and their bodies will be raiſed from the dead. In the interval between death and the reſurrection, ſouls remain in an intermediate ſtate; and after the reſurrection, the good and faithful ſhall be rewarded, and the wicked and unbelieving ſhall be puniſhed: but they who, after having ſuffered puniſhment, ſhall confeſs One God, will, through his favour, be releaſed from their confinement, and placed among the bleſſed.

With reſpect to morals, Mahomet, notwithſtanding all his pretenſions, did little. Although he laid a good foundation in the belief of one God, and a future ſtate of rewards and puniſhments, he was ſo far from raiſing hereupon a ſuperſtructure of rational ethics, that he relaxed the bonds of morality; partly, by repreſenting future happineſs as chiefly conſiſting in corporeal and ſenſual pleaſures; and partly, by giving his followers a code of laws, in which atonement is made for moral defects and irregularities by the obſervance of ſuperſtitious rites and ceremonies. After the introduction of philoſophy among the Arabians, the ethical ſyſtem of Mahomet was, however, materially improved; ſo that it would be unfair to aſcribe to the whole Mahometan world, or even to the Mahometan religion itſelf, as it was in proceſs of time corrected by philoſophy, all the defects and errors of the moral doctrine taught by the illiterate prophet.

The fundamental precepts of Iſlamiſm are theſe: Believe in one God, and in Mahomet the prophet of God. Perform the appointed ablutions. Pray to God devoutly at the ſtated ſeaſons, and according to the preſcribed forms. Keep ſtrictly the faſts enjoined by the law, eſpecially the thirty days of the month Ramadan. Let your prayers and faſtings be accompanied with alms-givings. Viſit the holy temple at Mecca.

Beſides the precepts of the Koran, the Arabians have always had among them leſſons of moral wiſdom, written in verſe, under the form of aphoriſms: for a ſpecimen, ſee the article *Perſian* ROSARY. Brucker's Philoſ. by Enf. vol. ii. See ALCORAN, ARABIAN *Religion*, MAHOMET, and MAHOMETANISM.

SARACEN's *Confound*, in *Botany*. See SOLIDAGO.

SARACEN's *Confound*, *True*. See SENECIO.

SARACHINUS, in *Ichthyology*, a name given by Charleton and others, to the fiſh called by the generality of authors the *thriſſa*, by us the *ſhad*, or mother of the herrings.

Authors have given names to the herring kinds, according to their different growth and ſize, and multiplied the ſpecies much beyond what they ought to be. Artedi obſerves, that the *agonus* and *ſarachinus* are only herrings of different growth, and that the *alauſa minor* of authors is the ſame with the *agonus*. See CLUPEA.

SARACUS, a name given by ſome authors to a ſpecies of ſea-fiſh of the herring kind, more uſually called *agonus*, and by many ſuſpected to have no eſſential difference from the *alauſa*, or ſhad, but to be the ſame fiſh in another ſtate.

SARAGA, in *Ancient Geography*, a town ſituated in the country of the Senes, according to Ptolemy.

SARAGENA, a town of Africa, in the interior of Marmarica. Ptol.

SARAGOSSA, or ZARAGOZA, by ancient Spaniſh authors written *Caragoça*, in *Geography*, an ancient, large, and wealthy city of Spain, the capital of Aragon, was founded, as ſome have ſaid, by the Phœnicians, who gave it the name of *Salduba* or *Saldivia*. It was in a flouriſhing ſtate under the Romans, and being colonized by Auguſtus, it was called *Cæſarea*, or *Cæſarea-Auguſta*, of which the preſent name is a corruption. The Goths, conducted by Euric, their king, became maſters of it about the year 470. The Saracens, under Muſa, their general, drove the Goths from it in 712, and took poſſeſſion of it in the name of the caliph of Damaſcus; but in 753 it was taken by the Moor Zuzif, governor-general of Spain. The inhabitants attempting to ſhake off the yoke of the new empire, formed a republic in 825, but they were ſoon compelled to implore the clemency of the Mooriſh king. At length this town became, A.D. 1017, the capital of a ſmall empire, about the time when the ſeveral governors in different parts of Spain uſurped ſupreme power. The governor of Saragoſſa aſſumed kingly power, and tranſmitted his crown to his poſterity, who retained it till Alphonſo I., king of Aragon, made himſelf maſter of the town in December 1115, after a ſiege of eight months: he then made it the capital of his kingdom, and the reſidence of the princes who ſucceeded him. It remained the capital of Aragon until that country became, in the 16th century, ſimply a province of the Spaniſh monarchy, by the marriage of its king Ferdinand the Catholic with Iſabella, heireſs of the kingdoms of Leon and Caſtile.

Saragoſſa is ſituated on a fertile plain, on the Ebro, at the conflux of two other rivers, the Galego and the Huerva, one running from the N., the other a conſiderable ſtream, deſcending from the mountains of the S. The Ebro ſeparates the town from its ſuburbs, and is navigable; the other two rivers concur in fertilizing the neighbouring country. The new canal of Aragon paſſes through the lands in its vicinity. The adjacent fields are well cultivated, and its extenſive gardens are very productive; and its climate is moderate, between the extremes of heat and cold. Although this town is one of the largeſt in Spain, its population does not correſpond to its ſize. From an enumeration made in 1787, it has been eſtimated at the number of 42,600 perſons. It has eight gates, beſides the four old ones in the wall of Auguſtus, and two bridges over the Ebro, one of wood, and another of ſtone. The ſtreets of Saragoſſa are, for the moſt part, narrow, irregular, and paved with rough pebbles. Some, however, are ſtraight, long, and ſpacious; and particularly that called Calle Santa, or Holy-ſtreet, becauſe it was the place of the martyrdom of the firſt victims of the faith in Saragoſſa: this ſtreet is alſo denominated Calls del Corſo. The houſes are generally old, but regularly built; and here are ſeveral edifices, which deſerve attention: particularly the new tower, called the leaning tower, reſembling that of Piſa; the church of San Cayetano, and thoſe of the Cordeliers, of St. Lucia, of the Faretas, of the Convaleſcents, of St. Paul, of Notre Dame del Portillo, and of the Barefoot Auguſtines; the college of La Manteria; the convent of the Dominicans; the palace of the Inquiſition; the convent of the Jeronymites, called Santa Engracia; and the metropolitan church, called La Seu, diſtinguiſhed by its beautiful front and its high tower. The church of Nueſtra Dona del Pilar is alſo a grand and ſuperb building; the principal altar is in the Gothic ſtyle, conſtructed almoſt wholly of alabaſter, and exhibiting a mixture of different kinds of ſculpture. The arts, it is ſaid, have combined to decorate the interior of this church. In the centre of this cathedral there is an edifice, which is ſtrikingly beautiful. The principal front is a chapel of our Lady of the Pillar, who appeared upon this very pillar to St. James, and afterwards gave to him the image, which is worſhipped at her altar. Over this there is a dome, correſponding to the great dome, under which it ſtands, ſerving by way of canopy to the image of the Virgin. The three other fronts of this elegant tabernacle are in like manner chapels. Beſides the great dome, there are many ſmaller domes ſurrounding it, each with elegant paintings in compartments, the ſubjects of which are hiſtorical, taken from the ſacred writings, or from the legends of the ſaints, to whom the chapels and altars are dedicated. Theſe are executed by don Franciſco Bayeu, firſt painter to the king; and the architect, under the inſpection of whom theſe domes have been conſtructed, is Rodriguez, of whoſe taſte and judgment theſe decorations and improvements will remain a laſting monument.

The wealth of this cathedral is ineſtimable, in ſilver, gold, precious ſtones, and rich embroidery, ſent by all the Catholic ſovereigns of Europe to deck its prieſts, and to adorn its altars. Many of theſe preſents, being modern, are worthy of attention for their elegance, as well as for the value of their pearls, diamonds, emeralds, and rubies. In a word, whatever wealth could command, or human art could execute, has been collected to excite the admiration of all who view the treaſures of this church.

The Lonja, *i. e.* the reſort of the merchants, or the Exchange, round which are the buſts of moſt of the kings of Aragon, deſerves to be mentioned: its large hall is the place where the municipal body aſſembles. Oppoſite to this is the Hotel of the Deputation, ſerving for the ſittings of the royal audience. Saragoſſa has a number of pleaſant promenades. This city has a ſee, which was at firſt epiſcopal under the Goths; it was aboliſhed under the Moors, and re-eſtabliſhed by king Alphonſo I. It was at laſt raiſed to an archbiſhopric, containing ſeveral ſuffragans, 365 pariſhes, one cathedral chapter, and two collegiate ones. This town has 17 pariſhes, 24 convents of monks, four houſes of regular clergy, 13 convents of nuns, a houſe of Baguine nuns, a college of virgins, a houſe of penitents, four churches and houſes exempt from the juriſdiction of the ordinary, five hoſpitals, and a ſeminary occupied by eccleſiaſtics, who chiefly devote themſelves to miſſions. The houſe of Pity, for which an edifice was finiſhed in 1792, is an excellent eſtabliſhment, containing 700 perſons, of all ages, and of both ſexes, who are maintained and employed in ſpinning ſilk, in carding and ſpinning wool, and in making camlets and ſome ſilk ſtuffs. The clergy of various deſcriptions are very numerous. Saragoſſa is the place of reſidence of the general chapter of the kingdom of Aragon, the chief place of the intendant's juriſdiction, and the ſeat of the royal audience, which is the ſupreme court of this province. The civil government of this town is carried on by a criminal judge, and by a certain number of magiſtrates. It has two alcade mayors, who adminiſter juſtice in concurrence with the judge, a tribunal of the inquiſition, an univerſity, an academy of the fine arts, a ſociety of the friends of the country, a ſchool for drawing, one for agriculture, and one where mathematics, moral philoſophy, the law of nations, and the elements of commerce and public economy are taught. The univerſity contains near 2000 ſtudents, and for their inſtruction the doctors conſtantly reſiding are, 40 in theology, 20 for the canon law, 36 for civil law, 17 for medicine, and 8 for arts. The foundation of this ſeminary was laid A.D. 1118, on the expulſion of the Moors; but the univerſity was not incorporated till A.D. 1474, and from that period it has conſtantly been cheriſhed and protected by the ſovereigns of Aragon.

At Saragoſſa are two public libraries, which are open for the ſtudious, who owe both to the beneficence of two individuals; one is in the convent of St. Ildefonſo, belonging to the Dominicans, and contains 1600 volumes, which were given by the marquis de la Compueſta: it has no modern books. The other is in the ſeminary, and is the ancient library of don Emanuel da Roda, formerly a ſecretary of ſtate, who began to collect it at Rome, and augmented it at Madrid during his miniſtry; it is handſome, numerous, and well-choſen, and contains valuable collections.

The inhabitants of Saragoſſa indulge to no great expence or luxury in their dreſs or amuſements: the former is in general plain and ſimple; and the latter are reſtricted and partial. Although it is one of the handſomeſt cities in Spain, extenſive, delightfully ſituated, under a temperate ſky, and capable of being amply ſupplied with all the conveniences of life, it is without induſtry and without commerce. It is ſaid, that the clergy poſſeſs the greateſt portion of the wealth of the place. However that be, Laborde obſerves, that all here is ſerious and regular, not to ſay dull and monotonous: here are no ſociety, no parties, nor any kind of entertainment. It ſeems quite deſtitute of every reſource, becauſe the inhabitants make no effort to obtain any: accuſtomed to this ſtate of apathy and languor, they have not an idea of the poſſibility of delivering themſelves from it. The canal, however, which has been lately made near the town, may certainly, by reviving commerce, call forth the activity, and develope the happy genius of the inhabitants. This canal was deſigned for forming a communication by the Ebro from ſea to ſea, between S. Ander, in the bay of Biſcay, and Tortoſa, on the borders of the Mediterranean, a diſtance of more than one hundred Spaniſh leagues. It was begun in 1529, by order of Charles I., ſuſpended in 1538, recommenced in 1566, by order of

Philip II., again abandoned, and again began in 1770, under Charles III. It has already coſt a very large ſum; but Aragon has experienced the advantage of it, and agriculture has aſſumed a new appearance in the countries which are watered by the canal. Saragoſſa is diſtant 160 miles N.E. from Madrid. N. lat. 41° 44′. W. long. 0° 48′.

SARAGURA, a town of South America, in the province of Quito; 25 miles N. of Laxa.

SARAÏNASKA, a town of Walachia; 35 miles E.N.E. of Buchareſt.

SARAK, a ſmall iſland in the Perſian gulf; 140 miles W. of Ormus.

SARALBE, a town of France, in the department of the Moſelle, and chief place of a canton, in the diſtrict of Sarraguemines; 7 miles S. of Sarraguemines. The place contains 1980, and the canton 12,009 inhabitants, on a territory of 270 kiliometres, in 22 communes. N. lat. 49°. E. long. 7° 7′.

SARALUS, in *Ancient Geography*, a town of Aſia, in Galatia. Ptol.

SARAMANOS, in *Geography*, a town of Peru, in the dioceſe of Lima; 25 miles N.W. of Leon de Guanuco.

SARAMEK, a town of Perſia, in the province of Choraſan; 60 miles N.W. of Herat.

SARAMENA, in *Ancient Geography*, a country of Aſia Minor, towards the Amiſſus. Strabo.

SARAMON, in *Geography*, a town of France, in the department of the Gers; 15 miles E. of Mirande. N. lat. 43° 31′. E. long. 0° 51′.

SARANAC, a river of America, in the ſtate of New York, which runs into lake Champlain at Plattſburgh.

SARAND, a river of Hungary, which runs from the Balaton lake, and paſſes by Symontornya into the Kopan.

SARANGA, in *Ancient Geography*, a country of India, on the ſea-coaſt, between the mouth of the river Indus and that of the Arbis. Arrian.

SARANGÆ, or SARANGÆI, or *Zarangæ*, a people who inhabited the N.E. part of Perſia, near the Choraſmii, Cantali, and Attaſini, according to Pliny. This country correſponded to that part of Perſia, which was comprehended under the preſent province of Segeſtan or Seiſtan. The Sarangeans compoſed a part of the army of Xerxes. They were dreſſed in ſplendid and varied coloured habits, and armed with bows and javelins. They were the Euergetææ of the Greeks; a title beſtowed upon them by Cyrus, in gratitude for the relief which they afforded him, on his return from an unſucceſsful expedition into Scythia.

SARANGPOUR, in *Geography*, a town of Thibet; 140 miles N.E. of Sirinagur. N. lat. 32° 25′. E. long. 80° 28′.

SARANI, in *Ancient Geography*, a people who inhabited a canton of Phœnicia, according to Procopius.

SARANSK, in *Geography*, a town of Ruſſia, in the government of Penza; 48 miles N. of Penza. N. lat. 52° 15′. E. long. 45° 14′.

SARAPIDIS INSULA, in *Ancient Geography*, an iſland ſituated on the coaſt of Arabia, in the Sachalite gulf, adjoining to the ſeven iſles of Zenobia. Ptolemy.

SARAPILLY, in *Geography*, a town of Hindooſtan, in Golconda; 30 miles E. of Hydrabad.—Alſo, a town of Hindooſtan, in the Carnatic; 12 miles S. of Nellore.

SARAPIQUI, a river of Mexico, in the province of Nicaragua, which runs into the Deſaguadero; 5 miles S. of St. Carlos.

SARAPUT, a town of Ruſſia, in the government of Viatka; 132 miles S.S.E. of Viatka. N. lat. 56° 32′. E. long. 52° 26′.

SARAQUINO, a ſmall iſland in the Grecian Archipelago. N. lat. 39° 27′. E. long. 24° 4′.

SARASA, in *Ancient Geography*, a town of Aſia, in the country of the Parthians, formerly called Carduchi, according to Strabo.

SARASIN, JOHN FRANCIS, in *Biography*, was born in 1604, at Hermanville, near Caen. In this city he was educated; he then came to Paris, where his wit, gallantry, and pleaſing manners rendered him a general favourite. He became particularly attached to the prince of Conti, who appointed him his ſecretary. He reſided a conſiderable time in Germany, and acquired the eſteem of the princeſs Sophia, daughter of the king of Bohemia. A variety of works in proſe and verſe made him known in the literary world. He died in 1654, and very ſoon after this event his works were publiſhed collectively by Menage, in 1656. The proſe conſiſts chiefly of "A Hiſtory of the Siege of Dunkirk, by the Prince of Condè;" "The Hiſtory of the Walſtein Conſpiracy;" "A Dialogue on Love;" and "Opinions on the Name and Game of Cheſs." The poetical pieces conſiſt of eclogues, elegies, ſonnets, epigrams, and other ſhort pieces. All his works are ſaid to diſplay facility and vivacity, with much delicacy of ſentiment, but not under the diſcipline of a correct taſte and judgment.

SARASU, in *Geography*, a river of Turkeſtan, which runs into the Lirr at Jenghikand.

SARASWATI, in *Mythology*, the name of the conſort of the Hindoo deity Brahma. The Aſiatic Miſcellany, vol. i. and the laſt volume of the works of ſir Wm. Jones, contain a hymn by that elegant writer addreſſed to Saraſwati.

> "Sweet grace of Brahma's bed;
> Whoſe ſigh is muſic, and each tear a pearl."

From the argument prefixed to it we extract ſome paſſages deſcriptive of this intereſting ſubject of Eaſtern fable, and generally of its mythology.

"The Hindoo goddeſſes are uniformly repreſented as the ſubordinate *powers* of their reſpective lords: thus Lakſhmi, the conſort of Viſhnu the *preſerver*, is the goddeſs of *abundance* and *proſperity*; Bhavani, or Parvati, the wife of Siva, is the general power of *fecundity*; and Saraſwati, whoſe huſband is the *creator* Brahma, poſſeſſes the powers of imagination and invention, which may juſtly be termed *creative*. She is, therefore, adored as the patroneſs of the fine arts, eſpecially of muſic and rhetoric; as the inventreſs of the Sanſcrit language, and of the ſciences which writing perpetuates; ſo that her attributes correſpond with thoſe of Minerva *Muſica*, in Greece or Italy, who invented the flute, and preſided over literature. In this character ſhe is addreſſed in the hymn; and particularly as the *goddeſs of harmony*, ſince the Indians uſually paint her with a muſical inſtrument in her hand. The ſeven notes, an artful combination of which conſtitutes *muſic*, and variouſly affects the paſſions, are feigned to be her earlieſt production; and the greateſt part of the hymn exhibits a correct delineation of the *Ragmala*, or *necklace of muſical modes*, which may be conſidered as the moſt pleaſing invention of the ancient Hindoos, and the moſt beautiful union of painting with poetical mythology, and the genuine theory of muſic. A full diſcuſſion of ſo copious a ſubject would require a ſeparate diſſertation; but here it will be ſufficient to ſay that almoſt every illuſion and every epithet in the poem, as well as the names, are ſelected from approved treatiſes, either originally Perſian, or tranſlated from the Sanſcrit, which contain as lively a diſplay of genius as human imagination ever exhibited."

Such of our readers as may be unacquainted with the hymn rivers concur in fertilizing the neighbouring country. The new canal of Aragon paſſes through the lands in its vicinity. The adjacent fields are well cultivated, and its extenſive gardens are very productive; and its climate is moderate, between the extremes of heat and cold. Although this town is one of the largeſt in Spain, its population does not correſpond to its ſize. From an enumeration made in 1787, it has been eſtimated at the number of 42,600 perſons. It has eight gates, beſides the four old ones in the wall of Auguſtus, and two bridges over the Ebro, one of wood, and another of ſtone. The ſtreets of Saragoſſa are, for the moſt part, narrow, irregular, and paved with rough pebbles. Some, however, are ſtraight, long, and ſpacious; and particularly that called Calle Santa, or Holy-ſtreet, becauſe it was the place of the martyrdom of the firſt victims of the faith in Saragoſſa: this ſtreet is alſo denominated Calls del Corſo. The houſes are generally old, but regularly built; and here are ſeveral edifices, which deſerve attention: particularly the new tower, called the leaning tower, reſembling that of Piſa; the church of San Cayetano, and thoſe of the Cordeliers, of St. Lucia, of the Faretas, of the Convaleſcents, of St. Paul, of Notre Dame del Portillo, and of the Barefoot Auguſtines; the college of La Manteria; the convent of the Dominicans; the palace of the Inquiſition; the convent of the Jeronymites, called Santa Engracia; and the metropolitan church, called La Seu, diſtinguiſhed by its beautiful front and its high tower. The church of Nueſtra Dona del Pilar is alſo a grand and ſuperb building; the principal altar is in the Gothic ſtyle, conſtructed almoſt wholly of alabaſter, and exhibiting a mixture of different kinds of ſculpture. The arts, it is ſaid, have combined to decorate the interior of this church. In the centre of this cathedral there is an edifice, which is ſtrikingly beautiful. The principal front is a chapel of our Lady of the Pillar, who appeared upon this very pillar to St. James, and afterwards gave to him the image, which is worſhipped at her altar. Over this there is a dome, correſponding to the great dome, under which it ſtands, ſerving by way of canopy to the image of the Virgin. The three other fronts of this elegant tabernacle are in like manner chapels. Beſides the great dome, there are many ſmaller domes ſurrounding it, each with elegant paintings in compartments, the ſubjects of which are hiſtorical, taken from the ſacred writings, or from the legends of the ſaints, to whom the chapels and altars are dedicated. Theſe are executed by don Franciſco Bayeu, firſt painter to the king; and the architect, under the inſpection of whom theſe domes have been conſtructed, is Rodriguez, of whoſe taſte and judgment theſe decorations and improvements will remain a laſting monument.

The wealth of this cathedral is ineſtimable, in ſilver, gold, precious ſtones, and rich embroidery, ſent by all the Catholic ſovereigns of Europe to deck its prieſts, and to adorn its altars. Many of theſe preſents, being modern, are worthy of attention for their elegance, as well as for the value of their pearls, diamonds, emeralds, and rubies. In a word, whatever wealth could command, or human art could execute, has been collected to excite the admiration of all who view the treaſures of this church.

The Lonja, *i. e.* the reſort of the merchants, or the Exchange, round which are the buſts of moſt of the kings of Aragon, deſerves to be mentioned: its large hall is the place where the municipal body aſſembles. Oppoſite to this is the Hotel of the Deputation, ſerving for the ſittings of the royal audience. Saragoſſa has a number of pleaſant promenades. This city has a ſee, which was at firſt epiſcopal under the Goths; it was aboliſhed under the Moors, and re-eſtabliſhed by king Alphonſo I. It was at laſt raiſed to an archbiſhopric, containing ſeveral ſuffragans, 365 pariſhes, one cathedral chapter, and two collegiate ones. This town has 17 pariſhes, 24 convents of monks, four houſes of regular clergy, 13 convents of nuns, a houſe of Baguine nuns, a college of virgins, a houſe of penitents, four churches and houſes exempt from the juriſdiction of the ordinary, five hoſpitals, and a ſeminary occupied by eccleſiaſtics, who chiefly devote themſelves to miſſions. The houſe of Pity, for which an edifice was finiſhed in 1792, is an excellent eſtabliſhment, containing 700 perſons, of all ages, and of both ſexes, who are maintained and employed in ſpinning ſilk, in carding and ſpinning wool, and in making camlets and ſome ſilk ſtuffs. The clergy of various deſcriptions are very numerous. Saragoſſa is the place of reſidence of the general chapter of the kingdom of Aragon, the chief place of the intendant's juriſdiction, and the ſeat of the royal audience, which is the ſupreme court of this province. The civil government of this town is carried on by a criminal judge, and by a certain number of magiſtrates. It has two alcade mayors, who adminiſter juſtice in concurrence with the judge, a tribunal of the inquiſition, an univerſity, an academy of the fine arts, a ſociety of the friends of the country, a ſchool for drawing, one for agriculture, and one where mathematics, moral philoſophy, the law of nations, and the elements of commerce and public economy are taught. The univerſity contains near 2000 ſtudents, and for their inſtruction the doctors conſtantly reſiding are, 40 in theology, 20 for the canon law, 36 for civil law, 17 for medicine, and 8 for arts. The foundation of this ſeminary was laid A.D. 1118, on the expulſion of the Moors; but the univerſity was not incorporated till A.D. 1474, and from that period it has conſtantly been cheriſhed and protected by the ſovereigns of Aragon.

At Saragoſſa are two public libraries, which are open for the ſtudious, who owe both to the beneficence of two individuals; one is in the convent of St. Ildefonſo, belonging to the Dominicans, and contains 1600 volumes, which were given by the marquis de la Compueſta: it has no modern books. The other is in the ſeminary, and is the ancient library of don Emanuel da Roda, formerly a ſecretary of ſtate, who began to collect it at Rome, and augmented it at Madrid during his miniſtry; it is handſome, numerous, and well-choſen, and contains valuable collections.

The inhabitants of Saragoſſa indulge to no great expence or luxury in their dreſs or amuſements: the former is in general plain and ſimple; and the latter are reſtricted and partial. Although it is one of the handſomeſt cities in Spain, extenſive, delightfully ſituated, under a temperate ſky, and capable of being amply ſupplied with all the conveniences of life, it is without induſtry and without commerce. It is ſaid, that the clergy poſſeſs the greateſt portion of the wealth of the place. However that be, Laborde obſerves, that all here is ſerious and regular, not to ſay dull and monotonous: here are no ſociety, no parties, nor any kind of entertainment. It ſeems quite deſtitute of every reſource, becauſe the inhabitants make no effort to obtain any: accuſtomed to this ſtate of apathy and languor, they have not an idea of the poſſibility of delivering themſelves from it. The canal, however, which has been lately made near the town, may certainly, by reviving commerce, call forth the activity, and develope the happy genius of the inhabitants. This canal was deſigned for forming a communication by the Ebro from ſea to ſea, between S. Ander, in the bay of Biſcay, and Tortoſa, on the borders of the Mediterranean, a diſtance of more than one hundred Spaniſh leagues. It was begun in 1529, by order of Charles I., ſuſpended in 1538, recommenced in 1566, by order of

Philip II., again abandoned, and again began in 1770, under Charles III. It has already coſt a very large ſum; but Aragon has experienced the advantage of it, and agriculture has aſſumed a new appearance in the countries which are watered by the canal. Saragoſſa is diſtant 160 miles N.E. from Madrid. N. lat. 41° 44′. W. long. 0° 48′.

SARAGURA, a town of South America, in the province of Quito; 25 miles N. of Laxa.

SARAINASKA, a town of Walachia; 35 miles E.N.E. of Buchareſt.

SARAK, a ſmall iſland in the Perſian gulf; 140 miles W. of Ormus.

SARALBE, a town of France, in the department of the Moſelle, and chief place of a canton, in the diſtrict of Sarraguemines; 7 miles S. of Sarraguemines. The place contains 1980, and the canton 12,009 inhabitants, on a territory of 270 kiliometres, in 22 communes. N. lat. 49°. E. long. 7° 7′.

SARALUS, in *Ancient Geography*, a town of Aſia, in Galatia. Ptol.

SARAMANOS, in *Geography*, a town of Peru, in the dioceſe of Lima; 25 miles N.W. of Leon de Guanuco.

SARAMEK, a town of Perſia, in the province of Choraſan; 60 miles N.W. of Herat.

SARAMENA, in *Ancient Geography*, a country of Aſia Minor, towards the Amiſſus. Strabo.

SARAMON, in *Geography*, a town of France, in the department of the Gers; 15 miles E. of Mirande. N. lat. 43° 31′. E. long. 0° 51′.

SARANAC, a river of America, in the ſtate of New York, which runs into lake Champlain at Plattſburgh.

SARAND, a river of Hungary, which runs from the Balaton lake, and paſſes by Symontornya into the Kopan.

SARANGA, in *Ancient Geography*, a country of India, on the ſea-coaſt, between the mouth of the river Indus and that of the Arbis. Arrian.

SARANGÆ, or SARANGÆI, or *Zarangæ*, a people who inhabited the N.E. part of Perſia, near the Choraſmii, Cantali, and Attaſini, according to Pliny. This country correſponded to that part of Perſia, which was comprehended under the preſent province of Segeſtan or Seiſtan. The Sarangeans compoſed a part of the army of Xerxes. They were dreſſed in ſplendid and varied coloured habits, and armed with bows and javelins. They were the Euergetææ of the Greeks; a title beſtowed upon them by Cyrus, in gratitude for the relief which they afforded him, on his return from an unſucceſsful expedition into Scythia.

SARANGPOUR, in *Geography*, a town of Thibet; 140 miles N.E. of Sirinagur. N. lat. 32° 25′. E. long. 80° 28′.

SARANI, in *Ancient Geography*, a people who inhabited a canton of Phœnicia, according to Procopius.

SARANSK, in *Geography*, a town of Ruſſia, in the government of Penza; 48 miles N. of Penza. N. lat. 52° 15′. E. long. 45° 14′.

SARAPIDIS INSULA, in *Ancient Geography*, an iſland ſituated on the coaſt of Arabia, in the Sachalite gulf, adjoining to the ſeven iſles of Zenobia. Ptolemy.

SARAPILLY, in *Geography*, a town of Hindooſtan, in Golconda; 30 miles E. of Hydrabad.—Alſo, a town of Hindooſtan, in the Carnatic; 12 miles S. of Nellore.

SARAPIQUI, a river of Mexico, in the province of Nicaragua, which runs into the Deſaguadero; 5 miles S. of St. Carlos.

SARAPUT, a town of Ruſſia, in the government of Viatka; 132 miles S.S.E. of Viatka. N. lat. 56° 32′. E. long. 52° 26′.

SARAQUINO, a ſmall iſland in the Grecian Archipelago. N. lat. 39° 27′. E. long. 24° 4′.

SARASA, in *Ancient Geography*, a town of Aſia, in the country of the Parthians, formerly called Carduchi, according to Strabo.

SARASIN, JOHN FRANCIS, in *Biography*, was born in 1604, at Hermanville, near Caen. In this city he was educated; he then came to Paris, where his wit, gallantry, and pleaſing manners rendered him a general favourite. He became particularly attached to the prince of Conti, who appointed him his ſecretary. He reſided a conſiderable time in Germany, and acquired the eſteem of the princeſs Sophia, daughter of the king of Bohemia. A variety of works in proſe and verſe made him known in the literary world. He died in 1654, and very ſoon after this event his works were publiſhed collectively by Menage, in 1656. The proſe conſiſts chiefly of "A Hiſtory of the Siege of Dunkirk, by the Prince of Condè;" "The Hiſtory of the Walſtein Conſpiracy;" "A Dialogue on Love;" and "Opinions on the Name and Game of Cheſs." The poetical pieces conſiſt of eclogues, elegies, ſonnets, epigrams, and other ſhort pieces. All his works are ſaid to diſplay facility and vivacity, with much delicacy of ſentiment, but not under the diſcipline of a correct taſte and judgment.

SARASU, in *Geography*, a river of Turkeſtan, which runs into the Lirr at Jenghikand.

SARASWATI, in *Mythology*, the name of the conſort of the Hindoo deity Brahma. The Aſiatic Miſcellany, vol. i. and the laſt volume of the works of ſir Wm. Jones, contain a hymn by that elegant writer addreſſed to Saraſwati.

> "Sweet grace of Brahma's bed;
> Whoſe ſigh is muſic, and each tear a pearl."

From the argument prefixed to it we extract ſome paſſages deſcriptive of this intereſting ſubject of Eaſtern fable, and generally of its mythology.

"The Hindoo goddeſſes are uniformly repreſented as the ſubordinate *powers* of their reſpective lords: thus Lakſhmi, the conſort of Viſhnu the *preſerver*, is the goddeſs of *abundance* and *proſperity*; Bhavani, or Parvati, the wife of Siva, is the general power of *fecundity*; and Saraſwati, whoſe huſband is the *creator* Brahma, poſſeſſes the powers of imagination and invention, which may juſtly be termed *creative*. She is, therefore, adored as the patroneſs of the fine arts, eſpecially of muſic and rhetoric; as the inventreſs of the Sanſcrit language, and of the ſciences which writing perpetuates; ſo that her attributes correſpond with thoſe of Minerva *Muſica*, in Greece or Italy, who invented the flute, and preſided over literature. In this character ſhe is addreſſed in the hymn; and particularly as the *goddeſs of harmony*, ſince the Indians uſually paint her with a muſical inſtrument in her hand. The ſeven notes, an artful combination of which conſtitutes *muſic*, and variouſly affects the paſſions, are feigned to be her earlieſt production; and the greateſt part of the hymn exhibits a correct delineation of the *Ragmala*, or *necklace of muſical modes*, which may be conſidered as the moſt pleaſing invention of the ancient Hindoos, and the moſt beautiful union of painting with poetical mythology, and the genuine theory of muſic. A full diſcuſſion of ſo copious a ſubject would require a ſeparate diſſertation; but here it will be ſufficient to ſay that almoſt every illuſion and every epithet in the poem, as well as the names, are ſelected from approved treatiſes, either originally Perſian, or tranſlated from the Sanſcrit, which contain as lively a diſplay of genius as human imagination ever exhibited."

Such of our readers as may be unacquainted with the hymn or ode, from the argument to which the above paſſages are extracted, would be amply repaid by the peruſal of it, as well as of the other odes addreſſed by the ſame author to different deities of the Hindoo Pantheon.

The name of Saraſwati, or Sereſwaty, as ſome Eaſtern ſcholars write it, means *flowing;* applicable both to the goddeſs of eloquence, and to the ſacred river named after her, which is fabled to join two others, forming a myſtical triad, ſo delighting to Hindoo enthuſiaſts. This myſtical junction is called Triveni, ſee that article, and TRIMURTI. It is alluded to in the laſt ſtanza of the hymn.

> "We thirſt, Vachdevi, for thy balmy lore,
> Drawn from that rubied cave,
> Where meek-eyed pilgrims hail the triple wave."

Vach, and Vachi, have meanings chiefly referrible to *ſpeech*, as hath Lepita, another name of this goddeſs of eloquence, or Vachdevi, as ſhe is ſtiled above. She is alſo called Brahmi, and Brahmani, as the ſakti, or *power*, of Brahma. Vani is another of her names. Under the article SAKTI, the attributes and appearances of this goddeſs will be found noticed. She is one of the Devi-matri of the Hindoos; ſimilar to the deæ-matres of the Romans. See hereon alſo under SAKTI, and MATRI.

The *unarmed* Minerva of the Romans apparently correſponds, as patroneſs of ſcience and genius, with Saraſwati; as we are told by ſir W. Jones, Aſ. Reſ. vol. i. Both goddeſſes, he adds, have given their names to celebrated grammatical works: but the Saraſwata of Sarupacharya is far more conciſe, as well as more uſeful, than the Minerva of Sanctius.

The Minerva of Italy invented the flute; and Saraſwati preſides over melody: the protectreſs of Athens was even, on the ſame account, ſurnamed *Muſice*. (Ibid.) A ſtringed inſtrument, called vina, is uſually ſeen in the hand of Saraſwati, in pictures, or poetical deſcriptions of her. It may be thought curious that a Calmuck goddeſs, playing on the baililika, a ſort of lyre, or vina, given in one of the plates to Dr. Clarke's recent travels, is exactly a repreſentation of the Hindoo Saraſwati. See hereon under our article PARVATI, another Indian deity, now found to be a goddeſs alſo of the Calmucks. Saraſwati is deemed to be one of the Parcæ of the Weſtern mythologiſts; as weaver of the web of life. Clotho is of courſe the fate, correſponding to the creature-conſort of Brahma, as farther noticed under SAKTI, and TRIMURTI.

The fifth day of the month Magha is called Sri-punjemi, on which Saraſwati, named Sri, or the bleſſed, (ſee SRI,) the goddeſs of arts and eloquence, is worſhipped with offerings of perfumes, flowers, and dreſſed rice; even the implements of writing and books are treated with reſpect, and are not uſed on this holiday. The following meditation on this goddeſs will furniſh a deſcription of her perſon and attributes.

"May the goddeſs of ſpeech enable us to attain all poſſible felicity; ſhe who wears on her locks a young moon; who ſhines with exquiſite luſtre; whoſe body bends with the weight of her full breaſts; who ſits reclined on a white lotos; and from the crimſon lotos of her hands pours radiance on the implements of writing, and on the books produced by her favour." Aſ. Reſ. vol. iii.

The laſt watch of the night is peculiarly ſacred to Saraſwati.

"Let the houſe-keeper wake in the time ſacred to Brahmi, the goddeſs of ſpeech, that is, in the laſt watch of the night; let him then reflect on virtue and virtuous emoluments, and on the whole meaning and very eſſence of the Veda." (Inſt. of Menu, c. iv. v. 92.) See under MENU, for an account of the work here quoted. By the latter part of the verſe is probably meant the Gayatri, and the myſtic monoſyllable O'M; of which ſee under O'M.

The ſacred books called the Vedas, (ſee VEDA,) are derived from Brahma; and ſometimes, as being the ſame thing, from Saraſwati, who is called the "mother of the Vedas." The Jayatri is called alſo the mother of the Vedas. Savitri is a name ſometimes given to the "ineffable text," the Gayatri, as fully noticed under the article O'M. Savitri is a name of the ſun, or Surya, who is the oſtenſible object adored in the Vedas, and is alſo given to Saraſwati. She is likewiſe called, as is Parvati, Sweta-devi, or the white goddeſs. In the article O'M this paſſage occurs. "The white goddeſs, or Saraſwati, preſides over arts and ſciences; ſhe is the Vedas, and the Vedas are in her. Savitri, the conſort of Brahma, is the Gayatri, emphatically called the mother of the Vedas." Brahmi-ſita is another of her names. Sita (which ſee) means white. In certain ſpells, deſcribed in the Puranas, compound epithets are applied to her containing *all the letters* of the alphabet, and the name ſhe is then addreſſed by is Sarvakſhara. But as ſhe contains them all and is *one*, ſo one letter is her; and ſhe, like Parvati, is alſo called I, or, in a derivative form, Iva; pronounced as a diſſyllable exactly like Eve. Ekakſhara is another of her names in this form, meaning *one letter*. On Puranic authority the following names or epithets are applied to her. They are contained in a hymn of praiſe addreſſed to her by Brahma: Jayaſva, meaning victorious; Satya-ſambhuta, ſelf-born; Vararſha, firmly ſeated; Druva, immoveable; Deva-vara, god-containing; Kſhema, benign; Sarvabhuta-Maheſwari, great queen of all living beings. The latter, Maheſwari, is a name alſo of Parvati; who is converſely called Bhutopharini, or ſhe who deſtroys living beings.

Saraſwati is, among other deities, eſpecially propitiated in the marriage ceremonies of ſome ſects of Hindoos: the following hymn is chanted in her honour. "Charming Saraſwati! ſwift as a mare, whom I celebrate in the face of this univerſe, protect this ſolemn rite. O thou! in whom the elements were produced, in whom this univerſe was framed, I will now ſing that hymn (the nuptial text) which conſtitutes the higheſt glory of women." Aſ. Reſ. vol. vii.

Whichſoever deity a Hindoo may have occaſion to invoke, or rather whichever be the object of his adoration, whether god or goddeſs, ſuperior or inferior, he is naturally prone to array his patron in the attributes of the Almighty himſelf. It is, however, proper to recollect, that a female deity is the ſame with her lord, being his active energy, or Sakti; as is Saraſwati of Brahma; ſhe is accordingly endowed with his attribute of creation. In the preceding and following extracts we, therefore, ſee her appropriately invoked as the being "in whom the elements were produced; in whom this univerſe was framed;" and gifted with the powers and attributes, more uſually aſſigned to the two other great goddeſſes, Parvati and Lakſhmi. (See thoſe articles.) Sri, as a name meaning bleſſed, or fortunate, is applied to them all; and indeed to others, and even to men. (See SRI.) Parvati is ſometimes called the goddeſs of ſpeech, and Saraſwati is alſo a name given to her. "Sitting reclined on a white lotos," is rather indicative of Lakſhmi; while "wearing on her locks a creſcent, or young moon," approaches her again to the conſort of Siva, he being the "moon-crowned" god. Savitri, a name of Surya, or the ſun, is ſometimes, as abovementioned, given to the ſpouſe of Brahma. (See SAVITRI.) Satarupa is alſo a name of both Saraſwati and Parvati. See SATARUPA.

In the following extract from Colebroke's Eſſay on the

Vedas, (ſee VEDA,) Aſ. Reſ. vol. viii. the origin and attributes of this beneficent deity will appear.

Near the cloſe of the tenth chapter (of the tenth book of the Rigveda) a hymn is ſpoken by VACH, in praiſe of herſelf, as the ſupreme univerſal ſoul. Vach ſignifies *ſpeech*, and ſhe is the active power of Brahma proceeding from him. The following is a literal verſion of the hymn; which is expounded by the commentator, by the interpolation between brackets, conſiſtently with the theological doctrines of the Vedas.

" I range with the Rudras, with the Vaſus, with the Adityas, and with the VISWA-DEVAS. I uphold both the ſun and the ocean [MITHRA and VARUNA], the firmament [INDRA], and fire. I ſupport the moon [SOMA], deſtroyer [of foes], and [the ſun, entitled] TWASHTI, PUSHAN, or Bhaga. I grant wealth to the honeſt votary who performs ſacrifices, offers oblations, and ſatisfies [the deities]. Me, who am the queen, the conferrer of wealth, the poſſeſſor of knowledge, and firſt of ſuch as merit worſhip, the gods render, univerſally, preſent every where, and pervader of all beings. He who eats food through me, as he who ſees, who breathes, or who hears through me, yet knows me not, is loſt; hear then the faith which I pronounce. Even I declare this ſelf, who is worſhipped by gods and men; I make ſtrong whom I chooſe; I make him Brahma, holy and wiſe. For RUDRA I bend the bow, to ſlay the demon, foe of Brahma; for the people I make war [on their foes]; and I pervade heaven and earth. I bore the father on the head [of this univerſal mind]; and my origin is in the midſt of the ocean; and therefore do I pervade all beings, and touch this heaven with my form. Originating all things, I paſs like the breeze; I am above this heaven, beyond this earth; and what is the great one, that am I."

The above extract, even with the aid of the interpolated illuſtration, is obſcure, like the greater part of the Vedas, or ſacred books of the Hindoos. An examination of the very inſtructive and elegant eſſay, whence it is taken, will in part remove its obſcurity: we ſhall only notice the explanation afforded on one paſſage:—" Heaven, or the ſky, is the father; and the ſky is produced from mind: its birth is therefore placed on the head of the ſupreme mind," or intelligence. A reference to the articles given under the words above diſtinguiſhed by capitals, will afford farther information on the ſubject of the creative goddeſs of harmony and art; the active energy of Brahma, who is ſaid to be a perſonification of the earth, and of *matter* generally. See hereon farther under our articles PARVATI, and SIVA.

Images of Saraſwati are rare. The author of the Hindoo Pantheon, whence we have taken a conſiderable part of this article, ſays that he never ſaw one. Pictures of her are not uncommon, and ſhe is, in the plates of the work juſt mentioned, ſeveral times repreſented under forms that we ſhall preſently notice.

No excluſive adoration is now paid either to Saraſwati, or her lord Brahma. It ſeems ſingularly infelicitous, therefore, to call the religion of the Hindoos that of Brahma, as is not unuſual with European writers. Of the *Brahmans*, indeed, it may be correctly termed; but there is now no ſect, claſs, or tribe, who excluſively worſhip that, *i. e.* the creative power of the *trimurti* or triad, as is the caſe with ſo many ſects in reſpect of the other two powers, Siva and Viſhnu, as noticed under theſe articles; and under Saiva and Vaiſhnava, the general names of theſe ſectaries; and under SECTS *of Hindoos*, and other articles thence referred to.

But although no ſect is now known to offer excluſive or eſpecial adoration, either to Brahma, or his Sakti, and no temples are raiſed to their honour; it may be reaſonably inferred that there is truth in the tradition that the *creative* power was formerly worſhipped, ſimilarly with the *preſervative* and *deſtructive*, the other two of the triad. The paſſage above quoted from the Veda, and other paſſages, authorize this inference. Tradition ſays, that the temples of Brahma were overthrown, his ſectaries diſperſed, and his worſhip aboliſhed; abſorbed, perhaps, by his ſucceſsful rivals, the Saivas and Vaiſhnavas. If there be truth in this, the fact ſeems poſterior to the compoſition of ſuch paſſages as the above in the Vedas.

The author of the Hindoo Pantheon ſeems, however, to view the queſtion of the deſtruction of Brahma's temples, &c. in the light rather of a *poetical* perſecution. " Of Brahma," he ſays, " the deity's *creative* energy, leſs appears to have been ſaid and ſung (the ſacred books and ceremonies of the Hindoos are moſtly written and chanted in *meaſure*) than, comparatively, of the other co-equal members of the triad: he has, like them, his conſort and offspring, and has had terreſtrial incarnations; but the work of creation being paſt, Brahma, its repreſented power, is no longer eſpecially adored in temples dedicated excluſively to him. Aſſociated with the other deities, offerings are gratefully made, and invocations piouſly addreſſed to the primary perſon; but as his portion of divine activity doth not operate on the preſent hopes and fears of the enthuſiaſtic or trembling ſuppliant, the excluſive adoration of Brahma has mixed itſelf with that addreſſed to Viſhnu and Siva: with mixed and languid feelings he contemplates his exiſtence, his *creation:* his *preſervation* he anxiouſly hopes and ſeeks, and his *deſtruction* fervently fears and deprecates: gratitude is leſs ardent than hope or fear; in time it becomes overpowered by their ſuperior potency, and its object is in a manner forgotten. But a Hindoo, ſpurning at ſobriety of narration, cannot plainly ſtate any hiſtorical or philoſophical fact; it muſt have a fabulous and mythological origin, progreſs, and termination: hence the three ſects, who ſeparately worſhipped the co-equal, co-eternal powers, have, by a ſeries of poetical perſecution and warfare, in which the followers of Brahma were diſcomfited, his temples overthrown, and his worſhip aboliſhed, been reduced to two; and the ſects of Vaiſhnava and Saiva now compriſe, under various ſpecific deſignations, all the individuals of that very numerous race, diſtinguiſhed by the appellation of Hindoos." Hin. Pan. p. 3.

This diverſity of opinion on an abſtruſe ſubject may be in ſome meaſure reconciled, by conſidering that all may be fable, or both theories may be fact. Without, however, entering farther on the point, we ſhall now return to the mythological perſonage, more immediately the ſubject of this article.

In caſes where a Hindoo had lied, or given falſe evidence, the ſin is expiated by an eaſy oblation to the goddeſs of ſpeech.

It has been extenſively remarked, that the Hindoos are more than uſually prone to falſehood; nor can it be denied that the diſcouragement of this offence is too little painted, both in regard to the trifling degree of diſgrace that attaches to a man's character on detection, and to the too great qualification of the prohibitory clauſe againſt lying. Falſehood is not only tolerated in ſome caſes of evidence, but is declared, in ſpecial affairs, to be even " preferable to truth." Several texts might be cited from the inſtitutes of Menu, if our limits would allow, that would evince this.

Another reaſon that, among the Hindoos, deviation from truth is not held in deſerved abhorrence, may be found perhaps in this circumſtance; that in their mythological legends their gods are frequently repreſented as liars. One can ſcarcely reſiſt the perſuaſion, that imbibing ſuch notions in early youth, muſt neceſſarily produce a pernicious influence on the principles and conduct of men. It is an outrage on all moral decency to teach a mythological race of men, that “falſe evidence is by wiſe men called the ſpeech of the gods;” that “falſehood may be ſpoken;” that in ſome caſes, leaving the individual to determine as to their occurrence, “it is even preferable to truth;” and that “a full expiation of the venial ſin of benevolent falſehood” is found in offerings as contemptible, if poſſible, as the doctrine is pernicious.

After this little digreſſion, not however irrelevant to our ſubject, we return to Saraſwati; remarking, by the way, that all Hindoo hiſtory, ſcience, and arts given, as well as their religion, are buried in their mythology. If the mine of Hindoo lore contain any thing worth exploring, as it indiſputably does, it is in the various ramifications of the mythological vein that we muſt chiefly ſeek the ore; intermixed, indeed, with matter of groſs and diverſified qualities. See MYTHOLOGY *of the Hindoos*.

In pictures, for we have before ſtated that no images of her have been brought to light, Saraſwati is ſeen two and four-handed, holding a ſtringed inſtrument, called vina, a ſort of lyre; a lotos, a cup, and a ſcroll. The inſtrument, correctly named vina, is in common language called *Been*. (See that article for a deſcription, and the plate thence referred to, for an accurate engraving of it.) She is ſometimes ſeen riding on a peacock; but the vehicle, or *vahan*, uſually ſaid to appertain to Brahma, and of courſe to his conſort, is the gooſe, or ſwan. In the cavern temple of Elephanta, Brahma is ſeen in ſeveral compartments, ſitting on a lotos, with three or four of thoſe animals incloſed in good relief on its calyx. Except in this inſtance, however, the author of the Hindoo Pantheon does not recollect ſeeing the god in queſtion ſo attended. In one of the plates of that work, Saraſwati is riding on a ſpecies of heron, called in India Bhagala, and ſo called, it is ſurmiſed, from flying with its long neck and head gathered apparently under its wing, which part in a bird, as well as under the arm in man, is called Bhagl. It may be noticed in paſſing, that Bhaga is a name or epithet of a divine nature, and given to ſeveral deities, and applied perhaps to Brahma; and with the final ſyllable, which, in this view of it, is only a grammatical termination, denoting the genitive caſe to the bird in queſtion. This bird is commonly called by the Engliſh batty-bird, from frequenting wet rice, or batty-fields. It flies low, like the ſwan and gooſe, and the peacock, all of which being heavy ſluggiſh birds, may have been ſelected as apt emblems of Brahma; who, it will be recollected, is a perſonification of earth or matter. In like manner Viſhnu, being the air, is appropriately carried by the buoyant towering eagle. Under the article MATRI, Brahmani is deſcribed “on a car yoked with ſwans,” and “carried by a ſwan.” See VAHAN.

It may be farther remarked, that the name of Brahma's vahan, or vehicle, the ſwan or gooſe, is *hanaſa*; uſually pronounced *hans*; or with a ſtrong naſal, *hahns*; ſometimes *hahnſy*; and this latter name is preciſely that given in the eaſtern parts of England to the heron, a ſemi-aquatic ſpecies of bird, on which Saraſwati is occaſionally ſeen to ride. A determined etymologiſt might find a farther coincidence in the names of Brahma's gooſe, *hanſa*, and our genus or order, *anſer*.

Connected with this ſubject, we will allot a line or two here to notice a diſcovery of lingual coincidence of an amuſing nature. Some of the early Catholic miſſionaries, explaining the religious doctrines and opinions of the Hindoos, found the hiſtory of the patriarch Abraham, and his wife Sarah, veiled under that of Brahma and Saraſwati; which names may, indeed, without much licence, be written Brahama, and Sarah-ſwati. Dropping, or tranſpoſing, a final vowel is a very trifling etymological liberty; and in the inſtance of Brahama, making it initial, gives at once the required name; and in the other caſe, with the zealous miſſionary, the termination *ſwati* is merely an epithet equivalent to goddeſs, or miſtreſs. How far the good fathers found the reſpective hiſtories of the compared perſonages to coincide, we do not recollect.

Red, as the colour of earth, is that alſo of Brahma and his conſort. They are frequently ſeen with deep red faces. (See TRIVENI.) It is alſo the colour of Pavaka, regent of fire, as noticed under that article; and of Sani, the planet Saturn, whoſe motions are ſuppoſed to be directed by Brahma. The ſlow motion of Sani may have pointed out that planet as appropriate to heavy ſluggiſh matter, perſonified. (See SANI.) Vani, or Vahni, is a name of both Saraſwati and Pavaka.

As all the gods and goddeſſes of the Hindoo Pantheon are ultimately reſolvable into one, ſo we find their names and attributes coaleſcing. Inſtances of this and their phyſical relations, are given under the articles LAKSHMI, O'M, SAKTI, SIVA, PARVATI, and others thence referred to.

SARAT, in *Geography*, a river of Aſiatic Turkey, in Natolia; 44 miles E. of Smyrna.

SARATCHIKOVA, a fort of Ruſſia, on the Ural; 16 miles N. of Guriev.

SARATOGA, a town of the ſtate of New York, on the river Hudſon, noted in the hiſtory of the American war as the place where, in the year 1777, the Britiſh army under general Burgoyne ſurrendered to the Republicans under general Gates, on a capitulation by which they were allowed a free paſſage to Great Britain, on condition of not ſerving againſt America; 28 miles N of New York. This place contains about 404 houſes, and a Dutch reformed church, but they are ſo ſcattered about, that it has not the ſmalleſt appearance of a town. Of the works thrown up at Saratoga by the Britiſh and American armies during the war, there are now ſcarcely any remains. The country round about it is well cultivated, and the trenches have been moſtly levelled by the plough. In this neighbourhood, upon the borders of a marſh, are ſeveral very remarkable mineral ſprings; one of them in the crater of a rock, of a pyramidical form, about five feet in height, is particularly curious. This rock ſeems to have been formed by the petrifaction of the water: all the other ſprings are likewiſe ſurrounded with petrifactions of the ſame kind. The water in the principal ſpring, except at the beginning of the ſummer, when it regularly overflows, remains about eight inches below the rim of the crater, and bubbles up as if boiling. The crater is nine inches in diameter. The various properties of the water have not been yet aſcertained with any great accuracy; but it is ſaid to be impregnated with a foſſile acid and ſome ſaline ſubſtance; there is alſo a great portion of fixed air in it. An opportunity is here afforded for making ſome curious experiments.

If animals be put down into the crater, they will be immediately ſuffocated; but if not kept there too long, they recover again upon being brought into the open air.

If a lighted candle be put down, the flame will be extinguiſhed in an inſtant, and not even the ſmalleſt ſpark left in the wick.

If the water immediately taken from the ſpring be put into a bottle, cloſely corked, and then ſhaken, either the cork will be forced out with an exploſion, or the bottle will be broken; but if left in an open veſſel, it becomes vapid in leſs than half an hour. The water is very pungent to the taſte, and acts as a cathartic on ſome people, as an emetic on others. Weld's Travels, vol. i.

Saratoga, a county of the ſtate of New York, bounded E. and N. by Hudſon river, which ſeparates it from Renſſelaer and Waſhington counties, and S. by Mohawk river. It has been eſtabliſhed ſince 1790, and is divided into eight townſhips, *viz.* Greenfield, Ballſtown, Charltown, Half Moon, Milton, Saratoga, Galway, and Still-Water; and contains 33,147 inhabitants.

SARATOV, a town of Ruſſia, and capital of the government of Saratovſkoi. It is fortified with a ditch, wooden walls, and towers, furniſhed with cannon, and defended by a regular garriſon. Near this town is held a large annual fair, to which the Tartars bring horſes from different parts for ſale; 392 miles S.E. of Moſcow. N. lat. 51° 30′. E. long. 45° 44′.

SARATOVSKOI, a government of Ruſſia, bounded on the N. by the governments of Tambov, Penza, and Simbirſk; on the E. by Uphinſkoi and the government of Caucaſus; on the S. by the government of Caucaſus and the country of the Coſſacks; and on the W. by Tambovſkoi, and a ſmall part of Veronezſkoi. Its form is an irregular triangle. N. lat. 47° 40′ to 53°. E. long. 40° to 52°.

SARAUT, a town of Perſia, in the province of Herat; 66 miles S.S.E. of Hamadan.

SARAWAN, the moſt northern province of Balouchiſtan, conſidered by ſome as diſtinct from Mekran, in the Perſian empire, bounded on the N. by Candahar; S. by Jhalawan, and part of Mekran; E. by Zuhree and Cutch Gandava; and W. by the deſart Kharan. Theſe provinces are a maſs of mountains from Kohun Wat, on the frontiers of Lus, to the deſart, which divides them from Candahar, in length about 350 miles, and varying in breadth at different places. Jhalawan and Sarawan are divided into diſtricts, and each diſtrict into innumerable kheils, or ſocieties. Each kheil furniſhes its quota of troops, according to its ſize, or the urgency of the ſervice; but as the number of inhabitants in a kheil are liable to either increaſe or decreaſe every ſeaſon, this mode of calculating the forces of Mahomed Khan muſt be very uncertain.

Sarawan, a town of Perſia, built in the centre of a deſart in the province of Mekran, ſupplied with water from a river called Bell.

SARAX, in *Botany*, a name given by ſome authors to the whole claſs of the ferns.

SARAYA, in *Geography*, a town of Hindooſtan, in Oude; 10 miles N. of Lucknow.—Alſo, a town of Hindooſtan, in Oude, on the Dewah; 28 miles S. of Goorackpour.

SARAZAC, a town of France, in the department of the Lot; 15 miles N.W. of St. Ceré.

SARAZIN, James, in *Biography*, a ſculptor who had a conſiderable ſhare in forming the moſt eminent artiſts of that claſs in France, was born at Noyon in 1590. He received the elements of his art at Paris, from thence he went to Rome, where he contracted an intimate friendſhip for Domenichino, the celebrated painter, who, with himſelf, was employed at Freſcati, and who aſſiſted him with his advice. He reſided at this city eighteen years, and, returning through Florence and Lyons, he reviſited Paris about the year 1628. Here he ſoon roſe into notice, and was engaged in various works by cardinal Richelieu and other perſons of diſtinction. His reputation at court cauſed him to be employed by queen Anne of Auſtria, on a very ſingular occaſion. When pregnant of her firſt child, Lewis XIV., ſhe vowed an offering to the ſhrine of Loretto of a ſtatue of pure gold of the weight of the child, provided it ſhould prove a male. The condition being performed on the part of the Virgin, Sarazin was ordered to caſt a ſilver angel, three feet and a half high, which ſhould be in the act of preſenting to her the little golden dauphin, whoſe weight was juſt ſix pounds. Sarazin, after this, executed ſeveral works, which gave greater ſcope to his genius, of which one of the moſt admired was a group of two children and a goat at Marli. His principal piece was the mauſoleum of Henry de Bourbon, prince of Condè, conſiſting of a number of emblematical figures, forming a grand compoſition. His works are characterized by elegance and grace; but his figures are ſaid to be deficient in dignity and correctneſs, and his draperies want lightneſs. Sarazin died at Paris in 1660, at the age of 70. His ſchool was the moſt famous in France during that period, and produced many diſtinguiſhed ſculptors.

SARBATCHOU Saha, in *Geography*, a ſmall iſland near the coaſt of Corea, in the ſea of Japan. N. lat. 42° 54′. E. long. 131° 37′.

SARBENA, in *Ancient Geography*, a town of Aſia, in Aſſyria, ſituated between Gangamele and Arbele.

SARBIEWSKI, Matthias-Cassimer, in *Biography*, a Jeſuit diſtinguiſhed for his Latin poetry, was born in 1595, of an illuſtrious family, in the duchy of Maſovia, in Poland. He entered into the ſociety of Jeſus in 1612, and being ſent to Rome, devoted himſelf to the ſtudy of whatever is connected with claſſical antiquity and poetry. Some odes which he preſented to Urban VIII. cauſed him to be employed by that pope in the correction of the hymns for his new breviary. On his return to Poland, he was made profeſſor at Wilna in various departments of learning; and when he took the doctor's degree, Ladiſlaus V. aſſiſted at the ceremony, and put his own ring on his finger. That prince afterwards nominated him his preacher, and made him his companion in all his journies. He died in the year 1640. The Latin poems which he left behind him conſiſt of odes, epodes, dithyrambics, epigrams, and miſcellaneous pieces. His reputation as a poet depends altogether on his lyrics. Grotius, Heinſius, and ſome other competent judges, have thought him occaſionally equal to Horace. Some of his odes relate to events in the hiſtory of his country, which are touched with true poetic ſpirit and fire. His works have been ſeveral times reprinted; the beſt edition is that of Barbou in 1759, 12mo.

SARBO, in *Geography*, an iſland in the Red ſea, near the coaſt of Abyſſinia. N. lat. 15° 8′.

SARCA, in *Ancient Geography*, a ſmall river of Italy, which runs into the lake Benacus.

Sarca, in *Geography*, a town of the county of Tyrol, on a river of the ſame name; 15 miles W. of Trent. The river riſes on the borders of Breſcia, about two miles from Hoſpitaletto, and runs into the lake of Garda, near Riva.

SARCASM, Sarcasmus, in *Rhetoric*, a keen bitter irony, by which the orator ſcoffs at, and inſults his adverſary.

Such was that of the Jews to our Saviour: "Thou, who deſtroyeſt the temple, and raiſeſt it in three days, ſave thyſelf," &c. And again, "He ſaved others, himſelf he cannot ſave." Or that of Turnus to a Trojan ſlain by him, in Virgil:

"En agros, et, quam bello, Trojane, petiſti,
Heſperiam metire jacens! Hæc præmia, qui me
Ferro auſi tentare, ferunt: ſic mœnia condunt."

SARCELLY, in *Geography*. See SHERSHELL.

SARCENE, a town of the iſland of Corſica; 15 miles W. of Porto Vecchio. N. lat. 41° 30′. E. long. 9° 6′.

SARCHAD, a town of Syria, in the country beyond Jordan, near a range of mountains to which it gives name; 45 miles S.S.E. of Damaſcus.

SARCINA, a town of Italy, in the department of the Rubicon; 20 miles W.S.W. of Rimini.

SARCITES, in *Surgery*, an anaſarca.

SARCITES, the *Fleſh-ſtone*, in *Natural Hiſtory*, a name given by ſome authors to the cornelian, from its being of the colour of fleſh, as it is very exactly in ſome pieces.

SARCITES, or *Suarites*, is alſo a ſtone ſuppoſed to be found in the belly of a lizard; it ſeems to have been a ſpecies of pale cornelian. Pliny mentions it, but gives no deſcription of it.

SARCITES, the *Fleſh-ſtone*, is alſo a name given by ſome authors to a ſpecies of ſtone, whoſe fibres were ſuppoſed to repreſent thoſe of beef. It was of a black colour, and firm texture.

SARCIUM, in *Surgery*, a caruncle.

SARCLIN TIME, is the time or ſeaſon when huſbandmen weed their corn.

SARCOA, in *Ancient Geography*, a town of Arabia Felix, in the country of the Ælæans or Agæans, upon the ſouthern coaſt of the Perſian gulf. Ptolemy.

SARCOCELE, from σαρξ, *fleſh*, and κηλη, *a tumour*, denotes, in *Surgery*, a fleſhy hardneſs and enlargement of the teſticle. Sometimes the diſeaſe commences in the teſticle itſelf, which becomes thickened and indurated. On other occaſions, the diſtemper firſt makes its appearance in the epididymis, or even in the ſpermatic chord. Sometimes the induration is confined to the glandular portion of the teſticle; ſometimes it is limited to the epydydimis; while, in other inſtances, both theſe parts are at the ſame time affected with hardneſs.

Sarcocele is a term, that is not uncommonly applied to every chronic fleſhy enlargement of the teſticle. Hence, not only ſeveral kinds of ſarcoma affecting this body, and which will be ſpoken of in the article TUMOUR, acquire this name; but, alſo, ſome diſeaſes of the teſticles generally conſidered to be ſcrofulous. Even ſcirrhus and cancer, when ſituated in this part, have been improperly blended with numerous other morbid affections, and comprehended under one common title, *ſarcocele*. Firſt Lines of the Practice of Surgery, part ii. ch. 48. edit. 3.

We need not here enter into a particular account of the various ſarcomatous diſeaſes to which the teſticle is ſubject; for they have no peculiarity in them, except what depends on their ſituation, and the general characters of the different ſpecies of ſarcoma will be conſidered in a future article. (See TUMOUR.) The teſticle is eſpecially liable to the three kinds of ſarcoma, which have been named by Mr. Abernethy, the *common vaſcular*, *cyſtic*, and *medullary*.

Sometimes the teſticle is converted into a truly ſcrofulous maſs. It is increaſed in ſize, and, when cut into a whitiſh or yellowiſh coagulated matter, is diſcovered mixed with pus.

This complaint is not attended with ſo much pain and induration as a ſcirrhous diſorder of the teſticle; nor does it produce any unfavourable ſtate of the health.

As Dr. Baillie obſerves, the teſticle is often found converted into a hard maſs, of a browniſh colour, and generally interſected with membranes. Sometimes there are cells in the tumour, which are filled with a ſanious fluid. (Morbid Anatomy, &c. p. 352, 353, edit. 2.) This is the truly ſcirrhous teſticle, which is attended with great hardneſs, ſevere pains darting along the ſpermatic chord to the loins, and an unequal knotty feel. In general, the health becomes impaired. To uſe Mr. Pott's words, ſometimes the fury of the diſeaſe brooks no reſtraint; but, making its way through all the membranes which envelope the teſticle, it either produces a large, foul, ſtinking, phagedenic ulcer with hard edges, or it thruſts forth a painful gleeting fungus, ſubject to frequent hemorrhage. (Pott's Chirurgical Works, vol. ii. p. 390. edit. 1808.) Theſe latter ſtates of the diſeaſe are denominated the *cancer* of the teſtis.

Sooner or later the ſcirrhous induration extends from the epididymis upward along the ſpermatic chord, even within the abdominal ring. In the latter circumſtance, the lymphatic glands in the loins uſually become diſeaſed; and this extenſion of miſchief, together with the impoſſibility of removing the whole of the diſeaſed chord, too frequently deprives the patient of every chance of getting well.

It is now well known, that the moſt ſimple ſarcomatous enlargements of the teſticle are capable of aſſuming, in a very ſudden manner, a malignant and cancerous tendency; and that ſometimes the ſcirrhous induration of the chord makes a rapid progreſs upward. Hence, that ſurgeon acts with prudence, who recommends an early extirpation of every teſtis that is incurably diſeaſed, and ſo deprived of its original organization, as to be totally unfit for the ſecretion of the ſemen.

Chronic enlargements of the teſticle are ſometimes attended with an accumulation of limpid fluid in the tunica vaginalis, and the diſeaſe is then termed *hydro-ſarcocele*, an appellation firſt employed by Fabricius ab Aquapendente.

The hardneſs and ſwelling of the teſticle remaining after inflammation of this part, do not conſtitute a complaint, which ſurgical authors claſs with ſarcocele; for the diſeaſe hardly ever increaſes ſo as to give trouble.

We have ſtated that ſarcoceles, in common with all other ſarcomatous tumours, may change into diſtempers, which, in point of malignity, and the manner in which they injure the health, are quite as bad as cancer itſelf. It is ſaid, however, that ſarcocele of the epididymis rarely becomes malignant, and is much more eaſy of cure, than the ſame diſeaſe of the glandular portion of the teſticle; but accompanies even the firſt form of the complaint.

Sarcoceles ſometimes continue for years without undergoing any particular change; in other inſtances they increaſe with ſurpriſing rapidity. The inconveniences which they excite originate from the weight and magnitude of ſuch tumours. Their weight produces an uneaſy and even a painful ſenſation in the loins, eſpecially when the patient neglects to wear a ſuſpenſory bandage, or a bag-truſs, for the ſupport of the part. The danger of a ſarcocele ariſes from the increaſe and extenſion of the hardneſs up the ſpermatic chord, and from the change of the tumour from its indolent ſtate into a painful, ulcerated, and incurable diſeaſe.

Sarcocele occaſionally bears ſome reſemblance to hydrocele of the tunica vaginalis. The circumſtances by which the two complaints may always be diſtinguiſhed from each other, are related in another part of this work. (See HYDROCELE.) In the ſame article we have alſo noticed, that ſarcocele and hydrocele of the tunica vaginalis ſometimes do actually occur together. It has likewiſe happened in ſome unuſual caſes, that an indurated maſs is formed in the cellular membrane of the ſcrotum, and has the appearance of a ſarcocele. In one caſe, recorded by Dr. Cheſton, a ſwelling of this kind was as large as a child's head. On diſſection of the parts, the teſticle and tunica vaginalis were found to be quite free from diſeaſe. The tumour proceeded entirely from an induration of the cellular membrane, which immediately covers the external ſurface of the vaginal coat. The patient was thought to have been of a ſcrofulous habit.

The operation of caſtration is the moſt certain means of relieving the patient from ſarcocele. This proceeding, however, is not invariably practicable, nor is it always neceſſary; for ſometimes the induration of the teſticle admits of being diſperſed by the judicious employment of internal medicines and external applications. The hope of accompliſhing this deſirable object may reaſonably be entertained, when the ſwelling is not very large, when it has not exiſted a conſiderable time, and when it is not attended with much induration. Experience has proved, that ſome kinds of ſarcocele have yielded to the exhibition of emetics (Warner, Pringle, and Home, in Chemical Experiments); to a decoction of ononis ſpinoſ. (Bergius Mat. Med. Richter's Chir. Bibl. 7 B. p. 605.); to cicuta and bark (Warner); to mercurial frictions (Le Dran, B. Bell); to the external uſe of the liquor ammoniæ acetatis (Richter's Chirurg. Bibl. 5 B. p. 127.); to poultices containing opium (Fothergill's Med. Obſ. and Enq. vol. v.); to a lotion made with a ſtrong decoction of hemlock (Warner); to the ſteam of vinegar, &c. The operation of all theſe means will be advantageouſly aſſiſted by the continual uſe of a bag-truſs, and attention to a ſuitable low diet.

Mr. Pott believed, that the man who has the misfortune to be afflicted with a ſarcocele, has very little chance of getting rid of the diſeaſe by any means but extirpation; and that all the time the operation is deferred, he carries about him a part not only uſeleſs, but burdenſome, and which is every day liable to become worſe, and unfit for ſuch an operation. Now, although there is a great deal of truth in this opinion, yet, we conceive, that it is rather exaggerated, and that it would tend to authorize the practice of caſtration to an extent beyond all neceſſity. We certainly think with Mr. Pott, that there never was a ſarcocele cured, where the organization of the teſticle had been deſtroyed by diſeaſe, or where its ſtructure had ſuffered ſo much as to render it incapable of the office for which it is deſtined. But ſuch ſtate cannot always be known by inſpection, or manual examination; and were a ſurgeon to condemn to the operation every teſticle which he finds affected with indolent ſwelling and induration, he would remove many, which, under ſome of the above plans of treatment, might be perfectly cured. That there are ſome chronic enlargements of the teſticle which may be reſolved, is a truth, of which experience muſt have convinced the generality of ſurgeons.

The ſcrofulous induration, and ſeveral other ſwellings of this organ, which are very imperfectly underſtood, may ſometimes be benefited, and even entirely cured, juſt like ſome analogous affections of the breaſt. Hence, though we are advocates for the early performance of caſtration in caſes of ſarcocele, where there is reaſon to ſuppoſe the diſeaſe ſo far advanced, that the organization of the teſticle is totally deſtroyed; or where internal and external remedies have been tried a certain time in vain; yet theſe ſentiments do not incline us to recommend the operation for other examples, in which the diſeaſe is quite recent, and no plan of treatment whatſoever has been fairly tried. We have already enumerated various plans of treatment, which have been proved by experience to be ſometimes capable of affording relief. The diſeaſe of the teſticle, which is uſually called ſcrofulous ſarcocele, may frequently be conſiderably benefited by adminiſtering internally cicuta and calomel, and applying to the ſcrotum lotions, or poultices, made with ſea-water. Several other caſes, as, indeed, we have noticed above, yield to a courſe of mercury; leeches being daily applied to the ſcrotum, or frictions made on the part with camphorated mercurial ointment. In every caſe, the diſeaſed organ muſt be well ſupported by means of a ſuſpenſory bandage. According to the obſervations of Mr. Ramſden, that ſpecies of ſarcocele which he has termed *ſclerocele*, admits of relief by removing with bougies the morbid irritability of the urethra, with which its origin appears to be frequently connected.

Hence the ſurgeon muſt not regard every chronic enlargement of the teſticle as incurable; but he ought at the ſame time to be duly impreſſed with the expediency of not waſting too much time in the trial of means which are not to be depended upon, and which, if continued immoderately long, might allow the diſeaſe to advance too far to be capable of being afterwards effectually extirpated.

The following obſervations, made by the celebrated Mr. Pott, on the circumſtances in which the operation of caſtration is adviſeable, or not, are highly valuable, and merit the ſerious attention of every ſurgical practitioner.

" Some circumſtances there are now and then attending this diſeaſe, which are out of our ſight and out of our knowledge, and which will render all our pains abortive: ſuch are tubercles, indurations, and other diſeaſed appearances in the cellular membrane enveloping the ſpermatic veſſels within the abdomen; ſcirrhous viſcera, &c. If any of theſe can be known, they conſtitute a good reaſon for not attempting the cure by the operation; but the mere poſſibility that ſuch may exiſt, is certainly no reaſon for abſtaining from it: the apparent evil, that is, the diſeaſed teſtis, is certain; the other may or may not be the caſe: the one, if left to itſelf, is moſt likely to deſtroy the patient in a moſt miſerable and tedious manner; and the other, the ſuſpected miſchief, may poſſibly not exiſt.

" But though the timely and proper removal of a ſcirrhous or cancerous teſticle does frequently ſecure to the patient life, health, and eaſe, which, in ſuch circumſtances, are not attainable by any other means; yet it muſt be remarked, that the improper and untimely performance of the operation is not only not attended with ſuch happy and ſalutary events, but generally brings on high ſymptoms, and quick deſtruction. It therefore behoves every practitioner to be perfectly well acquainted, not only with ſuch circumſtances as render caſtration practicable and adviſeable, but with thoſe which prohibit ſuch attempt.

" Theſe are of two kinds, and relate either to the general habit of the patient, and the diſorders and indiſpoſitions of ſome of the viſcera, or to the ſtate of the teſticle and ſpermatic chord.

" A pale, ſallow complexion, in thoſe who uſed to look otherwiſe; a wan countenance, and loſs of appetite and fleſh, without any acute diſorder; a fever of the hectic kind; and frequent pain in the back and bowels; are, in thoſe who are afflicted with a ſcirrhous teſticle, ſuch circumſtances as would induce a ſuſpicion of ſome latent miſchief, and incline one to ſuppoſe that the ſame kind of virus, which had apparently ſpoiled the teſtis, may alſo have exerted its malign influence on ſome of the viſcera: in which caſe, ſucceſs from the mere removal of the teſticle is not to be expected. They, whoſe conſtitutions are ſpoiled by debauchery and intemperance, previous to their being attacked with this diſeaſe; who have hard livers, and anaſarcous limbs; are not proper ſubjects for ſuch an operation. Hard tumours within the abdomen in the regions of the liver, ſpleen, kidneys, or meſentery, implying a diſeaſed ſtate of the ſaid viſcera, are very material objections to the removal of the local evil in the ſcrotum. In ſhort, whenever there are manifeſt appearances, or ſymptoms of a truly diſeaſed ſtate of any of the principal viſcera, the ſucceſs of the operation becomes very doubtful, more eſpecially if ſuch ſymptoms and appearances, upon being properly treated, reſiſt in ſuch a manner, as to make it moſt probable that a cancerous virus is the real cauſe of them. When none of theſe require our attention, the object of conſideration is the teſticle and its ſpermatic veſſels. The ſtate of the mere teſtis can hardly ever be any objection to the operation; the ſole conſideration is the ſpermatic chord: if this be in a natural ſtate, and free from diſeaſe, the operation not only may, but ought to be performed, let the condition of the teſticle be what it may: if the ſpermatic chord be really diſeaſed, the operation ought not to be attempted. For although, on the one hand, a probability of ſucceſs will vindicate an attempt, even though it ſhould fail; yet on the other, where there is no ſuch probability, an operation, though performed in the moſt dextrous manner, will prove only a more ingenious method of tormenting.

"This, therefore, (the ſtate of the ſpermatic chord) is a matter which may require our moſt ſerious conſideration; ſince, on this it is (when the diſeaſe appears to be local) that we muſt found our judgment; and by this muſt form our reſolution, either to leave a man to the truly miſerable fate of being ſlowly, though certainly deſtroyed, by a cruelly painful, and frequently very offenſive diſeaſe; or endeavour to ſave and preſerve him in health and eaſe, by means which have ſo often proved ſucceſsful, as truly to deſerve the appellation of *probable*.

"All writers on this ſubject agree in ſaying, that if the ſpermatic proceſs has partaken of the diſeaſed ſtate of the teſticle, that is, has become enlarged and hardened, and ſuch enlargement and induration extends itſelf quite up to the abdominal muſcle, that the operation of caſtration ought not to be performed, becauſe it will not only prove ſucceſſleſs, but will haſten the death of the patient. And this is, in ſome degree, moſt certainly true; but not without ſome limitation. A truly and abſolutely diſeaſed ſtate of the ſpermatic chord, in any part of it, is certainly a very material objection to the operation, as it moſt commonly proves a bar to the ſucceſs of it: and a morbid ſtate of the ſame chord quite as high as the abdominal muſcle, that is, of all that part of it which is external to the cavity of the belly, is a juſt and full prohibition againſt ſuch attempt. But, on the other hand, it muſt be obſerved, that every apparently morbid alteration of the ſpermatic chord is not really ſuch; and, therefore, that every enlargement, induration, fulneſs, &c. which ſeems to alter the ſpermatic veſſels from that ſtate which is called a healthy and natural one, is not to be regarded as a diſeaſe; at leaſt, not as ſuch a diſeaſe as is ſufficient to prohibit the attempt to obtain a cure by extirpation.

"The difference between theſe, it is the duty of every practitioner to become perfectly acquainted with, as it is from a conſideration of theſe, that he ought to determine, whether he may, with that firmneſs and aſſurance, which the probable expectation of ſucceſs will give him, propoſe and adviſe caſtration; or find himſelf obliged in conſcience to diſſuade, or refuſe, the performance of it.

"When the ſpermatic veſſels are not only turgid and full, but firm and hard; when the membrane, which inveſts and connects them, has loſt its natural ſoftneſs and cellular texture, and has contracted ſuch a ſtate, and ſuch adheſions, as not only greatly to exceed its natural ſize, but to become unequal, knotty, and painful, upon being handled, and this ſtate has poſſeſſed all that part of the chord which is between the opening in the oblique muſcle and the teſticle, no prudent, judicious, or humane man, will attempt the operation; becauſe he will, moſt certainly, not only do no good to his patient, but will bring on ſuch ſymptoms as will moſt rapidly, as well as painfully, deſtroy him. Of this there are ſo many proofs, that the truth of it is inconteſtible.

"In ſome modern French books, we have, indeed, miraculous accounts of operations of this kind, performed by dividing the tendon of the oblique muſcle, by tracing the diſeaſed ſpermatic veſſels within the cavity of the belly, and there making the ligature and exciſion; but theſe are operations which make a figure in books only, and are performed only by viſionary writers; or, if ever they have been practiſed, ſerve to ſhew the raſhneſs and inſenſibility of the operators, much more than their judgment or humanity. Whoever (notwithſtanding theſe tales) performs the operations in the circumſtances above-mentioned, will prove himſelf much more hardy than judicious; and will deſtroy his patient, without having the ſatisfaction of thinking that his attempt, though ſucceſsleſs, was yet vindicable;—the only circumſtance which can, in ſuch events, give comfort to a man who thinks rightly.

"On the other hand, as I have already ſaid, every enlargement of the ſpermatic chord is not of this kind, nor by any means ſufficient to prohibit or prevent the operation.

"Theſe alterations or enlargements ariſe from two cauſes, *viz.* a varicoſe dilatation of the ſpermatic vein, and a collection, or collections, of fluid in the membrane inveſting and enveloping the ſaid veſſels. In the firſt place, as there is no reaſon in nature why a teſticle, whoſe veſſels have previouſly (for ſome time perhaps) been in a varicoſe ſtate, ſhould not become ſcirrhous; ſo it is alſo clear, that the ſcirrhoſity ſeizing ſuch teſticle will by no means remove, or even leſſen ſuch varicoſe dilatation of the veſſels from which it is dependent; on the contrary, will moſt probably, and indeed does moſt frequently, increaſe ſuch diſtention: but ſuch mere varicoſe enlargement of the veſſels, whether it be previous or conſequential to the morbid ſtate of the teſtis, does not, nor ought to prevent the removal of it, if otherwiſe fit and right. It is, indeed, an objection to the doctrine of Mr. Le Dran, and a few other writers, who make no ligature on the chord, and truſt to a ſlight contuſion of it between the finger and thumb for a ſuppreſſion of the hemorrhage; but is none to the reſt of the operation, as I can from experience teſtify.

"In the next place, the diſeaſed ſtate of a truly ſcirrhous teſticle, its weight, and the alteration that muſt be made in the due and proper circulation of the blood, through both it and the veſſels from which it is dependent, may and do concur in inducing a varicoſe dilatation of the ſpermatic vein, without producing that knotty, morbid alteration and hardneſs, which forbid our attempts. Between theſe, a judicious and experienced examiner will generally be able to diſtinguiſh.

"In the former (the truly diſeaſed ſtate), the chord is not only enlarged, but feels unequally hard and knotty; the parts of which it is compoſed are undiſtinguiſhably blended together; it is either immediately painful to the touch, or becomes ſo ſoon after being examined; the patient complains of frequent pains ſhooting up through his groin into his back; and from the diſeaſed ſtate of the membrane compoſing the tunica communis, ſuch adheſions and connections are ſometimes contracted, as either fix the proceſs in the groin, or render it difficult to get the finger and thumb quite round it.

" In the other (the mere varicoſe diſtention), the veſſels, though conſiderably enlarged and dilated, are nevertheleſs ſmooth, ſoft, and compreſſible; the whole proceſs is looſe and free, and will eaſily permit the fingers of the examiner to go quite round it, and to diſtinguiſh the parts of which it is compoſed; it is not painful to the touch; nor does the examination of it produce, or occaſion thoſe darting pains, which almoſt always attend handling a proceſs malignantly indurated.

" I do not ſay, that the diſtinction between theſe two ſtates is always and invariably to be made; but that it often may, I know from repeated experience: and that the operation may ſafely be attempted, and ſucceſsfully performed, I know from the ſame experience. The ſtate of a man left to the mercy of a malignant ſcirrhus, is ſo truly deplorable, that we cannot be too attentive in examining the preciſe nature of each individual caſe, and in embracing every opportunity of giving him that relief, which it may at one time be in our power to give, and which, the lucky opportunity miſſed, it may never be in his power again to receive.

" The other circumſtance, which I have mentioned as capable of deceiving an operator, and inducing him to believe that the ſpermatic chord is much more diſeaſed than it really is, and thereby deterring him from the performance of an operation which might prove ſucceſsful, is the extravaſation, or collection of fluid in the cellular membrane enveloping the ſpermatic veſſels, between the abdominal opening and the teſtis.

" In the cellular membrane, leading to a diſeaſed teſticle, it is no very uncommon thing to find collections of extravaſated fluid. Theſe, as they add conſiderably to the bulk, and apparent ſize of the proceſs, make the complaint appear more terrible; and, as I have juſt ſaid, leſs likely to admit relief.

" When this extravaſation is general, through all the cells of the inveſting membrane, and the ſpermatic veſſels themſelves are hardened, knotty, and diſeaſed, the caſe is without remedy; for, although a puncture, or an inciſion, will undoubtedly give diſcharge to ſome, or even the greateſt part of the fluid; yet this extravaſation is ſo ſmall, and ſo inſignificant a circumſtance of the diſeaſe, that the parts, in this ſtate, are ſo little capable of bearing irritation, that an attempt of this kind muſt be ineffectual, and may prove miſchievous.

" But, on the other hand, collections of water are ſometimes made in the ſame membrane, from an obſtruction to the proper circulation through the numerous lymphatics in the ſpermatic proceſs, while the veſſels themſelves are really not diſeaſed, and therefore very capable of permitting the operation. In this caſe, the fluid is generally in one cyſt, or bag, like to an encyſted hydrocele, and the ſpermatic chord, cyſt and all, are eaſily moveable from ſide to ſide; contrary to the preceding ſtate, in which the general load in the membrane fixes the whole proceſs, and renders it almoſt immoveable.

" A diſcharge of the fluid will, in this caſe, enable the operator to examine the true ſtate of the proceſs, and, as I have twice or thrice ſeen, put it into his power to free his patient from one of the moſt terrible calamities which can befall a man." Pott on Hydrocele.

For an account of the method of removing a diſeaſed teſticle, ſee CASTRATION.

SARCOCIRSOCELE, a combination of ſarcoma and cirſocele. See theſe words.

SARCOCOLLA, Σαρκοκολλα, a gum-reſin oozing out of an oriental vegetable, either with or without inciſions.

It has been the opinion of many writers of the middle ages, that this was the gum of the peach-tree. The origin of this opinion may be traced to Dioſcorides, who, treating of ſarcocolla, ſays, that it is the gum of a Perſian tree. The words *Perſian-tree* and *peach-tree* are the ſame both in Greek and Latin; and hence, what he ſaid of a tree growing in Perſia, has been attributed to the peach-tree; and this gum, ſo very different from the gum of that tree, has been ſuppoſed to flow from it. Linnæus ſuppoſes that it is produced by the Penæa mucronata, an Æthiopian ſhrub of the order Conglomeratæ. Others have in this inſtance doubted his authority, and the fact remains undecided.

Neither authors nor merchants are agreed as to the place where it grows: ſome ſay it is in Perſia; others in Arabia Deſerta. It is a concrete juice, that comes from Perſia and Arabia either in grains, or in tears of different colours; ſometimes white, ſometimes yellow, and ſometimes red; but the whiteſt are preferred, as being the freſheſt.

The taſte is bitter, accompanied with ſomewhat of a diſagreeable ſweetneſs, and an odour reſembling, in ſome degree, that of ani-ſeed. It ſoftens in the mouth, bubbles, and catches flame from a candle, diſſolves almoſt wholly in water, and the greateſt part of it in rectified ſpirit. It does not cryſtallize: treated with nitric acid it yields oxalic acid. It is eſteemed warm and drying; it is ſaid internally to act as a ſlow and dangerous purgative; but externally to be very good for conſolidating and healing wounds and ulcers; whence its name, from the Greek σαρξ, *fleſh*, and κολλα, *glue:* but this opinion now no longer exiſts. It is an ingredient in the " pulvis ć ceruſſa."

It has been ſometimes alſo uſed, diſſolved in breaſt-milk, in collyria, to ſtop defluxions, and take off ſpecks in the eye.

SARCOCOLLA, in *Botany*. See PENÆA.

SARCODUM, from σαρκωδης, *fleſhy*, in alluſion to the ſubſtance of the legume, is a genus of Loureiro's, of the Diadelphous claſs, with which we are unacquainted. He ſays it agrees with *Lotus* in its turgid, or full, *legume*, but differs in its half-truncate *calyx*, with three teeth; flat, not converging, *wings;* aſcending *ſtandard;* and kidney-ſhaped *ſeeds*. The *ſtem* is ſhrubby, climbing. *Flowers* roſe-coloured, in ſimple terminal ſpikes. *Leaves* pinnate, of numerous woolly leaflets.

SARCOEPLIPLOCELE, in *Surgery*, from σαρξ, *fleſh*, επιπλοον, *the omentum*, and κηλη, *a tumour*, an omental hernia, together with a ſarcocele.

SARCOLITE, in *Mineralogy*, a red variety of zeolite, cryſtallized in cubes, with each of the ſolid angles replaced by eight planes. See ZEOLITE.

SARCOLOGY, in *Anatomy*, a diſcourſe on the fleſh, or the ſoft parts of the human body.

Anatomy is divided into two principal parts; *oſteology* and *ſarcology:* the firſt of which treats of the bones and cartilages; the ſecond of the fleſh and ſoft parts.

SARCOMA, from σαρξ, *fleſh*, in *Surgery*, a fleſhy tumour. Of ſarcoma there are numerous varieties, and ſome of them have, within the laſt few years, received particular names, with a view of introducing more diſcrimination into the ſubject. Thus, Mr. Abernethy has called the ſimple tumour compoſed of fat, *adipoſe* ſarcoma; the fleſhy ſwelling containing cells, or cyſts, *cellular* or *cyſtic* ſarcoma; the tumour

confiſting

conſiſting of a ſoft ſubſtance, ſomewhat reſembling the brain, *medullary* ſarcoma; and another tumour, made up of diſtinct little maſſes, all connected together, like the ſtructure of the pancreas, *pancreatic* ſarcoma. Theſe diſeaſes not only differ in appearance, they differ in a more important point, namely, their propenſity to become malignant, and to aſſume a dangerous and even incurable form. See Tumour.

Sarcoma *of the Eyes*, a fleſhy excreſcence or tubercle formed on the inner ſurface of the eye-lids. Theſe tubercles, in their beginnings, are uſually ſmall; but they, by degrees, advance often to a very conſiderable bulk. Some of theſe are of ſmooth ſurfaces, others rough and unequal, like a raſpberry or mulberry.

They are always to be cured by extirpation, getting them out by a hook, a pair of plyers, or a needle and thread, and then cutting them out to the roots with ſciſſars: the wound ſhould be ſuffered to bleed a-while, and afterwards waſhed with a collyrium made of aloes, tutty, and ſugar of lead, mixed in roſe-water, till it is perfectly healed. Some uſe the cauſtic to theſe tumours, but the ſciſſars are more ſafe, and leſs painful. Heiſter.

SARCOMPHALON, from σαρξ, *fleſh*, and ομφαλος, *the navel*, a fleſhy excreſcence at the navel.

SARCOMPHALUS, in *Botany*, ſo called by Browne, Hiſt. of Jam. 179, in alluſion to the fleſhy navel-like rim which crowns the germen. See Rhamnus.

SARCOPHAGUS, Σαρκοφαγος, in *Antiquity*, a ſort of ſtone coffin, or grave, in which the ancients laid thoſe they had not a mind to burn.

The word, as derived from the Greek, literally ſignifies *fleſh-eater;* becauſe, at firſt, they uſed a ſort of ſtones for the making of theſe tombs, which quickly conſumed the bodies. The quarries from whence they dug them were near a city of Troas, named Aſſum. They had the faculty to waſte away a body to nothing, ſave the teeth, in forty days.

This ſtone reſembled a reddiſh pumice-ſtone, and had a ſaltiſh taſte; they alſo made veſſels of it to cure the gout, into which they put their feet, not ſuffering them to continue there too long. See *Aſſius* Lapis.

SARCOPHYIA, from σαρξ, *fleſh*, and φυω, *to grow*, in *Surgery*. See Sarcoma.

SARCOSIS. See Sarcoma.

SARCOSTEMMA, in *Botany*, ſo named by Mr. R. Brown, from σαρξ, σαρκος, *fleſh*, and ϛεμμα, *a crown*, in reference to the fleſhy coronet of the ſtamens.—Brown. Aſclep. 39. Ait. Hort. Kew. v. 2. 76.—Claſs and order, *Pentandria Digynia*. Nat. Ord. *Contortæ*, Linn. *Apocineæ*, Juſſ. *Aſclepiadeæ*, Brown.

Eſſ. Ch. Maſſes of pollen ten, pendulous, ſmooth. Crown of the ſtamens double; the outermoſt cup-ſhaped or annular, crenate. Corolla wheel-ſhaped.

1. S. *viminale*. Twiſting Sarcoſtemma. Ait. n. 1. (Cynanchum viminale; Linn. Mant. 392. Syſt. Veg. ed. 14. 257. Willd. Sp. Pl. v. 1. 1252. Euphorbia viminalis; Linn. Sp. Pl. 649, excluding the ſynonym of Alpinus and Dillenius. Apocynum guineenſe merè aphyllum, flore albo tetrapetalo odoratiſſimo; Herm. Parad. 61.)—Native of the Eaſt Indies. Appears to have been cultivated by Miller in 1731, but is probably not now extant in our collections. The *ſtem* is twining, round, ſmooth, ſucculent and leafleſs, the thickneſs of a gooſe-quill. *Flowers* in lateral tufts, white, ſmall.

SARCOTHLASMA, in *Surgery*, a bruiſe.

SARCOTICS, medicines which tend to produce new fleſh, or granulations, in wounds and ulcers.

SARCULATION, a term uſed, in the *Ancient Huſbandry*, to expreſs a ſort of hoeing, which they uſed among their peaſe and beans, and ſometimes among their corn.

The ſarculum was a ſort of narrow and long hoe, with which they rooted up the weeds among plants growing irregularly. We have the ſame kind of inſtrument in uſe at this time in ſome places for hoeing between the plants of flax; but one way of ſowing, in rows, at preſent, has prevented the neceſſity of having recourſe to ſo inconvenient and troubleſome an inſtrument in other caſes.

SARCULATURA, in our *Old Writers*, weeding of corn; whence *una ſarculatura* was the tenant's ſervice of one day's weeding for the lord. "Tenet in bondagio, & debet unam ſarculaturam, &c."

SARCUS, in *Geography*, a town of France, in the department of the Oiſe; 3 miles N.W. of Grandvilliers.

SARDA, in *Ancient Geography*, a large port of the Mediterranean, on the coaſt of Mauritania, between Tritum and Cæſarea. Strabo.

Sarda, in *Natural Hiſtory*. See Cornelian.

Sarda, in *Ichthyology*, a name by which ſome call the fiſh, more uſually known by the name of *pelamys*, or *pelamys ſarda;* a fiſh reſembling a young tunny, but having larger and longer teeth, and no ſcales.

SARDACHATES, in the *Natural Hiſtory of the Ancients*, the name of a ſpecies of agate, found frequently at this time on the ſhores of rivers in the Eaſt Indies, and ſeeming to contain an admixture of the matter of the common red cornelian, is very excellently characterized by the name the ancients gave it.

It is a very elegant and beautiful ſpecies, and is often found of a conſiderable ſize. It is of a pale, whitiſh ground, and has no veins or other variegations, except a multitude of minute ſpots, of a pale red, and of the matter of a red cornelian; theſe are ſcattered very ſparingly in ſome parts of the maſs, but in others they are ſo cluſtered together, as to make ſmall clouds of an elegant red. It is very hard, and is capable of an elegant poliſh. Our lapidaries do not much eſteem it, but in ſome other places it is wrought into toys, which are much eſteemed.

SARDAM, or Saenredam, in *Geography*, a ſea-port town of Holland, furniſhing ample ſupplies of timber and naval ſtores. It has been ſaid, that the ſhip-builders of Sardam would undertake in two months' notice, to build a ſhip of war every week during the year; 5 miles N. of Amſterdam.

SARDANA, or Sarbena, in *Ancient Geography*, a town of India, on this ſide of the Ganges. Ptolemy.

SARDANAPALUS, in *Biography*, a king of Aſſyria, whoſe name is proverbial for effeminate luxury, lived in an age ſo remote from the period of authentic hiſtory, that the circumſtances of his reign are only known from doubtful narrations. Chronologiſts differ much in the era to which they aſſign him, but Blair gives the date about 740 before Chriſt. He was probably a prince endowed with great riches and power, in proof of which it was inſcribed on his tomb, that he built the cities of Tarſus and Anchiale in one day, which it is impoſſible to underſtand literally. He was reduced to the loweſt rank by groſs ſenſuality, and is ſaid ſo far to have degraded himſelf as to have aſſumed a female habit, and frequently to take a place among his female concubines. Under ſuch a character the fall of the Aſſyrian monarchy could not be a matter of ſurpriſe. Public diſcontent was fomented by Arbaces, a Median ſatrap, and Beleſis, a Babylonian prieſt, who brought a great army of revolters to overthrow the government. Sardanapalus, ſenſible of the dangers to which he was expoſed, aſſembled all the troops upon which he could rely, and defeated the inſurgents in three different actions. Thinking himſelf perfectly ſecure, he reſumed the diſſolute courſe to which he had been habituated, and while he was preparing a great feſtival for his victorious army, Arbaces, reinforced by the Bactrians, fell upon them in the night, and forcing the camp, purſued the fugitives with great ſlaughter to the gates of Nineveh. In this famous place the king ſhut himſelf: the height and ſtrength of its walls enabled him to hold out two years: but at length an inundation of the Euphrates having made a large breach in the wall, Sardanapalus finding that all hopes of future defence muſt be abandoned, burnt himſelf, his treaſures, his concubines, and his eunuchs. This event is ſuppoſed to have happened about the year B. C. 720, and in the 20th of his reign. Univer. Hiſt. Blair's and Playfair's Chronol.

SARDANUS, in *Ichthyology*, the name of a fiſh of the harengiform kind, caught in the Mediterranean, and common in the markets of Rome and Venice. Its body is broader than that of the pilchard, and its back green; and the line which runs along the belly is much leſs rough than in that fiſh. It is indeed eaſy to diſtinguiſh it from the pilchard, but not ſo eaſy to ſhew in what it differs from the common herring more than in ſize. It ſeems very probable, that it is no diſtinct ſpecies of fiſh; but that the herring, like the pilchard, is always ſmaller in the Mediterranean than the ocean. Willughby.

SARDAR, in the Turkiſh *Military Orders*, the title of an officer choſen from among the caias of the janizaries on ſome particular occaſion; ſuch as to head a detachment ſent to war, or on any other occaſion.

The word is of Perſian origin, and is derived from *ſar*, which in that language ſignifies a *head* or *chief*.

This officer is a colonel of a detached body; he is attended in his expedition by his deputy, and two ſecretaries, and his office expires at his return from the buſineſs he was diſpatched on.

SARDE, in *Mineralogy*, a variety of chalcedony; ſee CHALCEDONY. It has an orange-yellow colour, ſometimes inclining to brown: by tranſmitted light it is blood-red.

SARDELLA, in *Ichthyology*, a name by which ſome have called the pilchard of the Mediterranean ſea, ſuppoſing it different in ſpecies from that of the ocean, but it ſeems, in reality, to be no other than the common pilchard, only not growing ſo large there as in the ocean.

SARDENA, in *Ancient Geography*, a mountain of Aſia, near the river Hermus, according to Herodotus.

SARDENA, or *Sardenna*, a town of Aſia, in Leſſer Armenia. Ptolemy.

SARDENA, in *Geography*, a town of the iſland of Sardinia; 18 miles E.S.E. of Oriſtagni.

SARDES, in *Ancient Geography*. See SARDIS.

SARDESUS, a town of Aſia Minor, in Lycia.

SARDIAN, SARDOIN, or *Lapis Sardius*, a precious ſtone, of a blood colour, ſemi-tranſparent; the ſame with what we otherwiſe call a *cornelian*.

The moſt beautiful ſardians are thoſe brought from about Babylon: thoſe of Sardinia, whence they take their name, are in the ſecond claſs. There are others, and thoſe no contemptible ones, found near St. Mauro, in Albania; and others, very ſmall ones, about the Rhine, in Bohemia, Sileſia, &c. To give them the greater luſtre, it is uſual, in ſetting them, to lay ſilver-leaf underneath. The ſardian is moſt uſed for ſeals, as graving eaſily, yet taking a fine poliſh.

The author of the book falſely aſcribed to Albertus Magnus, attributes ſeveral wonderful virtues to this ſtone. See CORNELIAN.

SARDIANA, in *Ancient Geography*, a country of Aſia, in the vicinity of Bactriana, according to Diodorus Siculus. Some have ſuppoſed it to be the ſame with Sogdiana.

SARDICA, or SERDICA, a town which was the capital of the Eaſtern Illyria. Geographers have differed concerning both the orthography and poſition of this place. Ptolemy places it among the Mediterranean towns of Thrace; others place it in Dacia, *i. e.* the Aurelian Dacia, on the other ſide of the Danube.

Sardica appears to have been the capital of the ſecond Illyria; it was a conſiderable town, having been enlarged by Trajan. The Bulgarians gave it the name of Triaditza. The emperor Baſil laid ſiege to it in 981, according to Zonaras, which he afterwards diſcontinued. Some remains of Sardica appear near *Sophia*.

SARDINA, in *Ichthyology*, a name by which many have diſtinguiſhed a fiſh of the harengiform kind, which is, in reality, however, no other than a ſmall pilchard, growing to a larger ſize in the ocean than in the Mediterranean.

SARDINIA, in *Geography*, an iſland of the Mediterranean, in the weſtern part, about 140 miles in length from N. to S., and 60 in its medial breadth from E. to W. It was called by the Greeks *Sardo* and *Sardon*, *Ichnuſa*, and *Sardialotis*. The etymology of its name is thought to be derived from its form. As Sicily was called Trinacria from its three angles, Sardinia was denominated, in the Eaſtern language, *Saad* or *Sarad*, denoting the traces of a foot, from the reſemblance it bore to a ſandal. Hence alſo Timæus called it *Sandaliotis*, and Martianus Capella and Solinus, copying Pliny, gave it the name of *Ichnuſa*, from the Greek ιχνος, veſtigium, becauſe it reſembled the trace of a foot covered with a ſandal. To this purpoſe Stephanus Byzantinus ſays expreſsly, Εκαλειτο (Σαρδω) δε ιχνȣσα, διοτι εοικεια ην ανθρωπȣ ιχνει. Claudian alſo ſays:

> "Humanæ ſpeciem plantæ ſinuoſa figurat
> Inſula: Sardiniam veteres dixère coloni."

Silius Italicus likewiſe refers to this reſemblance:

> " ——— Nudæ ſub imagine plantæ
> Inde Ichnuſa prius Grajis memorata colonis."

The ancient hiſtory of Sardinia is involved in great obſcurity and uncertainty. Pauſanias, however, ſpeaks of a perſon named Iolaus, who, as he ſays, paſſed into Sardinia, and relates this fact among other events of the Trojan war. After the ſack of Troy, the Trojans, flying from their victorious enemies, and ſeeking a new country, eſtabliſhed themſelves in this iſland. The Greeks were afterwards driven hither by the Africans, and being powerful, they cauſed the Trojans to withdraw into the mountains, where they ſecured themſelves from attack. The Phœnicians and Greeks, having ſent colonies to this iſland, erected in it ſeveral ſmall ſtates, as they had done in the ſouth of Italy and Sicily. It is not certain at what period the Carthaginians eſtabliſhed themſelves in Sardinia. It was probably when they began to extend their commerce, and that they availed themſelves of the conveniences of this iſland for the accommodation of their veſſels; nor is it improbable that the Phœnicians had previouſly uſed it for a ſimilar purpoſe. In the firſt year of the 97th olympiad, a ſevere plague very much diſtreſſed and enfeebled the Carthaginians, of which the Sardinians took the advantage by attempting to throw off their yoke; but their attempt proved ineffectual. However, in the firſt Punic war, the Carthaginians were driven from Sardinia; and the Romans eſtabliſhed A. U. C.

521, under the conduct of M. Pomponius. Corſica was alſo ſubdued in the following year, and both iſlands became ſubject to the ſame prætor. Under the laſt emperors of the Weſt, Sardinia was governed by a preſident; but when the Vandals penetrated into Africa, under Juſtinian, the government of Sardinia was annexed to that part of the empire. Afterwards the Saracens invaded and pillaged it; but part of the iſland was recovered from them by the republics of Genoa and Piſa. Pope Boniface, in the plenitude of his power, transferred the iſland to the king of Aragon, who, having ſubdued the Genoeſe and Piſans, and the other inhabitants, annexed it to his own dominions. Thus it remained in union with the crown of Spain, till it was conquered by the allies in 1708, and allotted to the emperor by the peace of Utrecht in 1713. In 1717 it was recovered by the Spaniards; but two years afterwards they were obliged to abandon it, and then, *viz.* in 1719, the duke of Savoy obtained it in lieu of the kingdom of Sicily. Its revenues have been inconſiderable; for, after the deduction of charges for the army and civil offices, they have not much exceeded 200*l.* Its capital is Cagliari.

Sardinia was much celebrated among the ancients for its fertility; thus Silius Italicus ſpeaks of it, lib. xii. v. 375.

“ ——— Propenſæ Cereris nutrita favore.”

It was reckoned one of the granaries of Rome. All parts, however, were not equally fertile; and it had formerly, as it has now, ſeveral places that were inſalubrious. Accordingly Claudian thus deſcribes it:

“ ——— Quæ pars vicinior Afris
Plena ſolo, ratibus clemens; quæ reſpiat arctum
Immitis, ſcopuloſa procax, ſubitiſque ſonora
Fluctibus.”

Sardinia ſtill produces all ſorts of fruits and cattle in abundance; but on account of its moraſſes, and the high mountains on the N. ſide, which obſtruct the courſe of the wind, the air is rendered very unwholeſome; and hence the ancient Romans were induced to make it a place of baniſhment. Among the animals of this iſland wild horſes abound. Theſe are chiefly found in the territories of Bultei and Nurra; and they are ſtill more numerous in the iſle of St. Antico, in the foreſt of Canais: they are very ſmall, but extremely well made, and active. Rams have ſometimes from four to ſix horns. Small deer are not uncommon; and boars are both numerous and terrible. The wild ſheep inhabit the moſt ſolitary parts of the mountains, and ſometimes engender with the tame. The tunny fiſhery is here of conſiderable importance; but anchovies are rare, as are alſo ſardines, which formerly were abundant, and gave, as ſome ſay, its name to the iſland. The coral fiſhery deſerves to be mentioned. Among the minerals, the principal is ſilver, of which there are ſeveral mines, ſuch as thoſe of Guſpini, Arbus, Argentera, &c.; but the lead-mines are the moſt productive, thoſe of Igleſias yielding from 60 to 80 pounds in the hundred weight, and being found in hills of argillaceous ſchiſtus and lime-ſtone, whilſt the moſt common gangart is barytes. The mines are computed to produce 321,000 francs. In the northern mountains are found cornelians, chalcedonies, agates, turquoiſes, &c.; but the ſardonyx is as rare as the ſardine. The mountains of Nurra abound in porphyry; and granite is chiefly found in Gallura, and ſeems to have been uſed by the Romans. The mountains run N. and S.; the higheſt being Limbara, Villanova, Arizzo, Fonni, the ſummits of which are generally covered with ſnow. The plains, which lie principally towards the ſouth, are tolerably fertile in wheat, which ſupplies a quantity for exportation, barley, beans, lentiles, &c. The moſt eſteemed wine is that of Naſco. Here are groves of wild olive trees; and the orange, lemon, pomegranate, jujube, and other fruit-trees, are common; and the tall palm-tree decorates the foreſts. The population of Sardinia amounted, in the year 1790, to 456,990 ſouls; that of Cagliari being about 30,000. The dreſs of the Sardinians is a veſt of white or ſcarlet woollen, covered with a large coat or jacket, without ſleeves, compoſed of four ſheep-ſkins. The dreſs of the women has in it nothing particular. The Italian language begins to prevail here; but the ancient dialect ſeems to be a mixture of the languages of the various conquerors. The original inhabitants, like thoſe of Corſica, are thought by ſome perſons to have been the Iberi from Spain. The revenues are computed by Azuni at 1,695,062 francs; the exports about 8,000,000 livres; and the imports 2,000,000. The religion is the Roman Catholic; and it is ſingular, that with ſix biſhoprics there are three archbiſhoprics. This iſland has been much neglected by the government, as Mr. Young informs us in the 2d volume of his “Journey in France;” for, excluſive of the mountains, the whole country may be regarded as waſte, and very partially cultivated. The chief proprietors are abſentees; and the peaſants are cruſhed by rapacious ſtewards. The numerous waſtes abound with wild ducks; but the number of cattle and ſheep is deplorably ſmall, and the moraſſes produce moſt noxious exhalations. The lands in this iſland, as well as in Corſica, belong to the community, and not to private proprietors; and on this account, it is ſaid, they are almoſt utterly neglected. It has been ſuggeſted, that the firſt and indiſpenſable meaſure towards the improvement and civilization of theſe iſlands would be, by a ſtrong and armed force, to divide them into eſtates of a moderate ſize, among the moſt able and powerful men in each community; and to ſpare no means for inſtructing the inhabitants with regard to their real intereſts, the purſuits of induſtry, which ought to be rewarded by lands reſerved for that purpoſe. The two principal rivers in this iſland are the Oriſtano, which runs about eighty miles, and the Flumendoſo, paſſing in oppoſite directions E. and W., and dividing the iſland into two portions. Pinkerton's Geog. vol. i.

SARDIS, or Sardes, a town of Aſia Minor, the metropolis of Lydia, and the ſeat of king Crœſus. It was ſituated between the Cayſter to the ſouth, and the Hermus to the north, on the banks of the Pactolus, at the foot of mount Tmolus. The citadel was placed on a craggy mountain, abounding with precipices, S.E. of the town, and, on account of its ſituation, was thought to be impregnable. Sardis was a rich and ſplendid city. Florus calls it the ſecond Rome. The kings of Lydia ſelected it as the place of their reſidence. Strabo repreſents it as an ancient city, not inferior in magnificence to any in Aſia; but he conſiders it as poſterior to the ſiege of Troy. Herodotus relates that this city was taken by the Cimmerians, who were driven from their country by the Scythian Nomades, under the reign of Ardys, whoſe reign commenced 680 years B.C. It remained in poſſeſſion of the Cimmerians until the reign of Alyattes II., who aſcended the throne 619 years B.C. took poſſeſſion of the capital, and drove the Cimmerians out of Aſia. Strabo informs us that the Tyrians and Lycians took poſſeſſion of it, and it became ſubject to the Perſians in the year 584 B.C. It was in the plain before this city that Cyrus gained a victory over Crœſus, king of Lydia, and then took the city after a reſiſtance of 14 days. The Perſians thought Sardis of ſuch conſequence after they gained poſſeſſion of it, that Xerxes hearing that it was taken by the Greeks, commanded one of his attendants to cry aloud every day while he was at dinner, "The Greeks have taken Sardis;" a practice which was continued till he recovered the city.

In the year 504 B.C., Ariſtagoras, lieutenant of the ſovereign of Miletus, revolted againſt the Perſians, who had remained in poſſeſſion of Sardis from the deſtruction of the kingdom of Lydia. Sardis was taken without reſiſtance, but the citadel was defended by Artaphernes with a good garriſon. On this occaſion a ſoldier ſet fire to a houſe, which communicated itſelf to other buildings, and occaſioned a conflagration that ſpread through almoſt the whole city. The temple of Cybele was burnt. The city was afterwards rebuilt, and paſſed under the dominion of the Greeks. In the year 333 B.C., after the battle of Granicus, Sardis, which was conſidered as the ſtrongeſt place occupied by the Perſians near the ſea-coaſt, ſurrendered to Alexander; who left it free, and allowed it to be governed by its own laws.

In the war carried on by Seleucus againſt Lyſimachus, he took poſſeſſion of Sardis in the year 283 B.C.; the citadel, with all the treaſures of Lyſimachus, having been delivered to him by Theodotus, the governor. In the year 214 B.C., Antiochus the Great made himſelf maſter of the city and its citadel, and kept poſſeſſion of it for 25 years. It ſerved for the place of his retreat after having loſt the battle of Magneſia of Sipylus, 190 years B.C. When this prince left Sardis to join his ſon Seleucus, he committed the cuſtody of it to Zenon, and entruſted the government of the reſt of Lydia with Timon. The inhabitants of Sardis delivered themſelves up to the Romans, in whoſe poſſeſſion it remained. Under the reign of the emperor Tiberius, Sardis was almoſt wholly deſtroyed by an earthquake; but the emperor gave orders for rebuilding it at a great expence. The emperor Adrian was alſo a very conſiderable benefactor to this city; and hence he obtained the title of Neocorus. Antonine, his adopted ſon and ſucceſſor, was particularly honoured by the inhabitants of Sardis. This city is repreſented on ſome medals as the metropolis of Aſia; and it is ſaid to have been the only city of proconſular Aſia which had aſſumed this denomination. A medal of Auguſtus, however, gives reaſon for concluding that it had been a metropolis under this prince. At Sardis were exhibited every five years ſome particular games, called "Chryſanthius," on account of gilded flowers, which compoſed the crown aſſigned to the victor. Sardis was one of the firſt towns which embraced Chriſtianity, having been proſelyted, as it is ſaid, by the apoſtle John; and ſome have thought that Clement, a diſciple of St. Paul, was its firſt biſhop. It has been alſo reckoned among the number of the ſeven churches, mentioned in the Revelation; but others have thought that this honour belonged to a village in its vicinity. The territory of Sardis was renowned for ſeveral valuable productions. The precious ſtone, called ſardonyx, is ſaid to have derived its name from this city; and it is ſuppoſed that the firſt mines were diſcovered in this place. Pliny ſays that the tree which yielded a fragrant incenſe, grew in great abundance in the environs of Sardis, where the kings of Aſia had made theſe plantations. The inhabitants were induſtrious and active, and celebrated for many valuable manufactures. Pliny relates that the firſt woollen manufactures were eſtabliſhed at Sardis; and Athenæus informs us, that the inhabitants compoſed a variety of precious perfumes. The imperial medals of Sardis are very numerous, but thoſe ſtruck in honour of the city are not ſo many. It appears by an inſcription reported by M. Spon, that Jupiter was particularly honoured at Sardis; he was there called the protector of the city. Here are ſtill to be ſeen the ruins of a large palace, with two magnificent churches, with a great many pillars and cornices of marble, the remains probably of a temple, and alſo of the citadel. Near this city was to be ſeen, in the time of Herodotus, the ſepulchre of Alyattes, the father of Crœſus; the foundation of which was ſtone, but the whole ſuperſtructure of earth, being 6 furlongs 200 feet in circumference, and 1300 feet in breadth.

SARDOA, SARDOUM, or *Sardonia herba*, ſo called from its growing plentifully in Sardinia, in *Botany*, a name given by the ancients to the water-crowfoot, with jagged leaves, called alſo *apiaſtrum* and *ranunculus apii folio*, from its leaves reſembling in ſome degree thoſe of the ſmallage. This has been, in all ages, characterized as a poiſon; nor will the cattle touch it, though a ſucculent and well-looking herb; but Pliny has found means to confound this with baum, under the name of apiaſtrum, which he ſays is fed on by the bees in Italy, but is very well known to be a dangerous poiſon in Sardinia.

SARDOAL, in *Geography*, a town of Portugal, in Eſtremadura; 3 miles N. of Abrantes.

SARDONES, in *Ancient Geography*, a people who inhabited the weſtern part of Gallia Narbonnenſis, according to Pliny. Theſe people occupied that part which is now called Rouſſillon, in the environs of Ruſcino.

SARDONIA, a town of India, on this ſide of the Ganges.

SARDONIAN LAUGHTER. See RISUS *Sardonicus*.

SARDONIS, or SARDANUS, in *Ancient Geography*, a river of Thrace, in the vicinity of the town of Olynthus, according to Stobæus.

SARDONYX, in *Mineralogy*, is compoſed of a milk-white variety of chalcedony, intermixed with ſarde, or cornelian. It is frequently in larger maſſes than cornelian, and is much valued by engravers of cameos. See CHALCEDONY.

SARE, in *Geography*, a town of France, in the department of the Pyrenées; 6 miles S.E. of St. Jean de Luz.

SARECTO, the chief town of Duplin county, North Carolina, ſituated on the N.E. branch of Cape Fear river, which affords water for rafts to the town. It contains a court-houſe, gaol, and about 20 houſes; 130 miles N. of Wilmington.

SARENA, a town of France, in the department of the Loiret; 6 miles N. of Orleans.—Alſo, a town of South America, in the kingdom of Chili. S. lat. 20° 40′.

SAREPTA, or ZAREPHATH, in *Ancient Geography*, a town of Phœnicia, ſituated S. of Sidon. This town is celebrated in Scripture as the abode of the prophet Eli in the houſe of a widow, whoſe ſon he reſtored to life. This town, ſituated on the ſea-coaſt, is the ſame with that from which, as the Greeks ſay, Europa, the daughter of Agenor, was ſtolen away by Jupiter, and carried to the iſle of Crete; or, as ſome have ſaid, this young female, walking on the ſea-coaſt, was perceived by ſome Cretan merchants, who took her away into their own country, in a veſſel, on the prow of which was the figure of a bull.

SAREPTA, in *Geography*, a town of Ruſſia, in the government of Saratov, in which a vitriolic ſpring was diſcovered in the year 1775; 8 miles S. of Tzaritzin.

SARFA, a town of Arabia, in the province of Nedsjed; 63 miles S.W. of Kariatim.

SARFAR, a name given by ſome of the chemiſts to iron.

SARFE, in *Ichthyology*. See RED-*Eye*.

SARFEND, or SHARFEND, in *Geography*, a town of Paleſtine, near the ſea-coaſt, ſuppoſed to be the ancient Sarepta; 8 miles S. of Saida.

SARGA, in *Ancient Geography*, a town of Macedonia, upon the bank of the Singitic gulf.

SARGANS, in *Geography*, a town of Switzerland, and capital of a county of the ſame name. The county, about 15 miles each way in extent, and very mountainous, breeds and fattens a great number of cattle, and its vallies produce grain and fruit. In the mountains are found three kinds of ore, black, red, and aſh-coloured, which, fuſed and properly mixed, without any other proceſs or addition, yield a genuine ſteel. The inhabitants are partly Calviniſts and partly Catholics; 45 miles E.S.E. of Zurich. N. lat. 47° 5′. E. long. 9° 32′.

SARGARAUSENA, in *Ancient Geography*, a country of Cappadocia, which had the title of prefecture, and comprehended ſix towns.

SARGASIS, Carsagis, or *Carſat*, a town of Aſia, in the Leſſer Armenia; ſituated on the route from Satala to Meliténé, between Arauraci and Sinervæ, according to the Itin. of Antonine.

SARGATII, a people of Sarmatia in Europe; who inhabited the territory between the Alauni and the Amanobii. Ptolemy.

SARGAZO, or Sargaso, in *Botany*, a name for the plant commonly called *ſea lentils*; a ſmall ſea-plant found among the rocks, and ſometimes at open ſea, and ſuppoſed to be a good diuretic.

SARGE, in *Geography*, a town of France, in the department of the Loire and Cher; 3 miles S.S.W. of Montdoubleau.

SARGEL, a ſea-port town of Africa, where Andrew Doria was defeated by Barbaroſſa. N. lat. 36° 30′. W. long. 2° 15′.

SARGETIA, in *Ancient Geography*, a river of Dacia, which watered the town of Zernizagathuſas, ſince called Ulpia-Trajana, and ran into the Rhadon. Dion Caſſius.

SARGNAC, in *Geography*, a town of France, in the department of the Gard; 6 miles N.E. of Niſmes.

SARGO, in *Ichthyology*, a name uſed by Auguſtino Scilla, in his book of Petrifactions, for the name of one of thoſe kinds of ſea-fiſh, in the hinder part of whoſe jaws are found thoſe round *dentes molares*, or grinder teeth, which, when found in a petrified ſtate, are called *bufonitæ*, or toadſtones.

It is very certain, that by ſargo, Scilla means no other fiſh than the ſargus; yet Mr. Willughby ſays, that the ſargus has none of theſe round grinders, or *tubercula oſſea*, as he calls them, and makes this one of the characters by which the ſargus is to be diſtinguiſhed from the ſparus and ſcarus, and other fiſhes of that tribe.

It is probable that Scilla, who wrote more expreſsly on theſe ſubjects, diſſected his ſargus with too much accuracy, to be miſtaken in this material part; and it is poſſible that Mr. Willughby, though a very accurate writer, might overlook theſe teeth in the hinder part of the jaw of a fiſh, which he was only deſcribing in the common way, and had no peculiar reaſon for examining in ſo nice a manner juſt in this part. Phil. Tranſ. N° 219. p. 195.

SARGUS, the name of a fiſh well known, and much eſteemed, among the ancients, and not uncommon at this time in the markets of Rome, Venice, &c. being caught in the Mediterranean and Adriatic in conſiderable quantities.

It ſomething reſembles the ſparus in figure, but its noſe is longer and more pointed, and turns up a little, and its fore-teeth are ſhaped like two human teeth, which ſtand in the ſame part of the mouth. It has no tubercles in the hinder part of the jaws, as the ſparus has; and its whole body is variegated with brown tranſverſe rings, reſembling the variegations of the pearch, and has only one fin on the back, the anterior rays of which are prickly, the hinder ones not at all ſo. Willughby and Geſner. See Sparus *Sargus*.

Sargus is alſo the name of a river fiſh, called by others *gardon*, *ſardus*, and *cephalus*, and by many ſuppoſed to be no way eſſentially different from our common roach.

It is a river fiſh, very much reſembling the chub in its general figure, and the ſize of its ſcales, but it has a ſmaller head, and a ſomewhat broader body, than that fiſh; its back is blueiſh, its neck greeniſh, and its belly white; it has no teeth; its eyes are yellow, and it is uſually leſs fat than the chub. See Cyprinus *Jeſes*.

It is a very briſk and lively fiſh, and is a ſort of emblem of health among the French, and uſed proverbially as ſuch in the ſame manner as the roach among us. We ſay of a healthy man, *he is as ſound as a roach*; they, *he is as ſound as a gardon*. It is common in the rivers of France, Italy, and Germany, and is eſteemed but a moderately fine fiſh for the table. Willughby.

SARHAUT, in *Geography*, a town of Bengal; 32 miles W.N.W. of Nagore.

SARHOU Hotun, a town of Chineſe Tartary; 392 miles E.N.E. of Peking. N. lat. 41° 56′. E. long. 123° 52′.—Alſo, a town of Chineſe Tartary, in the government of Kirin; 20 miles N. of Nimgouta. N. lat. 44° 44′. E. long. 129° 21′.

SARI, a town of Perſia, the capital of the province of Mazanderan, once the ſeat of Aga Mahomed Khan, and now the reſidence of one of the princes of Perſia. This is a very ancient city, being frequently alluded to by Ferdouſee; and when viſited by Hanway, contained four or five temples of the ancient Perſians, built of ſolid materials, and in the ſhape of rotundas, about 30 feet in diameter, and raiſed to a point near 120 feet in height. Sari is a ſmall but well fortified town, being ſurrounded with a good wall and deep ditch. It is crowded with inhabitants, and a ſociety of Armenians is eſtabliſhed in the vicinity of the town. Here are many merchants of credit, who carry on a briſk trade with Aſtrakhan, and the interior parts of Perſia. The palace, though ſmall, is commodious and neat. The country in the vicinity of the town is flat, woody, interſperſed with ſtreams, and bounded on the N.E. and S.W. by a low range of hills. Balfraſh, the ſecond town in Mazanderan, is larger than Sari, ſituated, according to Forſter, in a low damp valley, and about a mile and a half in circumference. Here are four caravanſeras, and the bazar denotes an active traffic. The houſes of Balfraſh are mean, and the ſtreets in the winter ſeaſon are choaked with mud. The road between this place and Sari is hardly paſſable in winter. Ferrabad, though an ordinary town, ſituated at the mouth of a river, has a ſmall trade in rice, ſalt-fiſh, and pottery. Sari is 25 miles W. of Ferrabad. N. lat. 35° 35′. E. long. 52° 58′.

Sari is alſo a town of Perſia, in the province of Irak; 60 miles N. of Nehavend.

SARIANA, in *Ancient Geography*, a province of Africa, but little known.

SARIATIM, in *Geography*, a town of Aſiatic Turkey, in Natolia; 21 miles S.W. of Kiangari.

SARIBROD, a town of European Turkey, in Bulgaria; 28 miles W.N.W. of Sophia.

SARIBUS, in *Botany*, a name given by Rumphius to a ſpecies of Corypha. See that article.

SARIE, in *Geography*, a town of New Navarre; 118 miles S.S.W. of Caſa Grande.

SARIESNIEMI, a town of Sweden, in the government of Ulea, on a lake; 28 miles N.W. of Cajana.

SARIGGIOLA, a town of European Turkey, in Macedonia; 20 miles S. of Edeſſa.

SARIGNAN, or *St. Charles*, one of the Ladrone iſlands, in the Eaſt Indian ſea; 18 miles from Guam.

SARIGOY, in *Zoology*, a name by which ſome call the creature we know by the name of the opoſſum.

SARIKAUAK, in *Geography*, a town of Aſiatic Turkey, in Caramania; 40 miles N. of Selefkeh.

SARINENA. See CARINENA.

SARINHAYM, a river of Braſil, which runs into the ſea, S. lat. 8° 50′.

SARIO, in *Ichthyology*, a term uſed by ſome authors for the ſalmon when in the middle ſtate of its growth, when it is paſt its younger ſtate, in which it is properly called *ſalar*, and is not yet arrived at what is properly called a *ſalmon*. See SALMO.

SARIPHI, in *Ancient Geography*, a mountain of Aſia, in Margiana, in which is the ſpring of the river Oxus.

SARISSA, in *Antiquity*, a very long ſpear uſed by the Macedonians. Ælian ſays, that by the ancient uſage they ought to be ſixteen cubits in length; but that in fact they were but fourteen, two cubits being allowed for the handle, and the other twelve to cover their bodies.

SARISSUS, in *Botany*, Gærtn. v. 1. 118. t. 25. See HYDROPHYLAX.

SARIZKO, in *Geography*, a town of Ruſſia, in the government of Tobolſk; 400 miles N. of Turuchanſk. N. lat. 72° 20′. E. long. 84° 26′.

SARK, or SERK, (*Cerq*, French,) an iſland on the coaſt of Normandy, ſubject to the crown of England; ſituate 14 miles N.W. from Jerſey, 6 from Guernſey, and 24 from the French coaſt: its length is not quite three miles, extreme breadth a mile and a half, and medium breadth under a mile. It is nearly divided into two parts, called Great and Little Sark, which are united by a narrow, lofty ridge, waſhed by the ſea on each ſide, at the depth of 250 feet, and affording on its ſummit a moſt narrow foot-path. In 1549 the iſland, being then uninhabited, was ſeized and fortified by the French. Soon afterwards, the garriſon was ſurpriſed and driven out by the crews of ſome Flemiſh veſſels; who preſented their acquiſition to queen Mary, then the wife of their ſovereign Philip. In 1565, queen Elizabeth granted the iſland in fee to Helier de Carteret, ſeigneur de St. Ouen, in Jerſey, who colonized it from his native iſland; giving to his dependants, whom he removed thither, hereditary eſtates, which their deſcendants, or purchaſers under them, ſtill enjoy. The remaining poſſeſſions of the de Carteret family in this iſland have alſo been ſold, and are now the property of that of Lepellé, in Guernſey. In 1812 the iſland contained 63 inhabited dwellings, 78 families, 416 individuals of each ſex and every age, 87 men ſubject to militia duty, and 22 capable of occaſional duty. It is a fertile and healthy ſpot, producing, beyond the wants of its inhabitants, ſome wheat, oats, and potatoes, annually exported to Guernſey. Between 400 and 500 acres are under cultivation; the remainder ſheep-walk, or under furze. This iſland and Alderney are ſubject to the governor of Guernſey; and an appeal lies to the royal court there, from the deciſions in civil caſes, and *au petit criminel* of the ſénéchal of the iſland, who adminiſters juſtice under the ſeigneur. Criminal caſes of a ſerious nature are referred, in the firſt inſtance, to the royal court of Guernſey. The number of horſes in the iſland is 68, with 48 draught oxen, about 100 young cattle, and 120 cows; between 300 and 400 ſheep.

SARK, *Little*, a very ſmall iſland, a little to the ſouth of Sark.

SARK, *New*. See EGMONT.

SARK, a river of Scotland, formed of two branches, the white and black, which runs into the Eden, four miles below Carliſle.

SARKA PRINCEPS, one of the Hebrew accents, ſometimes denoting a comma, and marked over a letter, thus (∾).

SARKAPALLY, in *Geography*, a town of Hindooſtan, in Myſore; 12 miles S.E. of Tademeri.

SARKAS. See SERAES.

SARKAW, a town of Pruſſia, in the Curiſch Nerang; 24 miles N. of Konigſberg.

SARKFOOT, a ſmall village and ſea-port in the pariſh of Graitney, and county of Dumfries, Scotland, is ſituated on the northern ſhore of the frith of Solway, which is here about five miles broad. The harbour belonging to this village is capable of admitting veſſels of above 120 tons burthen. Near Sarkfoot, on the farm of Graitney Mains, is one of thoſe ancient monuments, commonly called Druidical temples. It is formed of large, rough, whin or moor-ſtones, which muſt have been brought from a conſiderable diſtance; there being no ſtones of the ſame deſcription within ten miles of this neighbourhood. One of the largeſt of theſe ſtones, denominated by the common people Lochmaben ſtone, meaſures 118 cubical feet, the total weight of which, allowing 12 ſtone to each cubical foot, is upwards of 20 tons. The other ſtones are of ſmaller dimenſions. According to traditionary report, the ſcite of this monument was anciently famous, as a place where alliances were made, and great public queſtions diſcuſſed and determined. In Graitney pariſh may likewiſe be ſeen the remains of ſeveral ſquare towers, which were probably erected for defence againſt the incurſions of the Engliſh. Some years ago a ſmall wooden box, containing ſilver coins, was dug up in a moſs near the Hirſt: a few of them ſeemed to have been ſtruck at Canterbury, but the greater part at London, apparently in the reign of one of the Edwards; though which of them could not be determined, on account of the mutilated ſtate of the figures and inſcriptions. The Statiſtical Account of Scotland, &c. by Sir John Sinclair, Bart., vol. ix. 8vo. 1793.

SARKINOS, a ſmall iſland on the E. ſide of the gulf of Bothnia. N. lat. 63° 19′. E. long. 21° 48′.

SARLAT, a town of France, and principal place of a diſtrict, in the department of the Dordogne, before the revolution the ſee of a biſhop, ſuffragan of Bourdeaux. The place contains 5924, and the canton 12,112 inhabitants, on a territory of 232½ kiliometres, in 16 communes; 30 miles N.W. of Calvados. N. lat. 43° 53′. E. long. 1° 18′.

SARLINGBACH, a town of Auſtria; 7 miles S. of Aigen.

SARMAGANA, in *Ancient Geography*, a town of Aſia, according to Ptolemy.

SARMALIA, a town of Aſia, in Galatia, which belonged to the Taliſtoboges, according to Ptolemy. In the Itinerary of Antonine it is marked on the route from Ancyra to Tavia, between Bolelaſgus and Ecobrogis.

SARMATIA, a large portion of Europe and Aſia, which was divided into European and Aſiatic Sarmatia. *Sarmatia Europæa*, or Sarmatia in Europe, was bounded on the N. by the Sarmatic ocean, and immenſe tracts of land, and extended from the Viſtula, now the Weiſſel, parting it from Germany, to the Euxine ſea, the Boſphorus Cimmerius, the Palus Mæotis, and the Tanais, dividing it from Aſia and the Aſiatic Sarmatia. The mountains of European Sarmatia, according to Ptolemy, were the Peuca, Amadoci, Boudinus, Alaunus, Carpatus, the Vindelician, and the Riphæan mountains. The towns in the interior of the country were Carcina, Torocca, Paſiris, Ercabum, Tracana, and Naubarum, all near the river Carcinis; thoſe near the Boryſthenes were Azagarium, Amadoca, Sarum, Serimum, and Olbia, the metropolis, called alſo Boryſthenes; near the river Axius was Ordeſus; towards the place where the Boryſthenes made a bend were Leinum, Sarbacum, and Nioſſum; near Dacia, on the Tyrus or Danaſter, were Carrodunum, Mætonium, Clepidava, Vibanta Varium, and Fractum; and near the mouth of the Tanais, was the iſland Alopecia, or of Foxes.

Sarmatia of Aſia had towards the N. unknown boundaries, towards the W. European Sarmatia as far as the ſources of the Tanais, and this river itſelf as far as its mouth in the Palus Mæotis, and this Palus to the Boſphorus. The mountains in this part of Sarmatia were the Hippici, Ceraunii, Corax, Alexandri Columnæ, Pylæ Sarmaticæ, and Albaniæ Pylæ. The towns were Exopolis, Naxarius, Tanais, &c. &c.

Cellarius has collected the opinions of the ancients concerning the European and Aſiatic Sarmatia; and M. d'Anville has, with his uſual ſkill and accuracy, applied them to modern geography.

In the immenſe tract of land called Sarmatia, comprehending the preſent Poland, Ruſſia, and a great part of Tartary, dwelt, beſides many others, the names of whom it is unneceſſary to enumerate, the following people: *viz.* the Burgiones, Cariones, Sudeni, Geloni, Hamaxobii, Agathyrſi, Boruſæ, Melanchlæni, Alauni or Alani, Jazyges, Roxolani, Baſtarnæ, Carpi or Carpates, Sidones, Borani, and Venedi, called by Jornandes Winidæ and Vinidi. The five laſt-named nations are thought to have come originally from Germany, eſpecially the Baſtarnæ; for even in the time of Tacitus, who is at a loſs whether he ought to place them among the Germans or the Sarmatians, they agreed with the former in dreſs and language. The Gelonians were, according to Herodotus, of Greek extraction; but had, even in his time, adopted, in a great meaſure, the cuſtoms and manners of the Budini, among whom they had ſettled, eſpecially the cuſtom of painting their bodies, as we are informed by Virgil and Claudian. The Budini dwelt near mount Budinus, from which ſprung the Boryſthenes, now called the Dnieper, or Nieper. The other nations abovementioned were Gothic. (See GOTHS.) Theſe various tribes were blended by the Romans under the common name of *Sauromatæ;* and ſometimes by both, under the denominations of Scythæ or Scythians, and Getæ. Each of them ſeems to have had its own king, for hiſtory mentions the kings of the Roxolani, of the Baſtarnæ, and of the Jazyges. Ammianus Marcellinus deſcribes the Sarmatians in general as a ſavage people, infamous for their lewdneſs. The Melanchlæni are reproached, both by Ammianus and Herodotus, as cannibals, who fed on human fleſh, and are hence called by them, as well as by Mela and Pliny, anthropophagi and androphagi.

The Sarmatians, ſays Mr. Gibbon, ſeem to unite the manners of the Aſiatic barbarians with the figure and complexion of the ancient inhabitants of Europe. According to the various accidents of peace and war, of alliance or conqueſt, the Sarmatians were ſometimes confined to the banks of the Tanais; and they ſometimes ſpread themſelves over the immenſe plains which lie between the Viſtula and the Volga. The care of their numerous flocks and herds, the purſuit of game, and the exerciſe of war, or rather of rapine, directed the vagrant motions of the Sarmatians. The moveable camps or cities, the ordinary reſidence of their wives and children, conſiſted only of large waggons drawn by oxen, and covered in the form of tents. The military ſtrength of the nation was compoſed of cavalry; and the cuſtom of their warriors, to lead in their hand one or two ſpare horſes, enabled them to advance and to retreat with a rapid diligence, which ſurpriſed the ſecurity, and eluded the purſuit, of a diſtant enemy. (Ammian. l. xvii. c. 12.) The Sarmatian horſes were caſtrated, to prevent the miſchievous accidents which might happen from the noiſy and ungovernable paſſions of the males. Their poverty of iron prompted their rude induſtry to invent a ſort of cuiraſs, which was capable of reſiſting a ſword or javelin, though it was formed only of horſes' hoofs, cut into thin and poliſhed ſlices, carefully laid over each other in the manner of ſcales or feathers, and ſtrongly ſewed upon an under-garment of coarſe linen. The offenſive arms of the Sarmatians were ſhort daggers, long lances, and a weighty bow with a quiver of arrows. They were reduced to the neceſſity of employing fiſh-bones for the points of their weapons; but the cuſtom of dipping them in a venomous liquor, that poiſoned the wounds which they inflicted, is alone ſufficient to prove the moſt ſavage manners; ſince a people impreſſed with a ſenſe of humanity would have abhorred ſo cruel a practice, and a nation ſkilled in the arts of war would have diſdained ſo impotent a reſource. Whenever theſe barbarians iſſued from their deſarts in queſt of prey, their ſhaggy beards, uncombed locks, the furs with which they were covered from head to foot, and their fierce countenances, which ſeemed to expreſs the innate cruelty of their minds, inſpired the more civilized provincials of Rome with horror and diſmay.

Ovid, in the nine books of poetical epiſtles which he compoſed during the firſt ſeven years of his melancholy exile among theſe monſters of the deſart, after their ſettlement near the Danube, deſcribes in lively colours the dreſs and manners, the arms and inroads of the Getæ and Sarmatians, who were aſſociated for the purpoſes of deſtruction; and from the accounts of hiſtory, there is ſome reaſon to believe that theſe Sarmatians were the Jazygæ, one of the moſt numerous and warlike tribes of the nation. The allurements of plenty engaged them to ſeek a permanent eſtabliſhment on the frontiers of the empire. Soon after the reign of Auguſtus, they obliged the Dacians, who ſubſiſted by fiſhing on the banks of the river Teyſs or Tibiſcus, to retire into the hilly country, and to abandon to the victorious Sarmatians the fertile plains of the Upper Hungary, which are bounded by the courſe of the Danube and the ſemicircular incloſure of the Carpathian mountains. The Sarmatian Jazygæ were ſettled on the banks of the Pathiſſus, or Tibiſcus, when Pliny, in the year 79, publiſhed his Natural Hiſtory. (See l. iv. c. 25.) In the time of Strabo and Ovid, ſixty or ſeventy years before, they appear to have inhabited beyond the Getæ, along the coaſt of the Euxine. In this advantageous poſition they watched or ſuſpended the moment of attack, as they were provoked by injuries or appeaſed by preſents; they gradually acquired the ſkill of uſing more dangerous weapons; and although the Sarmatians did not illuſtrate their name by any memorable exploits, they occaſionally aſſiſted their eaſtern and weſtern neighbours, the Goths and the Germans, with a formidable body of cavalry. They lived under the irregular ariſtocracy of their chieftains; but after they had received into their boſom the fugitive Vandals, who yielded to the preſſure of the Gothic power, they ſeem to have choſen a king from that nation, and from the illuſtrious race of the Aſtingi, and who had formerly dwelt on the ſhores of the Northern ocean.

The Sarmatians firſt began to threaten the Roman empire in the reign of Nero, about ſeventeen years after Thrace had been reduced to a Roman province by Claudius; Thrace, till its reduction, having ſerved as a barrier on that ſide between the Sarmatians and the Romans. Soon after the latter became poſſeſſed of it, the Sarmatians appeared in great numbers on the confines, with a ſeeming purpoſe of making themſelves maſters of that province; but the Roman general having defeated the king of the Baſtarnians and Roxolanians, the reſt ſoon diſperſed. Six years after this tranſaction, A.D. 69, the Roxolanians, having entered Mœſia and defeated two Roman cohorts, ravaged the country. The Jazygians, another Sarmatic nation, offered to join Veſpaſian in the firſt year of his reign, immediately after his acceſſion to the empire; but ſoon altering their purpoſe, broke into Mœſia, and having killed the governor laid waſte the country: but in ſeveral encounters with a Roman general, expeditiouſly diſpatched againſt them by the Roman emperor, many of them were cut to pieces, and the reſt were obliged to re-croſs the Danube.

The Sarmatians in Europe broke into Illyricum with great fury in the year 119, the ſecond of Adrian's reign; which obliged that prince to quit Rome, and march againſt them in perſon. Upon his arrival in Mœſia, they repaſſed the Danube with great precipitation, and encamped on the oppoſite bank; but the Roman cavalry ſwimming acroſs the river, in order to attack them, the Sarmatians were ſtruck with ſuch terror, that they immediately ſubmitted.

The princes of the Sarmatians quarrelled afterwards among themſelves, and choſe Adrian for their umpire, who compoſed their differences to the general ſatisfaction of the contending parties. On this occaſion, the king of the Roxolanians complaining to the emperor, that his penſion had been reduced, Adrian ordered the ſum, which had been formerly allowed him, to be paid without the leaſt deduction. In the year 135, the Jazygians ſent ambaſſadors to Rome, to renew their alliance with Adrian, who received them in a very obliging manner, introduced them to the ſenate, and, having granted them their requeſt, ſent them back loaded with rich preſents.

All the nations inhabiting Sarmatia conſpired with the Marcomans againſt M. Aurelius; but were in the end ſubdued, and almoſt extirpated. Being afterwards abandoned by the Marcomans and their other allies, they were reduced to great extremity, and ſuing for peace, they obtained it upon conditions that were humiliating, and with which they were under a neceſſity of complying. The priſoners, whom they diſmiſſed on this occaſion, amounted, as it is ſaid, to 100,000, though they had ſold to other nations many of thoſe whom they had taken during the war. The 8000 Jazygian horſe were by the emperor ſent into Britain. To the other Sarmatic nations lands were allotted in Pannonia, Mœſia, Germany, and even in Italy. The Jazygians lived, it ſeems, ſome time in peace and amity with the Romans; for in 180, one of the articles of the peace concluded between the emperor Commodus and the Alemans was, that they ſhould not make war upon the Jazygians, Burians, or Vandals. Beſides, no mention is made by hiſtorians either of them, or the other Sarmatic nations, till the year 215, when the emperor Caracalla is ſaid to have gained ſome advantages over the Sarmatians, and to have aſſumed, on that account, the ſurname of Sarmaticus.

In the year 228 the Carpi, a people of Sarmatia, dwelling next the Carpathian mountains, which ſeparate Hungary and Tranſylvania from Poland, demanded an annual penſion, ſimilar to that which was granted to the Goths; and their demand being rejected, they made ſeveral irruptions into the empire. Aurelian, afterwards emperor, gained a ſignal victory over the Sarmatians and Sueves in the reign of Claudius. In the year 278, Probus marched againſt them in perſon, but they obtained peace upon a promiſe to remain beyond the Danube, and to ſupply the Roman armies with a certain number of troops. As ſoon as they heard of the death of Probus, they invaded Illyricum, but were defeated with great ſlaughter by the emperor Carus, who cut in pieces 16,000 of them, and obliged the reſt to repaſs the Danube. About ſeven years after this event, they returned with a numerous army, and committed great ravages in Thrace and Illyricum; but Diocleſian defeated them with great ſlaughter. In proceſs of time the Sarmatians, dwelling near the Palus Mæotis, broke into the country of the Lazians in Colchis, and having pillaged a great part of Pontus, advanced as far as the Halys, a river of Paphlagonia. Conſtantius, then only tribune, but ſoon afterwards declared Cæſar, was ſent by Diocleſian to reſtrain their ravages; the inferiority of his army, however, allowed his doing no more than preventing them from paſſing that river. The emperor Galerius made war on the Sarmatians, and gained over them a complete victory. About this time the Carpi, having been ſeveral times overcome, and reduced to great diſtreſs by Galerius, ſubmitted to the Romans. Diocleſian tranſplanted the whole nation into the Roman territories, eſpecially into Pannonia, where great numbers had been allowed to ſettle in the reign of Aurelian. Conſtantine the Great, in the 17th year of his reign, gained a great victory over the Sarmatians, and having ſeveral times defeated them, he killed their king, laid waſte their country, and returned with a very large number of captives. The Sarmatian ſports, which were annually celebrated about the latter end of November, probably took their riſe from this victory.

In the year 332 Conſtantine eſpouſed their cauſe againſt the Goths, and gained a complete victory over them; and in this war near 100,000 Goths periſhed either by the ſword, or by famine. Unmindful, however, of their obligations to Conſtantine, the Sarmatians turned their arms againſt their friends and benefactors, but the Romans under Conſtantine ſeverely puniſhed them for their ingratitude, by entering their country, and ravaging it with fire and ſword. Two years afterwards the Sarmatians were again attacked by the Goths. This war laſted ſome years, but at laſt the Sarmatians were totally defeated on the banks of the Mariſus, in Dacia. In this battle they loſt their king, Wiſimar, and with him the flower of their nobility, and ſuch numbers of men, that they were obliged to arm their ſlaves; but theſe, turning their arms againſt their maſters, drove them quite out of their native country, and ſeized on their lands and poſſeſſions. Theſe ſlaves are by Ammianus and St. Jerom ſtyled “Limigantes,” whereas the free-born among the Sarmatians were diſtinguiſhed by the name of “Acaragantes.” The Sarmatians, thus expelled by their ſlaves, had again recourſe to Conſtantine, who received 300,000 of them into the empire, incorporated ſome among his troops, and allowed to the others lands in the provinces bordering on the Danube, and even in Italy itſelf. Thoſe who took refuge among the Quadians, made an irruption, A.D. 355, into Pannonia, in conjunction with the Quadi; and having pillaged both that province and Upper Mœſia, returned unmoleſted with an immenſe booty. Two years after this expedition, they laid waſte the ſame provinces, while the

Suevi committed dreadful ravages in Rhætia, and the Quadi in Valeria, a province of Illyricum. Conſtantius haſtened from Rome to oppoſe the Barbarians, who threatened Italy itſelf; but hearing of his arrival at Milan, they retired with precipitation. The emperor, however, advanced as far as Sirmium, and had ſeveral conferences with the chiefs of the nations dwelling in the vicinity of the Danube, who all promiſed to live in peace and amity with the empire. In the following winter they forgot their promiſes, and finding the Danube frozen, they ſeized the opportunity of entering Mœſia and Pannonia, and pillaging thoſe provinces. Conſtantius marched in perſon againſt the Sarmatians, who had been joined by the Quadians; and having paſſed the Danube on a bridge of boats, he entered their country, and laid it waſte to a great extent. At length they concluded a peace with Conſtantius. The Limigantes, whom we have already mentioned, after ſuffering a dreadful maſſacre, were obliged to ſubmit to the Romans, and to accept the ſevere terms that were offered them. Theſe were, that they ſhould quit the country, on which they had ſeized and which they had unjuſtly held, and retire to another at a greater diſtance from the empire. The country which they abandoned was reſtored by Conſtantius to the ancient proprietors, who ſettled there again, 24 years after (A.D. 358) they had been driven out by their rebellious ſlaves. For theſe great achievements the victorious emperor Conſtantius took the ſurname of Sarmaticus. The Sarmatians, notwithſtanding their great obligations to the Romans, a few years after broke into Pannonia, and laid waſte that province, while the Roman troops were employed againſt the Alemans in Rhætia. In the year 374 they joined the Quadians, and in conjunction with them committed dreadful ravages in Pannonia, and from thence advanced into Upper Mœſia; but they were there defeated with great ſlaughter by Theodoſius, afterwards emperor. In the year 376, Athanaric, one of the chiefs of the Goths, being forced by the Hunns to abandon his own country, retired with his people to a place called Caucalanda, diſpoſſeſſing the Sarmatians, to whom it belonged. In 378 the Sarmatians, informed that the Goths, who had been admitted by Valens into the empire, had taken up arms againſt the Romans, reſolved to paſs the Danube, and join them; but Theodoſius, afterwards emperor, meeting them in Thrace, defeated them with great ſlaughter. The victory is ſaid to have been ſo complete, that Gratian, then emperor, could not believe the account which Theodoſius himſelf gave upon his return to court, till he was informed of the truth by perſons ſent on purpoſe to view the field of battle. In the year 407 they entered Gaul, with the Vandals, Sueves, Franks, Burgundians, and other Barbarians, and committed dreadful devaſtation. Thoſe who remained in Sarmatia were afterwards ſubdued by Attila, and ſerved, with their princes, in his army, when he invaded Gaul in 451. Upon that prince's death, they ſhook off the yoke; and, having recovered their ancient liberty, ſubmitted to Marcian, then emperor, who allowed them to ſettle in Pannonia, Mœſia, and the other provinces bordering on the Danube, where they continued quiet, till they were reduced by the Goths. Thoſe who reſided among the Goths became, in proceſs of time, one nation with them. From thoſe who remained in Sarmatia, the preſent Poles and Tartars are thought to have ſprung. Univ. Hiſt. vol. xvii. Gibbon's Hiſt. Rom. Emp. vol. iii.

The Sarmatians, after the example of moſt other idolatrous nations, had gods both natural and animated. Thoſe of the firſt ſort were the Sun and Moon, Pogwid or the Air, Taſſa or Jupiter, Lacto or Pluto, Nia or Ceres, Marzane or Venus, and Zicuonia or Diana. Among their animated deities were Lelus and Politus, which, according to the Poliſh hiſtorians, were the ſame with Caſtor and Pollux, whoſe names were retained by the Sarmatians, after their worſhip was aboliſhed, and they had embraced Chriſtianity, and which they pronounced with expreſſions of joy at their feaſts. The Sarmatians, according to Voſſius, were led into an acquaintance with theſe divinities by holding commerce with the people ſettled on the banks of the Danube.

SARMATIANS. See the preceding article.

SARMATICA Insula, the name of an iſland ſituated near the mouth of the Danube, named *Caloſtoma*, according to Pliny.

SARMATICA *Lues*, in *Medicine*, a name given by ſome authors to the *plica Polonica*.

SARMATICI Montes, in *Ancient Geography*, mountains of European Sarmatia, on the confines of Germany. Ptolemy.

SARMEE, in *Geography*, a town of Bengal; 7 miles E.N.E. of Noony.

SARMENA, a town of Turkiſh Armenia; 18 miles E. of Trebiſond.

SARMENIUS Lapis, in *Natural Hiſtory*, a name given by the writers of the middle ages to a ſtone ſaid to be uſed in the poliſhing of gold, and to have virtues in medicine alſo; ſuch as preventing abortion, and the like.

It ſeems to have been only a corrupt way of ſpelling *ſamius lapis*, a ſtone to which Pliny has attributed the ſame virtue.

SARMENTACEÆ, in *Botany*, the eleventh natural order among the *fragmenta* of Linnæus, nearly anſwering to Juſſieu's *Aſparagi*. The name alludes to the long twining or trailing ſtems prevalent in this order, and the genera are *Glorioſa*, *Erythronium*, *Alſtrömeria*, *Uvularia*, *Convallaria*, *Ruſcus*, *Aſparagus*, *Medeola*, *Tullium*, *Paris*, *Smilax*, *Dioſcorea*, *Tamus*, *Raiania*, *Meniſpermum*, *Centella* (erroneouſly placed here, being a *Hydrocotyle*), *Ciſſampelos*, *Ariſtolochia*, *Aſarum* and *Cytinus*.

SARMENTOSUS Caulis, in *Botany* and *Vegetable Phyſiology*, trailing or twining ſtem. See Caulis.

SARMISK, in *Geography*, a town of Bohemia, in the circle of Chrudim; 12 miles E.N.E. of Chrudim.

SARMUND. See Saarmund.

SARN *y Buch*, a cape on the weſt coaſt of North Wales, and county of Merioneth; 17 miles N. of Aberyſtwith.

SARNA, a town of Sweden, in Dalecarlia; 100 miles N.W. of Fahlun.

SARNABITIBA, a river of Brazil, which runs into the Atlantic, S. lat. 17° 30′.

SARNACHE, a town of Portugal, in Eſtremadura; 18 miles N.E. of Thomar.

SARNADA, in *Ancient Geography*, a town of Pannonia; upon the route from Sirmium to Salonæ, between Zeuſaba and Silviæ, according to the Itin. of Antonine.

SARNE, in *Geography*, a river of France, which runs into the Birs, near Tallſperg.

SARNELLI, Pompey, in *Biography*, a learned Italian prelate in the 17th and 18th centuries, was born at Polignano in the year 1649. Being deſtined for the clerical profeſſion, he was ſent from the ſchools of his native country to purſue his ſtudies at Naples. He commenced his career as an author about the year 1668, and publiſhed ſome pieces connected with the belles-lettres department, which met with a very favourable reception. In the year 1675, after he had been admitted to prieſts' orders, pope Clement X. gave him the appointment of honorary prothonotary. Four years after this, he became an inmate with cardinal Maria-Vincent Orſini, biſhop of Manfredonia, and upon the tranſlation of that prelate to the church of Ceſena, in the Romagna, in 1679, he appointed Sarnelli his grand vicar. He continued with the cardinal after he had been promoted to the archbiſhopric of Benevento, and accompanied him to the conclaves which were held after the deaths of pope Innocent XI. and Alexander VIII. He obtained conſiderable preferment in the church, and died in the year 1724. He was author of "Lettere eccleſiaſtiche," in 9 vols. 4to.; "Il Clero ſecolare nel ſuo Splendore, overo della vita commune clericale;" "Beſtiarum Schola ad Homines erudiendos ab ipſa rerum natura providè inſtituta, &c. decem et centum Lectionibus explicata;" and many pieces of a biographical, chronological, and topographical nature.

SARNEN, in *Geography*, a town of Switzerland, in the canton of Underwalden, near a lake to which it gives name; 9 miles S. of Lucern.

SARNGANG, a town of Auſtria; two miles S.S.E. of Entzerſtorff.

SARNIA, Sarmia, *Sarma*, or *Armia Inſula*, in *Ancient Geography*, an iſland ſituated in the ſea, which ſeparates the Gauls from Great Britain.

SARNIUS, a river of Aſia, which ſeparates a deſart of Hyrcania from the eaſtern coaſt. Strabo.

SARNO, in *Geography*, a town of Naples, in Principato Citra, the ſee of a biſhop, ſuffragan of Salerno. In the environs are collected annually about 4000lbs. weight of ſilk, ſuppoſed to be the fineſt and beſt wound in the kingdom; 10 miles N.W. of Salerno. N. lat. 40° 48′. E. long. 14° 35′.

Sarno, or *Safata*, a river of Naples, which runs into the ſea, 10 miles S.S.E. of Naples.

SARNUCA, in *Ancient Geography*, a town of Aſia, in Meſopotamia, ſituated on the banks of the Euphrates, S. of Apammaſis, towards 35° 50′ of lat.

SARNUS, a river of Italy, in Campania, which watered the town of Pompeii, according to Strabo.—Alſo, a town of Illyria.

SARNY, in *Geography*, a town of Hindooſtan, in Dowlatabad; 10 miles E.S.E. of Darore.

SAROKA, a town of Moldavia, near the Dnieſter; 84 miles N.N.W. of Bender.

SARON, in *Ancient Geography*, a canton of Paleſtine, between mount Tabor and the ſea of Tiberias.—Alſo, a canton of Paleſtine, between the town of Cæſarea of Paleſtine, and Joppa.—Alſo, a canton of Paleſtine, on the other ſide of Jordan, in the country of Baſan, and in a diviſion of the tribe of Gad.—Alſo, a mountain of Judea, ſituated in the weſtern part of the tribe of Aſher.—Alſo, a town and river of the Peloponneſus, in the Troézené, according to Euſtathius, who ſays that the river gave name to the Saronic gulf.

Saron, in *Greek Mythology*, was regarded as the particular god of the ſailors, and the Greeks for that reaſon gave him a name from an arm of the ſea near Corinth, or from the Saronic gulf.

SARONA, in *Ancient Geography*, a town of Judea, in the tribe of Ephraim.

SARONIA, Σαρωνια, among the Greeks, a feſtival kept in honour of Diana, ſurnamed Saronia, from Saro, the third king of Trœzene, by whom a temple was erected, and this feſtival inſtituted to her.

SARONICUS Sinus, or *Saronic Gulf*, in *Ancient Geography*, a gulf of Engia. It was ſituated between the two promontories of Sunium in Attica, and Scylleum in the Argolide. There are not leſs than twenty iſlands in it; but only three of them are inhabited, *viz.* Calauvna, Ægina, and Salamis.

SARONIDES, in *Ancient Hiſtory*, miniſters of religion among the Gauls, whoſe province it was to inſtruct the youth, and to inſtil into their minds virtuous ſentiments.

SARONILLA, in *Geography*. See Serranillé.

SAROS, Σαρος, in *Chronology*, a period of two hundred and twenty-three lunar months. Suidas in voc. Σαρος. Mem. Acad. Inſcrip. tom. viii. p. 283.

The etymology of the word is ſaid to be Chaldean, ſignifying reſtitution, or return of eclipſes; that is, conjunctions of the ſun and moon in nearly the ſame place of the ecliptic.

The ſaros was a cycle like to that of Meto. See Cycle *of the Moon.*

Saros, in *Geography*, a town of Hungary, in the vicinity of which is a poiſonous ſpring; 6 miles N.W. of Eperies.

SAROSEL, in the *Glaſs Trade*, the name of the room into which the mouth of the leer opens, and in which the glaſs veſſels are placed, when taken out of the leer.

The men who attend to do this are called the *ſarole* men.

SAROTHRA, in *Botany*, from σαρωθρον, *a broom*, alluding to the habit of the plant.—Linn. Gen. 151. Schreb. 203. Willd. Sp. Pl. v. 1. 1515. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 2. 176. Juſſ. 303. Lamarck Illuſtr. t. 215. Gærtn. v. 2. 161. t. 114.—Claſs and order, *Pentandria Trigynia*. Nat. Ord. *Rotaceæ*, Linn. *Caryophylleæ*, Juſſ. rather his *Hyperica*.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, in five deep, linear, acute ſegments, erect, permanent. *Cor.* Petals generally five, linear, inclining to lanceolate, obtuſe, ſpreading, ſomewhat longer than the calyx, deciduous. *Stam.* Filaments five, thread-ſhaped, the length of the corolla; anthers roundiſh. *Piſt.* Germen ſuperior, ovate; ſtyles three, thread-ſhaped, the length of the germen; ſtigmas ſimple. *Peric.* Capſule oblong, acute, membranous, coloured, of one cell and three valves. *Seeds* numerous, minute, ſomewhat cylindrical, very finely ſtriated, ſtalked, pendulous from the inner margins of each valve.

Eſſ. Ch. Calyx in five deep ſegments. Petals five. Capſule ſuperior, coloured, of one cell and three valves. Seeds numerous, inſerted into the margins of the valves.

1. S. *gentianoides*. Baſtard Gentian. Linn. Sp. Pl. 391. Willd. n. 1. Ait. n. 1. (Hypericum Sarothra; Michaux Boreali-Amer. v. 2. 79. Purſh v. 2. 378. H. nudicaule; Walt. Carol. 190. Centaurium minus ſpicatum, anguſtiſſimo folio, ſive Scoparium marilandicum novum; Pluk. Mant. 43. t. 342. f. 2.)—Found in dry ſunny ſituations, from New England to Carolina, flowering from June to Auguſt. *Root* annual. *Stem* erect, about a ſpan high, very much branched in an oppoſite manner, with minute, cloſe-preſſed, oppoſite *leaves* at each joint. The whole *herb* is ſmooth. *Flowers* terminal, ſolitary, erect, very ſmall. Mr. Purſh obſerves that the number of *ſtamens* is very variable, according to ſoil and ſituation. He follows Michaux, perhaps rightly, in conſidering this ſingular little plant as a real *Hypericum*, notwithſtanding its few and ſimple *ſtamens*.

SARP, or Sarpen, in *Geography*, a town of Norway, in the province of Chriſtianſand; near which is a caſcade or water-fall, which king Harold Gille, in 1134, firſt uſed for the execution of criminals, by throwing a vaſſal of king Magnus down this dreadful cataract. Cloſe by the caſcade is an eminence, called "Konigſhugel," becauſe three kings, who were father, ſon, and grandſon, once ſtood upon it to view this wonderful cataract; it drives thirteen mills, and its noiſe is heard at the diſtance of twenty miles from the place; 10 miles W.S.W. of Frederickſtadt.

SARPA, a river of Ruſſia, which runs into the Volga, near Tzaritzin.

SARPA, in *Ichthyology*, the name by which the ſalpa, a very beautiful fiſh of the Mediterranean, is known in the Italian markets.

SARPEDON PROMONTORIUM, in *Ancient Geography*, a promontory of Cilicia, near the river Calycadnus, according to Strabo.—Alſo, a promontory of Thrace, near the river Erginus.—Alſo, the name of an iſland ſituated towards the Atlantic ocean, and which was inhabited by the Gorgones, according to Suidas.

SARPI, in *Biography*. See *Father* PAUL.

SARPICULA, among the Romans, a term uſed by the old Roman writers to ſignify a pruning-hook.

SARPLAR *of Wool*, a quantity of wool, otherwiſe called a pocket, or half ſack; a ſack containing eighty tod, a tod two ſtone, and a ſtone fourteen pounds.

In Scotland it is termed *ſarpliath*, and contains eighty ſtone.

SARPOLE, in *Ichthyology*, a name given to the fiſh called by authors ſalpa.

SARRA, in *Geography*, a town of Switzerland, in the canton of Berne; 9 miles S.S.W. of Yverdun.—Alſo, a town of Hindooſtan, in Bahar; 33 miles N. of Hajypour. N. lat. 26° 13′. E. long. 85° 23′.

SARRACENIA, in *Botany*, named by Tournefort, in honour of his friend Dr. Sarrazin, who collected numerous plants in Canada, ſpecimens of which we have ſeen in the dried collections of the muſeum at Paris. While they lay there for ages unnoticed, the diſcovery of the ſame plants has been attributed to more recent travellers, who indeed could know nothing of Dr. Sarrazin's acquiſitions.—Tourn. Inſt. 657. t. 476. Linn. Gen. 264. Schreb. 351. Willd. Sp. Pl. v. 2. 1150. Mart. Mill. Dict. v. 4. Purſh v. 2. 367. Ait. Hort. Kew. v. 3. 291. Juſſ. 435. Lamarck Illuſtr. t. 452.—Claſs and order, *Polyandria Monogynia*. Nat. Ord. *Rhoeadeæ*, Linn.? *Uncertain*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, double, deciduous; the outermoſt of three ſmall ovate leaves; inner of five very large, nearly ovate, coloured ones. *Cor.* Petals five, ovate, inflexed, concealing the ſtamens, their claws ovate-oblong, ſtraight. *Stam.* Filaments numerous, ſmall; anthers ſimple, oblong. *Piſt.* Germen ſuperior, roundiſh; ſtyle cylindrical, very ſhort; ſtigma peltate, dilated, convex, five-angled, covering the ſtamens, permanent. *Peric.* Capſule roundiſh, of five cells and five valves, with central partitions. *Seeds* numerous, ſmall, roundiſh, pointed, inſerted into a central pentagonal *receptacle.*

Eſſ. Ch. Petals five. Calyx double; the outer of three leaves; inner of five. Capſule ſuperior, of five cells. Style with a ſhield-like ſtigma.

No genus can be more natural or diſtinct, either in habit or fructification, than this. Linnæus conceived that, being allied in conſtitution to *Nymphæa*, it might probably require an extraordinary ſupply of water; and that the leaves were made hollow to receive, and retain, this ſupply from the atmoſphere. Perhaps theſe reſervoirs may be explained in the ſame manner as thoſe of NEPENTHES; ſee that article.

1. S. *purpurea.* Purple Side-ſaddle-flower. Linn. Sp. Pl. 728. Willd. n. 4. Ait. n. 4. Purſh n. 1. Curt. Mag. t. 849. Mill. Ic. t. 241. (Bucanephyllon americanum, limonio congener dictum; Pluk. Amalth. 46. t. 376. f. 6. Limonio congener; Ger. Em. 412.)—Tube of the leaves obovate, tumid, contracted at the top; border ſpreading, obtuſe, ſomewhat heart-ſhaped. Native of North America; in cedar ſwamps, and marſhes among bog-moſs, from Canada to Carolina, flowering in June and July. *Purſh.* It appears to have been cultivated in our gardens before the year 1640, but, like other bog-plants, is but of uncertain duration in ſuch ſituations. The *root* is fibrous and perennial. *Stem* none. *Leaves* ſeveral, radical, ſtalked, aſcending, about four inches or more in length, of a moſt ſingular tubular ſwelling form, coriaceous, veiny, externally ſmooth, furniſhed on the upper ſide with an irregular longitudinal dilated appendage, and terminating in a wavy, ſomewhat heart-ſhaped, ſpreading border, catching the rain like a funnel, and clothed on its upper ſide with numerous reverſed hairs. *Flower-ſtalks* one or more, radical, ſimple, cylindrical, naked, ſmooth, taller than the leaves, each bearing one large, drooping, inodorous *flower*, whoſe *calyx* is of a dull browniſh-purple; the *petals* browniſh-red; the *ſtigma* green.

2. S. *flava.* Yellow Side-ſaddle-flower. Linn. Sp. Pl. 729. Willd. n. 1. Ait. n. 1. Purſh n. 3. Curt. Mag. t. 780. Andr. Repoſ. t. 381. (Bucanephyllon elatius virginianum; Pluk. Amalth. 46. t. 376. f. 5.)—Tube of the leaves the length of the flower-ſtalk, ſtraight, gradually dilated upwards; border erect, heart-ſhaped, ſharp-pointed, contracted at the baſe.—In open ſwamps, from Virginia to Florida, flowering in June and July. *Purſh.* Miller appears to have cultivated this ſpecies, and it is ſtill, from time to time, introduced, but as frequently loſt. The *leaves* are often two feet high, erect, ſtraight, and much leſs inflated than the preceding, with hardly any longitudinal appendage, or dilatation. *Flowers* large, yellow with green veins, drooping, their ſtalks about as tall as the foliage.

3. S. *adunca.* Hook-leaved Side-ſaddle-flower. Sm. Exot. Bot. v. 1. 103. t. 53. Ait. n. 2. (S. minor; Walt. Carol. 153. Willd. n. 2. S. variolaris; Michaux Boreali-Amer. v. 1. 310. Purſh n. 2.)—Tube of the leaves ſpotted, ſwelling upwards, the length of the flower-ſtalk; border roundiſh, inflexed.—In open ſwamps, on a ſandy ſoil, from North Carolina to Florida, flowering in June and July. *Purſh.* With us it ſucceeds beſt in a ſtove, with abundance of water, as cultivated for many ſucceſſive years at Meſſrs. Lee and Kennedy's, Hammerſmith. The ſpecies before us much reſembles *flava* in its *flowers*, and the height of its *leaves;* but the tube of the latter is more inflated, their border ſingularly inflexed, as if to exclude rain, and the outſide of the tube is marked with ſemipellucid ſpots, which, according to Mr. Purſh, conſtitute an eſſential character. The *flowers* are uſually rather ſmaller and paler than in the laſt.

4. S. *rubra.* Red Side-ſaddle-flower. Walt. Carol. 152. Willd. n. 3. Ait. n. 3. (S. pſittacina; Michaux Boreali-Amer. v. 1. 311. Purſh n. 4. Bucanephyllon elatius virginianum; Pluk. Phyt. t. 152. f. 3?)—Tube of the leaves ſhorter than the flower-ſtalk, ſwelling gradually upwards; border rounded, pointed, vaulted, recurved.—Native of the ſwamps of Georgia and Florida, flowering in June and July. *Flowers* on very long ſtalks, purple. *Leaves* ſmall, very handſomely marked with purple veins; their longitudinal appendage dilated upwards into a ſomewhat wedge-ſhaped termination. *Purſh.* The late Mr. Fraſer is ſaid to have brought this ſpecies to England in 1786;

but we have not heard of its flowering, nor do we believe that it ſurvives at preſent in any collection.

Sarracenia, in *Gardening*, contains plants of the herbaceous perennial kinds, of which the ſpecies cultivated are, the yellow ſide-ſaddle flower (S. flava); and the purple ſide-ſaddle flower (S. purpurea). Theſe plants are uſually brought from North America.

Method of Culture.—As theſe plants grow naturally in ſoft boggy ſituations, they are raiſed with difficulty here in gardens. The beſt mode is to procure them from the places of their natural growth, and to have them taken up with large balls of earth to their roots, and planted in tubs of earth; they ſhould be conſtantly watered during their paſſage, otherwiſe they decay before they arrive: as there is little probability of raiſing theſe plants from ſeeds, ſo as to produce flowers in many years, if the ſeeds ſhould even grow, young plants ſhould be taken up for this purpoſe, as they are more likely to ſtand than thoſe which have flowered two or three times. When the plants are brought over, they ſhould be planted into pretty large pots, which ſhould be filled with ſoft ſpongy earth, mixed with rotten wood, moſs, and turf, which is very like the natural ſoil in which they grow. Theſe pots ſhould be put into tubs, or large pans which will hold water, with which they muſt be conſtantly ſupplied, and placed in a ſhady ſituation in ſummer; but in winter be covered with moſs, or ſheltered under a frame, otherwiſe they will not live in this climate; having free air admitted in mild open weather.

Plants of this kind procured from North America are commonly kept in moſt of the principal nurſery grounds about London.

SARRANA, in *Ancient Geography*, a town in the ſouthern part of Aſia, and near the mountains N. of Meſopotamia, ſeparated by the mountains from Edeſſa. Ptolemy.

Sarrana, a ſpecies of flute, of which the tones were acute and ſhrill, reſembling thoſe of a flute. Some imagine that Sarrana implied Tyrian.

SARRAN-COLIN, in *Geography*, a town of France, in the department of the Upper Pyrenées; 6 miles S. of La Barth de Neſtes.

SARRANDAGA, a town of Hindooſtan, in Guzerat; 30 miles W. of Patlun.

SARRANGPOUR, a town of Hindooſtan, in Bahar; 33 miles N.W. of Hajypour.

SARRASIN, or Sarrazin, in *Fortification*, a kind of portcullis, otherwiſe called a herſe, which is hung with ropes over the gates of a town or fortreſs, and let fall in caſe of a ſurprize.

SARRE, in *Geography*, a town of France, in the department of the Lower Pyrenées; 9 miles E. of St. Jean de Luz.

Sarre, or *Saar*, a river of France, which runs into the Moſelle near Treves.—Alſo, a river of England, in the county of Kent, which runs from Reculver to the Stour, forming the W. boundary of the iſland of Thanet.

Sarre, or *Saar*, one of the thirteen departments of the region of France, called the Reunited country, compoſed of a portion of the electorate of Treves and of Hundſruck, in N. lat. 49° 40′, bounded on the N. by the department of the Rhine and the Moſelle; containing 6440 kiliometres, or 244 ſquare leagues, and 219,049 inhabitants. It is divided into 4 circles or diſtricts, 34 cantons, and 1082 communes. The four circles are Treves, containing 66,196 inhabitants, Sarrebruck, 57,178, Prum, 31,578, and Birkenſeld, 63,802 inhabitants. According to Haſſenfratz, its extent is 39 French leagues in length and 14 in breadth; its circles are 3, cantons 31, and population 440,000. Its chief city is Treves. Its contributions in the 11th year of the French era amounted to 1,718,283 fr.; and its expences, adminiſtrative, judiciary, and for public inſtruction, were 249,333 fr. 33 cents. This department, though hilly and wooded, produces a ſufficient quantity of grain for the ſupply of its inhabitants, but the improvement of the ſoil is much neglected. Here are mines of copper, lead, iron, coal, and calamine, with mineral ſprings.

SARREAL, a town of Spain, in Catalonia, on the river Francoli; 11 miles S. of Cervera.

SARREBOURG, Saarburg, or *Sarburg*, a town of France, and principal place of a diſtrict, in the department of the Meurthe; 33 miles E. of Nancy. The place contains 1454, and the canton 11,212 inhabitants, on a territory of 187½ kiliometres, in 23 communes. N. lat. 48° 44′. E. long. 7° 8′.

Sarrebourg, or *Sarburg*, a town of France, in the department of the Sarre, and chief place of a canton, in the diſtrict of Treves; 8 miles S. of Treves. The place contains 1276, and the canton 8216 inhabitants, in 43 communes. N. lat. 49° 48′. E. long. 6° 9′.

SARREBRUCK, a town of France, and principal place of a diſtrict, in the department of the Sarre. The place contains 2714, and the canton 4925 inhabitants, on a territory comprehending four communes.

SARREGUEMINES, a town of France, and principal place of a diſtrict, in the department of the Moſelle, near the river Sarre. The place contains 2530, and the canton 10,932 inhabitants, on a territory of 135 kiliometres, in 22 communes. N. lat. 49° 8′. E. long. 24° 47′.

SARRE-LIBRE, a town of France, in the department of the Moſelle, and chief place of a canton, in the diſtrict of Thionville. The place contains 4031, and the canton 15,772 inhabitants, on a territory of 130 kiliometres, in 27 communes.

SARRI, a town of the iſland of Corſica; 11 miles N. of Ajazzo.

SARRIA, a town of Spain, in Galicia; 12 miles S.S.E. of Lugo.

SARRIANS, a town of France, in the department of the Vaucluſe; 12 miles N.N.E. of Avignon.

SARRITION, Sarritio, in Roman authors, the term uſed to expreſs what we call hoeing in huſbandry, or ſomething analogous to it; that is, a way of ſtirring up the earth about young plants, and deſtroying the weeds that would grow among them. When the plants had been ſome time come up, they ſtirred the land with wooden rakes or harrows, and then went over the fields, and pulled up the weeds by hand.

They uſed two kinds of ſarrition; the one was intended only to move the ground, and was done lengthways of the furrows; the other was to cover up the young plants, that they might grow the more ſtrong and vigorous; and was performed by ſtirring up the earth croſs-ways of the furrows.

It is an error in the tranſlators of the ancients, to render the word *ſarritio* by *hoeing*, without giving any farther explication of it; for the ancients truly hoed their vineyards in an exact ſenſe of the word, but not their corn; neither did they plant their corn in rows, without which they could not give it their vineyard hoeing. This ſarculation was uſed only among ſmall quantities of ſown corn, and is yet in uſe for flax; for the ſarculum, which is a ſort of very narrow hoe, is ſtill uſed among the plants of flax growing irregularly, but this is too tedious and expenſive ever to have place in whole fields of corn.

If the ancients hoed their crops of corn ſtanding irregularly, as ſown at random, they muſt have made very bad work of it, ſince they were at no pains to ſow in rows, and hoe between them with their bidens, which was an inſtrument with which they tilled many of their vineyards, and which entered the ground as deep as the plough, and was a much better inſtrument than the Engliſh hoe, which is very ill calculated for the office its principal buſineſs lies in, which is ſtirring the ground. Tull's Horſehoeing Huſbandry.

SARRO, DOMENICO, in *Biography*, vice-maſter of the chapel royal at Naples, who flouriſhed from the year 1725 to 1734. This maſter was much eſteemed, both for his eccleſiaſtical and ſecular productions. Among the many operas he compoſed for the different theatres of Italy, the two moſt in favour were, "Tito Sempronio Gracco," for Naples, 1725; and Metaſtaſio's "Didone Abbandonata," for Turin, 1727. He was one of the early reformers, who, like Vinci, ſimplified harmony, and poliſhed melody, in his productions for the ſtage. He left many excellent compoſitions for the church behind him, ſome of which are ſtill uſed in the conſervatorios.

SARROLA, in *Geography*, a town of Africa, in Fooladoo. N. lat. 13° 55′. W. long. 8° 55′.

SARROWLY, a town of Hindooſtan, in Baglana; 20 miles S. of Damaun.

SARS, a river of Mexico, which runs into the bay of Honduras, N. lat. 15° 45′. W. long. 87° 5′.

SARSA, a town of Spain, in Arragon; 14 miles S. of Jaca.

SARSANA, or ZARZANA, a town and fortreſs of Genoa, on the river Magra, near which is a fort in the mountains, called "Sarzanello:" it is a biſhop's ſee, held immediately of the pope. For this town, Coſmo I., duke of Tuſcany, received Leghorn in exchange; 45 miles E.S.E. of Genoa. N. lat. 44° 8′. E. long. 9° 54′.

SARSAPARILLA, in *Botany*, ſomewhat altered from the Peruvian name *zarza-parilla*. See SMILAX.

SARSAPARILLA, SALSAPARILLA, or *Sarſa*, in the *Materia Medica*, a medicinal plant, being the root of a ſpecies of *rough bindweed*, or *ſmilax*, (which ſee,) growing in New Spain, Peru, &c. chiefly uſed in decoctions and potions for the venereal diſeaſe; being eſteemed a great abſorbent and ſweetener; and, with that view, ſometimes taken as a tea.

Bauhin derives the name from *zarſa*, the Spaniſh term for red, and *parilla*, a little vine; or, according to others, the name is formed of *zarza*, a brier or buſh, and *parilla*, and denotes a "buſhy little vine."

Its root, which is the part in uſe, divides itſelf into a great number of filaments, three or four feet long; of the thickneſs of a quill; it is browniſh withoutſide and white within, only marked with two red ſtreaks. Its branches creep on the earth, along the trunks of trees, &c. as the ivy does. The dried root is imported from the Spaniſh Weſt Indies, packed in bales.

To be good, it muſt be very dry, its filaments long, eaſy to cleave; and, in cleaving, they muſt not yield any duſt: when boiled in water, it muſt give it a reddiſh tincture. Some phyſicians much doubt the medicinal virtue of this root; as it does not diſcover much, either in taſte, ſmell, or tincture.

This root is inodorous, and has a mucilaginous, very ſlightly bitter taſte. It communicates to boiling water, and partially to alcohol and ether, any active matter it poſſeſſes. The watery infuſion has a brown colour, reddens litmus paper, and yields a precipitate with infuſion of galls, which is again diſſolved when the infuſion is heated. It is precipitated alſo by lime-water, and ſolution of nitrate of mercury, and ſuperacetate of lead, but is not affected by ſulphate of iron, or any other of the metallic oxyds. The alcoholic tincture has a yellowiſh-red hue, is rendered turbid by the addition of water, and yields an extract ſlightly bitter, and pungent. Ether takes up two parts in ten of the powdered root; and the tincture, which has a golden yellow colour, when evaporated on water, leaves a ſmall portion of reddiſh-yellow inſipid reſin, and a larger of yellowiſh extractive diſſolved in the water.

Sarſaparilla, which is demulcent, and ſaid to be diuretic, was firſt brought into Europe by the Spaniards, about the year 1530, with the character of a ſpecific for the cure of the lues venerea, which made its appearance a little before that time. The method of preparing it by the Spaniards and Indians of South America is as follows: they macerate an ounce of the root in almoſt four pints of water for twenty-four hours, and boil it away to one-half. They give of the expreſſed decoction half a pint twice a day, four hours before their meals, in bed, covered with clothes, where they ſweat two hours, mixing a ſufficient quantity of the fine powder of the root with each doſe of the decoction. They purge them every tenth day. The reputation of this medicine declined, after its introduction into Europe; though it appears from experience, that, in many caſes, ſtrong decoctions of it, drank plentifully, and duly continued, are of very conſiderable ſervice for promoting perſpiration, and ſweetening or purifying the blood and humours. Dr. William Hunter and ſir W. Fordyce revived its reputation. In the London Medical Obſervations, vol. i. art. 16. there are ſeveral inſtances of its efficacy in venereal maladies, as an aſſiſtant to mercury, or when mercury had preceded its uſe. It frequently and ſpeedily anſwered after mercurial unctions, and long continued courſes of ſtrong decoctions of guaiacum, had failed. Three ounces of the root are boiled in three quarts of river water, till the liquor, when ſtrained, amounts to about one quart, which is taken at three or four doſes, either warm or cold, every twenty-four hours. Dr. Harris ſays, that infants who have received the infection from the nurſe, though full of puſtules and ulcers, and ſometimes troubled with nocturnal pains, are cured by ſarſaparilla without mercurials. He directs the powder of the root to be mixed with their food. See LUES VENEREA.

Sarſaparilla is alſo recommended in ſcrofula, elephantiaſis, or cutaneous affections reſembling it, and chronic rheumatiſm; but its efficacy is doubtful. The doſe of the powdered root is from ℈j to ʒj, given three or four times a day. Its officinal preparations are "decoctum ſarſaparillæ," L.E.D.; "decoctum ſarſaparillæ compoſitum," D.; and "extractum ſarſaparillæ," E. The decoction of ſarſaparilla is prepared, according to the Lond. Ph., by macerating four ounces of the root ſliced in four pints of boiling water for four hours, in a veſſel lightly covered and placed near the fire: then taking out the ſarſaparilla, and bruiſing it. Return it again to the liquor and macerate in a ſimilar manner for two hours more; then boil it down to two pints and ſtrain. The Ed. Ph. directs ſix ounces of ſarſaparilla ſliced to be digeſted in eight pounds of water for two hours, in a temperature of about 195°, then to take out the root and bruiſe it, and to put it again in this ſtate into the liquor, and boil it with a gentle fire down to four pounds; then expreſs it and ſtrain. The Dub. Ph. orders one ounce and a half of the root ſliced to be digeſted in two pints of boiling water for two hours in a moderate heat; then take out the ſarſaparilla, and bruiſe it; return it to the liquor and again digeſt it for two hours; then boil down to one-half, expreſs, and ſtrain the liquor through a linen cloth. This decoction, ſays Thomſon, may be regarded as little more than a ſolution of mucus, and a ſimple demulcent, which may be uſeful during the exhibition of mercury; and is found to be ſo in dyſuria, and incontinence of urine ariſing from a morbid irritability of the bladder. It affords precipitates with lime-water, ſolution of muriate of barytes, and of ſuperacetate of lead, which are therefore incompatible with it in formulæ.

The compound decoction of the Lond. Ph. is obtained by boiling four pints of decoction of ſarſaparilla, ſaſſafras root ſliced, guaiacum root raſped, and liquorice root bruiſed, of each an ounce, and three drachms of the bark of mezereon root, for a quarter of an hour, and ſtraining. The Dub. Ph. directs to take of ſarſaparilla root ſliced and bruiſed, one ounce and a half, raſpings of guaiacum wood, bark of ſaſſafras root, and liquorice root bruiſed, of each two drachms, bark of mezereon root, a drachm, and of boiling water, three pints: to digeſt the ſarſaparilla, the guaiacum, and the ſaſſafras, in the water, with a moderate heat, for ſix hours; then boil down to one-half, adding towards the end of the coction the liquorice and the mezereon; and finally, ſtrain. This decoction is an imitation of the once celebrated "Liſbon diet-drink." It operates as a diaphoretic and alterative, and is found to be uſeful in the treatment of ſecondary ſyphilis, chronic rheumatiſm, and in lepra, and ſome other cutaneous affections. The doſe is from f℥iv to f℥vi, taken three or four times a day.

The extract of ſarſaparilla is obtained, according to the Lond. Ph. by macerating a pound of ſarſaparilla root ſliced, in a gallon of boiling water, for twenty-four hours; then boiling down to four pints, ſtraining the ſolution while it is hot, and evaporating it to a proper conſiſtence. The decoction of the root is in every reſpect preferable to this, but neither poſſeſſes much efficacy. The doſe is from grs. ix to ʒj diſſolved in the decoction, and given in the form of pills.

There is another kind of ſarſa, the filaments of whoſe roots are thicker, growing in the iſland of Marignan, on the coaſt of Braſil: this is not eſteemed ſo good as the former.

There is a third kind brought from Muſcovy, whoſe roots are ſtill bigger, but good for nothing.

SARSAR, in *Geography*, a town of the Arabian Irak, on the Nahr el Malek; 10 miles S.E. of Bagdad.

SARSER, a town of Hindooſtan, in the circar of Aurungabad; 65 miles N. of Aurungabad.

SARSINA, in *Ancient Geography*, a town of Italy, in Umbria, in the interior of the country, upon the left ſide of the river Sapis. Silius Italicus ſpeaks of it:

> "——— Hic Sarcina dives lactis,"

SARSINA, or *Zarſina*, in *Geography*, a town of Italy, in the department of the Rubicon, the ſee of a biſhop, ſuffragan of Ravenna; it has no church but the cathedral; 11 miles W.S.W. of Rimini.

SARSKAR, a ſmall iſland on the E. ſide of the gulf of Bothnia. N. lat. 62° 19′. E. long. 21° 3′.

SARSTADT, or SARSTEDE, a town of Weſtphalia, in the biſhopric of Hildeſheim; 4 miles N.W. of Peina.

SARSURA, in *Ancient Geography*, *Surfeff*, a town of Africa Propria, of which Cæſar took poſſeſſion; ſituated 6 miles W. of Turris Annibalis.

SART, in *Geography*, a town of Aſiatic Turkey, in Natolia, anciently called *Sardis*, which ſee: inhabited at preſent by ſome Turks and a few Greeks; 30 miles E.N.E. of Smyrna.

SARTA, one of the ſmaller Shetland iſlands. N. lat. 60° 37′. W. long. 2° 4′.

SARTA, in *Ancient Geography*, a town ſituated on the Singitic gulf, between Tingos and the promontory Ampelos.

SARTAM, in *Geography*. See SERTAM.

SARTE, or SARTHE, a river of France, which riſes near Sees, in the department of the Orne, and near Angers is joined by the Mayenne; 4 miles below which the united ſtreams join the Loire. It is navigable from Le Mans.

SARTE, or *Sarthe*, one of the nine departments of the N.W. region of France, compoſed of Upper Maine and Anjou, in N. lat. 48° 10′, bounded on the N. by the department of the Orne; on the E. by the departments of the Eure, and Loire and Cher, and Cher; on the S. by the Indre and Loire, and Mayne and Loire; and on the W. by the department of the Mayenne. Its form is nearly circular, containing 6467½ kiliometres, or 321 ſquare leagues, and 387,166 inhabitants. It is divided into 4 circles, 33 cantons, and 413 communes. According to Haſſenfratz, the extent is 25 French leagues in length, and 20 in breadth, and comprehends 9 circles, 33 cantons, and 347,817 inhabitants. Its chief town is Le Mans. The contributions in the 11th year of the French era amounted to 3,986,579 fr. and its expences, adminiſtrative, judiciary, and for public inſtruction, to 292,814 fr. The ſoil is various, and tolerably fertile; but a conſiderable proportion of it is uncultivated. The products, according to the quality and melioration of the ſoil, are wheat, rye, barley, wine, fruits, with abundance of paſture.

SARTENE, a town of Corſica, and principal place of a diſtrict; the canton of which contains 4924 inhabitants.

SARTI, GIUSEPPE, in *Biography*, a ſweet, tender, and graceful compoſer, born at Faenza in 1730. In 1756 he went to Copenhagen as maeſtro di cappella to the young king of Denmark, for whoſe theatre he compoſed an opera, which had no great ſucceſs. In his way back to Italy he came through England, and publiſhed ſix ſonatas for the harpſichord. In 1769 he went to Venice, where he was appointed maſter of the conſervatorio of La Pieta, and compoſed an opera, which was in ſuch favour, that it was ſaid to be celeſtial muſic of the other world, "muſica dell' altro mondo." He next compoſed for Milan four operas, in which Marcheſi ſung, and which had all very uncommon ſucceſs. In 1782 he was appointed maeſtro di cappella to the Duomo in that city. His opera of "Giulio Sabino" was ſung at the ſame time by Marcheſi at Milan, and by Pacchieretta at Venice. In 1784 it was brought on the ſtage at Vienna, after it had been performed at all the principal theatres of Italy during two years. His harmony was ſweet and ſimple, and his melody truly vocal.

At the end of 1784 he again ſteered northward, having been engaged in the ſervice of the empreſs of Ruſſia for three years. In 1785 he eſtabliſhed a concert ſpirituel at Peterſburg, for which he compoſed, in the choral ſtyle, a pſalm in the Ruſſian language, which was performed by 66 voices and 100 inſtruments, among which there were wind inſtruments of every kind. In 1788 he compoſed a Te Deum for the victory over the Turks at Ockzakow. He was appointed director, the ſame year, of a conſervatorio, for the eſtabliſhment of which the empreſs expended 3500 rubles, and allowed 1500 in annual ſalaries and other incidental expences: and in order to engage Sarti to remain in Ruſſia, her imperial majeſty gave him an eſtate, with woods and ſeats upon it of conſiderable value. And he ſpent the chief part of his remaining days in cultivating his lands more than muſic. His opera of "Armida," in 1786, had pleaſed the empreſs ſo much, that ſhe gave him a golden vaſe or bowl, and a ring of great value. In 1790, at 60 years of age, he died in his way back to his own country for

for the recovery of his health, which had been much impaired by the ſeverity of the climate.

We ſhall give a liſt of his principal works for the uſe of curious collectors, as they are well worth ſeeking, being compoſed in ſo elegant, natural, and pleaſing a ſtyle, as is not likely to be ſoon out of faſhion.

For the church, 1. A miſerere, accompanied only by a tenor and violoncello in ſolo parts, and ripieno violini in the choruſes. 2. A motet, *confitebor tibi*, à 6. Soprano and contralto in the ſolo verſes. 3. A *gloria*, in nine parts, for the Ruſſian or Greek church.

For the theatre, twenty-ſix operas. See their names in Gerber, t. ii. p. 390.

Chamber muſic printed. Symphonies in nine parts at Leipſig, 1758. Three ſonatas for the harpſichord, with a flute accompaniment, Amſterdam. Three ſonatas, in London, 1769. Giulio Sabino characteriſtica, Vienna, 1787.

SARTIGAN, in *Geography*, a town of Lower Canada, on the Chaudiere. N. lat. 46° 12′. W. long. 70° 30′.

SARTILLE, a town of New Mexico, containing a large population of Spaniards and Indians. The churches and ſquares are tolerably handſome; the ſtreets broad and clean, and lined on each ſide with houſes of ſtone. Nevertheleſs the houſes, and particularly thoſe of the Indians, are conſtructed without regard to convenience in the diſtribution of their apartments. This town contains a conſiderable number of merchants, and is the chief mart for various productions procured from the ſavages, and which are retailed in the vicinity. It is alſo a repoſitory for all the different articles of apparel, as well as the luxuries of life, which the ſavages take in exchange for their horſes' ſkins and dried proviſions. De Pages Travels, vol. i.

SARTILLY, a town of France, in the department of the Channel, and chief place of a canton, in the diſtrict of Avranches; 4 miles N.W. of Avranches. The place contains 952, and the canton 9831 inhabitants, on a territory of 162½ kiliometres, in 14 communes.

SARTINE ISLANDS, *Iſles Sartine*, a cluſter of iſlands in the North Pacific ocean, ſo named by Perouſe. Probably, he ſays, there might be found a paſſage between them; but it would be imprudent to attempt it without much precaution. Theſe are the iſlands of Beresford of captain Dixon, who lays them down in N. lat. 50° 52′, and 132° 3′ W. long. from the meridian of Paris.

SARTO, ANDREA DEL, in *Biography*, the cognomen of a painter of very conſiderable celebrity, whoſe real name was Andrea Vanucchi. He was a native of Florence, the ſon of a taylor, from whence he obtained the name of del Sarto. He was born in 1488, and having exhibited at an early age a propenſity for drawing, he was placed with a goldſmith to learn the art of engraving on plate. Here he was noticed by a painter called Giovanni Barile, an artiſt but little known, with whom he ſtudied for three years, and then entered the ſchool of Pietro Coſimo. His greateſt acquirements, however, were obtained by ſtudying the works of Maſſaccio and Il Ghirlandaio; and afterwards the cartoons of Michael Angelo and Lionardo da Vinci; upon the ſtyle of the latter of whom he ultimately built his own. But his progreſs was not marked by any degree of extraordinary brilliancy or rapidity; being rather the effect of ſobriety of judgment, and continued practice, than of that intuitive and active principle by which his great teachers were urged forwards in their career.

On leaving the ſchool of Coſimo, he formed an intimacy with Franceſco Bigio; and as there exiſted a great degree of ſimilarity in their tempers and minds, they agreed to dwell together. They painted many works in conjunction, in the churches and convents at Florence, and obtained conſiderable reputation. The deſigns he made for the ſeries of pictures he was engaged to paint in the church of the Scalzi, or bare-footed Carmelites at Florence, are preſerved in the Palazzo Rinuccini. The ſubjects are taken from the life of St. John the Baptiſt. In theſe the gradual progreſs he made in his art is extremely obſervable, and prepared him for the ſucceſsful proſecution of his next labour, the life of St. Filippo Benizi, in ten pictures, for the church of the Servi. There his cultivated taſte exhibited itſelf in a more vigorous ſtretch of imagination; and thoſe pictures are conſidered as among his moſt excellent productions.

Although thus occupied, and in high renown at Florence, yet the reputation then acquired by Raphael excited him to viſit Rome, where, on his arrival, Vaſari ſays, "that on ſeeing thoſe works which had been the object of his journey, deſpair of ever being able to rival them affected his timid diſpoſition ſo much, that he made haſte to leave the city, and returned to Florence." This ſtory, however, appears ſcarcely credible in its full extent, ſince in many of his works he evidently appears to have imitated the ſtyle of Raphael, which he hardly could ſo well have done, if he had not taken ſome time to ſtudy his works and principles. After his return from Rome he finiſhed three pictures for the monaſtery of the Servi; the ſubjects of which were, the Birth of the Virgin, the Deſcent of the Holy Ghoſt, and the Laſt Supper. Of the beauty of the latter work, Sanzi relates this remarkable occurrence: "that at the ſiege of Florence in 1529, ſome ſoldiers who attacked the ſuburb in which the convent was ſituated, and had deſtroyed the church and part of the monaſtery, on coming to the refectory, where this picture was placed, they were ſo ſtruck with its perfection, that they deſiſted from their work of ruin:" as in a ſubſequent period, other mercenaries paid inſtinctive reſpect to the power of art, in preſerving the works of Parmeggiano at Rome; and as Demetrius Poliorcetes had done at Rhodes, to the labours of Protogenes.

Of Andrea's power in imitating the work of another, and no leſs ſkilful a hand than that of Raphael, Vaſari mentions a very remarkable inſtance. Raphael had painted, for the cardinal Julio de Medici, the portrait of Leo X. between thoſe of that prelate and cardinal Roſſi, in which the drapery and back-ground were painted by Julio Romano. Frederick, ſecond duke of Mantua, paſſing through Florence to Rome, requeſted Clement VII. to make him a preſent of it; when the pope ordered it to be ſent to him. Unwilling to deprive Florence of ſo great a work of art as that picture, Ottavia de Medici employed A. del Sarto to make a copy of it, which was ſent to the duke of Mantua at the time when Julio Romano was in his ſervice; and ſuch was the ſpirit and exactneſs of the copy, that even Julio himſelf never ſuſpected the deception, till he was informed of it by Vaſari, who ſhewed him del Sarto's private mark.

The fame of Andrea reached the ears of Francis I. of France, who, deſirous of embelliſhing his country by the works of ingenious artiſts, commiſſioned him to paint him a picture; and he ſent that monarch a dead Chriſt, with the Virgin, and John, Mary Magdalen, and other figures, which is now in the gallery of the Louvre. In conſequence he was invited by the king to the court of France, and being then in penurious circumſtances, owing to the troubled ſtate of the country, he gladly accepted ſo flattering a teſtimonial of his merits. He was received there with great reſpect and diſtinction. The king was pleaſed with him as a man and an artiſt; loaded him with attentions; and for a portrait of the dauphin paid him three hundred crowns in gold. He painted a picture of Charity, now in the Louvre, for his majeſty, and a great number of works for the nobles about the court: ſo that he wanted nothing conducive to happineſs, as far as eſteem, affluence, and honours, could gratify him. In the midſt of this proſperity, while he was painting a portrait of the queen-mother, and before he had completed it, he received, unfortunately for him, letters from his wife preſſing him to return to Florence. To indulge her wiſhes, he obtained the king's leave to go, promiſing to return in a few months with his family, and ſettle in France. The monarch confided in his integrity; and not only made him ſeveral preſents with royal liberality, but alſo entruſted him with a large ſum of money, to purchaſe ſtatues, pictures, &c. worthy of a royal collection. Unhappily, on Andrea's return home he forgot his engagements, broke through all ties of gratitude and honour, and ſhamefully ſquandered both the gifts and truſt of his generous patron with his improvident wife, and faithleſs friends. It is almoſt needleſs to add that he never returned to France. At laſt he fell into that poverty to which, by his prodigality and ingratitude, he ſeemed juſtly entitled, and ſunk into wretched deſpondency; when, being deſerted by the woman who was principally inſtrumental in bringing him into this ſtate of miſery, he ſuffered a variety of difficulties and diſtreſſes, and died of the plague, which afflicted his native city, in 1530, in the forty-ſecond year of his age.

The moſt renowned picture of del Sarto is a compoſition known by the name of the Madonna del Sacco, from the circumſtance of St. Joſeph, who is near her, reclining on a ſack of grain. The ſimplicity and beauty of this work place him far above his uſual rank; and indeed it might well paſs for a production of Raphael. In general, his groups have more of common nature, and his expreſſions border on inſipidity. The quality moſt eſteemable in his productions, and which is extraordinary, conſidering that he was a Tuſcan, is the clear and evaneſcent tones of his colouring, which are as pure and harmonious, if not ſo luminous, as thoſe of Correggio. The fame, however, which he acquired by a few pictures, has given a value to all thoſe which proceeded from his hand, to which many of them are by no means entitled: and he certainly is not one of thoſe unfortunate ſons of genius, who have enjoyed leſs than their due portions of praiſe. His compoſitions are agreeable; his deſign partakes of the ſtyle of Michael Angelo, without his boldneſs, or breadth, and his execution is light and clear, though ſometimes weak. His pictures, when they are brought to ſale, bring high prices, and are but rarely to be met with in this country.

SARTORIO, Antonio, a Venetian maeſtro di cappella of St. Marc's cathedral. He was long in the ſervice of the court of Brunſwick, and regarded as an excellent maſter. His compoſitions for that court are numerous, as are thoſe for the theatres of Italy, and for the chapel of St. Marc. Between the years 1652 and 1681, he produced ten operas, chiefly for Venice.

SARTORIUS, in *Anatomy*, (le couturier, ilèo-prètibien), a muſcle of the thigh, ſituated on the anterior, and then on the inner ſurface of the limb; elongated, (being one of the longeſt muſcles in the body,) flattened, about two fingers breadth in width, and extended from the os innominatum to the tibia. Its anterior ſurface is covered by the faſcia lata; the poſterior lies on the iliacus internus, the rectus, the crural veſſels, the triceps, the gracilis, and the internal lateral ligament of the knee. The edges are unconnected, and preſent nothing peculiar.

The ſuperior extremity is fixed to the anterior and ſuperior ſpine of the ilium, between the iliacus internus and the tenſor vaginæ. Thence the muſcle deſcends obliquely inwards, croſſing the front of the thigh at its upper part, and running along the inner ſide of the limb in its inferior third part. It goes behind the internal condyle of the femur and the knee-joint; then bends forwards to be attached to the front of the tibia, below its tuberoſity, and in front of the gracilis and ſemitendinoſus.

The ſartorius is tendinous at its extremities, and muſcular in the reſt of its extent. The upper tendon is very ſhort, the lower muſcle longer, and expanded into an aponeuroſis, of which the edges are connected to the faſcia lata ſurrounding the knee, and to the aponeuroſis of the leg.

The ſartorius bends the leg on the thigh, and carries it obliquely acroſs the oppoſite limb, as in ſitting croſs-legged on a flat ſurface. When the knee is bent, it will bend the thigh on the pelvis. If the knee be maintained in extenſion, the ſartorius will carry forwards, and at the ſame time rotate outwards, the whole lower extremity. It will bend the pelvis on the thigh, and ſupport it in equilibrio in the erect poſition of the body.

SARTOROE, in *Geography*, a ſmall iſland in the North ſea, near the coaſt of Norway. N. lat. 60° 17′.

SARU, a town of Perſia, in the province of Irak; 35 miles S.E. of Kom.

SARUA, a town of Perſia, in the province of Kerman; 60 miles N. of Kermanſhir.

SARVAJAYA, in *Mythology*, a name of the Hindoo goddeſs Parvati, given to her in her martial character of Durga. The name means "all-conquering." Jaya and Vijaya, ſee thoſe articles, have ſimilar derivations.

SARVAMANGALA, a name of the Hindoo goddeſs Parvati; which ſee. The name is ſaid to mean "all-preſerving," or "all-foſtering," alluding to her preſiding over the welfare of all nature: an appellation and character that we ſhould rather have deemed applicable to Lakſhmi, the conſort of the conſervative Viſhnu; but the functions and appellations of theſe goddeſſes are often found to coaleſce, as noticed under their reſpective names, and under Saraswati.

SARUAN, in *Geography*, a town of Perſia, in Segeſtan, on the Heermund, oppoſite to Dergaſp.

SARVAR, a town and fortreſs of Hungary, at the conflux of the rivers Raab and Guntz; 48 miles S.S.E. of Vienna. N. lat. 47° 30′. E. long. 17° 9′.

SARVITZ, a river of Hungary, which riſes about ſix miles N.N.E. of Stuhl Weiſſenburg, and runs into the Danube near Mohacs.

SARVITZA, a town and fortreſs of European Turkey, in the province of Theſſaly; 30 miles N.E. of Lariſſa. N. lat. 40° 3′. E. long. 21° 58′.

SARUKS, the ancient *Sarigo*, a town of Perſia, in the province of Khoraſan or Choraſan, 38 furſungs from Meſhed, and 24 from Merv; now inhabited by 6000 families of Turkomans.

SARUM, or Saron, in *Ancient Geography*, a town of European Sarmatia, and one of thoſe which Ptolemy places at the mouth of the Boryſthenes.

Sarum, *Old*, in *Geography*, a ſpot in Wiltſhire, England, one mile N. of Saliſbury, was formerly a city of note, and is ſtill inveſted with the privilege of a borough town, by ſending two members to the parliament, but is now deprived of houſes and inhabitants: yet though deſolate, and with ſcarcely a veſtige of human habitation, it is peculiarly intereſting in its annals and aſſociations to the topographer and to the antiquary. Once a proud, populous and flouriſhing city, adorned with a cathedral and other religious edifices, and guarded by lofty bulwarks, towers, and a caſtle: now diſplaying nothing of human art, but ditches and banks, which are partly overgrown with wild bruſh-wood, while the more level land is appropriated to corn and graſs. The foundation of Old Sarum is referred, by tradition and all the early accounts extant, to the Britons at ſome era prior to the Roman invaſion; and this opinion is conſidered by moſt antiquaries to be ſtrongly corroborated by the circular form of the fortifications, and their poſition on the ſummit of an eminence. Under this impreſſion, ſir Richard Hoare conſiders it to have been probably one of thoſe fortreſſes which was wreſted from the Britons in the reign of the emperor Claudius, "when his general, Veſpaſian, is ſaid to have taken twenty Britiſh towns, and to have ſubdued two powerful nations, one of which is ſuppoſed to be the Belgæ, who inhabited the weſtern counties of Hampſhire, Wiltſhire, and Somerſetſhire." Whether this city was among the number taken by Veſpaſian, or was firſt founded by the Romans, it is univerſally allowed to have been very early one of the principal ſtations of that people, and to have been denominated Sorbiodunum, or Sorviodunum; though whether this appellation was originally applied by the Romans, or was a mere modification of the Britiſh name, is altogether uncertain; nor is its hiſtory under the Romans better aſcertained. But that they continued to occupy it for a long time, and probably to the lateſt period of their reſidence in Britain, may fairly be inferred from the extent of its works, and from the military roads communicating with it. Theſe roads appear to have been ſix in number, and communicated with the following ſtations, &c. One proceeded ſouth-weſterly to Durnovaria, Dorcheſter; a ſecond, eaſterly to Venta-Belgarum, Wincheſter; a third north-eaſterly to Vindonum, Silcheſter; a fourth appears to have branched off from the latter to Cunotie, near Marlborough; a fifth ſouth-weſterly towards Iſcalia, Ilcheſter; and a ſixth to Aquæ Solis, Bath. Some of theſe military ways, or roads, are ſtill ſeen in bold ridges in different parts of the neighbouring downs. Soon after the Romans left this iſland, Old Sarum was occupied by the Saxons.

In the year 552, it was beſieged and captured by Kenric, the ſecond king of Weſſex; and proved a moſt important acquiſition to the Weſt Saxons, as it put them in poſſeſſion of a ſtrong poſt within the dominions of the enemy, in which they could eſtabliſh magazines, and thereby become enabled to extend their conqueſts with greater rapidity. We accordingly find, that within a few years Kenric ſubdued the whole of Wiltſhire, and ſome diſtricts of the adjoining counties. From this period to the diſſolution of the heptarchy, but few notices occur of the hiſtory of Old Sarum: it was unqueſtionably throughout the whole time a royal caſtle, and was frequently occupied by the Weſt Saxon monarchs. Afterwards, it ſeems to have been uſually committed to ſome powerful nobleman; but ſtill continued the peculium of the monarch himſelf. In the time of Alfred an outer ditch was formed by his order; as appears evident by an original document preſerved in the Cottonian library; and which is thus rendered by ſir Richard Hoare, in his "Ancient Wiltſhire." "I Alfred, king and monarch of the Engliſh, have ordered Leofric of Wiltunſhire, not only to preſerve the caſtle of Sarum, but to make another ditch to be defended by palliſadoes, and all who live about the ſaid caſtle, as well as my other ſubjects, are immediately to apply to this work." King Edgar convoked a parliament or great council at Sarum in the year 960, to conſult about the beſt mode of defence for the northern counties againſt the depredations of the Danes; and ſeveral laws for the better government of the church, as well as the ſtate, appear to have been enacted at the ſame time. In 1003, Swein, king of Denmark, is ſaid to have pillaged and burnt the caſtle of Old Sarum: but the injury could not have been very great; for ſoon afterwards we find that biſhop Herman eſtabliſhed his epiſcopal ſeat here. He alſo laid the foundation of a cathedral church, but died ſhortly after its commencement, and left it to be completed by his ſucceſſor, Oſmund, who was lord of Say in Normandy, earl of Dorſet in England, and lord chancellor. This prelate was laviſh of expence, both in the execution of the building, and in the eſtabliſhment of the clergy and ſingers: by his care and aſſiduity in ſelecting perſons properly qualified, and by his munificence in rewarding merit, his choir ſurpaſſed every other in the iſland. To give greater dignity and permanency to the church, he granted to the dean and chapter a charter, conveying to them for ever many towns, with lands, churches, and oblations. This charter is dated in 1091, was ſigned by thirty-ſeven prelates and great dignitaries, and confirmed by the king, William Rufus, as it was alſo at a ſubſequent period by Henry II. Oſmund was exemplary for his piety and morality in an age peculiarly diſſolute, and alſo for his literary induſtry. He compoſed the celebrated form of church ſervice, which was received and adopted in moſt choirs in England. During his prelacy ſeveral events of great political importance appear to have taken place at Old Sarum; particularly, an aſſembly of all the nobles, biſhops, and landholders in the kingdom, ſummoned thither by king William in 1086, to ſwear allegiance to him, and to introduce that remarkable change in our conſtitution, the formal and full eſtabliſhment of the feudal ſyſtem; whereby the king at once placed the country in ſtrong defence againſt foreign enemies, and ſecured the fidelity of his ſubjects. Another great council was held at Old Sarum by William Rufus in 1095 or 1096. On the death of Oſmund, which occurred in 1099, Roger was advanced to the ſee by the favour of king Henry I. who had raiſed him from obſcurity to the higheſt offices in the ſtate. With the biſhopric, the caſtle of the city was committed to his cuſtody: he environed the whole with a new wall; augmented the ſtrength of the fortifications; and embelliſhed the cathedral in the moſt coſtly ſtyle. The prelacy of Roger was marked by important national events; king Henry held his court here for ſome months in 1100, and again in 1106; and in 1116 he aſſembled here all the nobles and barons of the realm, to ſwear allegiance and do homage to his ſon William, as ſucceſſor to the throne. But William died long before the throne was vacant; and at the death of Henry, Matilda, his only ſurviving child, became the rightful poſſeſſor of the crown. But no ſooner had Henry breathed his laſt, than his nephew Stephen determined to ſeat himſelf on the throne. In this object he was principally favoured by the influence of biſhop Roger, whom Henry had left guardian of the realm, and who ſhamefully betrayed the truſt he had ſworn to preſerve. But Roger ſoon had cauſe to repent of his conduct, from the cruel policy and baſe ingratitude of Stephen; which ſo ſtrongly affected the biſhop's mind that he died of grief in 1139. After a vacancy of three years, Joceline de Bailul was conſecrated, and preſided over this dioceſe for forty-one years, when he retired to a convent and aſſumed the habit of a Ciſtercian monk. During the conteſts between Matilda and Stephen, Sarum appears to have been alternately occupied by each party; and each, when obliged to abandon it, razed the fortifications, that the poſt might be leſs tenable by their antagoniſts. When Henry II. therefore aſcended the throne, he found the caſtle in a diſmantled ſtate. The ſee was not filled till the year 1189, when Hubert Walter was conſecrated; but he being ſoon advanced to that of Canterbury, the biſhopric of Sarum devolved on Herbert Poore, in 1194. During his preſiding, the contentions between the caſtellans and the clergy, which had riſen to a great height in the prelacy of Joceline, became more violent and ſerious; which, joined to the other difficulties attendant on the ſituation of Old Sarum, determined the biſhop and canons to have the fee tranſlated to a place of greater freedom and convenience. Leave was obtained from king Richard to build a new church in the valley at ſome diſtance from the caſtle; but the deſign was relinquiſhed by the biſhop, from the idea that the expence would far exceed his abilities. He died in 1217, and was ſucceeded by his brother, Richard Poore, when the project of tranſlating the church was reſumed; and the dean and chapter ſent ſpecial meſſengers to Rome to urge the neceſſity of it. Pope Honorius inſtituted an enquiry into the grievances complained of, and granted a bull for the deſired removal. On the receipt of this indulgence, a general convocation of the biſhop and canons was held; and it was ſolemnly determined that a new church ſhould be built on the ſcite of the preſent cathedral at Saliſbury. (See SALISBURY.) This reſolution was ſoon carried into effect; and from that time may be dated the ruin of Old Sarum. For the people ſoon deſerted their ancient habitations, and built others in the immediate vicinity of the new cathedral. Hence no hiſtorical event of importance relative to this place occurs ſubſequent to that period.

The preſent appearance of Old Sarum is wild and dreary; the natural feature is a gentle eminence, riſing from a valley on the weſt, and connected with a ridge which extends to the eaſt. This poſition is artificially raiſed at the centre, where the keep or citadel was placed, and which was guarded by a deep foſſe on the outſide, and a lofty rampart or vallum within. The incloſed area is about 500 feet in diameter. On its eaſt ſide was the principal entrance; where it is ſuppoſed there were baſtion towers, a bridge acroſs the foſſe, and other defenſive works. A large area, or outer ballium, ſurrounded the citadel, which was again circumvallated with a bank and ditch. Theſe incloſed the chief part of the city, meaſuring, according to ſir Richard Hoare, ſeven furlongs twenty-ſix yards in circumference, and compriſing an area of twenty-ſeven acres and a half. On the outer ſide were the ſuburbs on the ſouth-eaſt and weſt parts; chiefly on the latter. The valla of each of the great ditches are nearly of equal height; the former being one hundred and ſix feet, and the latter one hundred feet. Both are exceedingly ſteep on the ſcarp ſide, particularly the inner rampart; and both were ſurmounted by maſſive walls, ſome foundations of which are ſtill viſible, and ſhew them to have been at leaſt twelve feet in thickneſs. A large maſs of one of theſe walls, apparently of Roman workmanſhip, crowns the outer vallum on the north ſide. The ſpace between the two works is interſected at three places by a ditch and vallum, connecting the two circular banks, and intended for the defence of the remaining portions of the city, ſhould an enemy have ſucceeded in obtaining poſſeſſion of one part of it. The two entrances to this fort, mentioned by Leland, are of very curious conſtruction, each paſſing the ſides of a remarkable mount, reſembling a rude horn-work, which has a deep ditch and high bank, peculiar to itſelf. The principal one faces the eaſt; and the other, called the poſtern-gate, faces the weſt. Near the latter, a ſpot is ſtill pointed out where the ancient cathedral ſtood; but no diſcriminating veſtiges are now extant. On the north ſide of the large vallum, and immediately at its junction with the tranſverſe vallum, is a ſubterraneous paſſage, which was diſcovered in the year 1795; and, on being explored, was found to extend, in a ſloping direction, from the inner area to the outer ditch. The mouth, or entrance, is about four feet in width; thence a covered way of about ſeven feet broad, and from eight to ten feet high, deſcends in an angle nearly parallel to the glacis of the ſide of the hill, to the depth of an hundred and fourteen feet. The deſcent was by means of ſteps excavated in the chalk rock, and is ſaid to have been not much worn, which ſeems to indicate the ſecrecy of the paſſage. Nearly on the oppoſite ſide of the area is a ſimilar ſinking of the ground, which may be conſidered as denoting the exiſtence of a ſimilar cavity. Within the keep a hollow in the ground may ſtill be obſerved, which, according to tradition, is the ſpot where a well was ſunk to a great depth; but it is now nearly filled up. Four other wells are mentioned as having been ſituated in the city portion of the works, though none can now be diſcovered.

The borough of Old Sarum has long been a ſubject of popular notoriety. Ever ſince the thirty-fourth year of Edward III. this place has continued to ſend two members to parliament; and it was repreſented in the twenty-third year of Edward I. Whether this privilege, as now exerciſed, is derived from charter, or is a preſcriptive right, does not appear from any publiſhed work: but at preſent the property of the borough is wholly veſted in the earl of Caledon, who purchaſed it of the late lord Camelford. The burgage pieces or plots of ground are traditionally ſaid to be the ſcites of the laſt houſes which remained within the limits of the borough, and amounted to ten or twelve about one hundred years back. The houſes appear to have conſtituted part of a ſtreet, which abutted on the Roman road, immediately on the ſouth-weſt ſide of the circumvallated city. In the general election in the year 1802, there were five electors aſſembled here, beſides the bailiff, who is the returning officer.

John of Saliſbury, one of the moſt eminent ſcholars of his age, was born at Old Sarum, in the early part of the twelfth century; but the exact date is not recorded.

Stratford, called Stratford under the Caſtle, is a pariſh extending along the valley on the eaſtern banks of the Avon, and derives its name from its poſition on the ſtream where the old Roman road croſſed it: and thus was originally called Street-ford. Great part of the church of Stratford was built by an anceſtor of the late lord Camelford. Under an old tree near this church, is the ſpot where the members for Old Sarum are elected; or rather deputed to ſit in parliament.—Account of Old Sarum, 4to. 1787. Antiquitates Sariſburienſes, by Dr. Ledwich, 8vo. 1777. Ancient Wiltſhire, by ſir Richard Hoare, bart. folio, 1813. Account of Wiltſhire, by John Britton, F.S.A. in vol. xv. of the Beauties of England and Wales, 8vo. 1814.

SARUOM, in *Ancient Geography*, a town ſituated in the interior of Arabia Felix. Ptolemy.

SARUN, in *Geography*, a circar of Hindooſtan, in Bahar, bounded on the N.E. by the Gundak, which ſeparates it from Bettiah and Hajypour, on the S.W. by the Ganges, and on the W. and N.W. by Oude; about 75 miles long, and 45 broad. Chuprah is the capital.

SARUNNA, a town of Hindooſtan, in the province of Tatta; 20 miles S. of Tatta.

SARURPOUR, a town of Hindooſtan, in the circar of Schaurunpour; 30 miles S.W. of Merat.

SARUS, SAIHOUN, in *Ancient Geography*, a river of Aſia, in Cilicia; it ſprung from the mountains of Armenia, traverſed the ancient Cilicia, and running a S.W. courſe, diſcharged itſelf into the Mediterranean, at a ſmall diſtance from the town of Adana, or Antioch. It was near the mouth of this river that the fleet of Antiochus the Great was almoſt deſtroyed by a tempeſt, in the year 196 B.C. —Alſo, a river of Cappadocia, in Cataonia; which watered the town of Comana, according to Strabo.—Alſo, a river of Aſia, in Caramania, having its mouth in the gulf of Paragonte, between Gogana and Magida, according to Ptolemy. —Alſo, a mountain of Italy, in which was the ſource of the river Sarnus.

SARWERDEN, in *Geography*, a town of France, in the department of the Moſelle, formerly the chief place of a county, governed by independent princes, but afterwards divided into the houſes of Naſſau and Lorrain; 34 miles N.N.W. of Straſburg.

SARZANELLO, a town of Genoa, ſituated on a mountain of the ſame name; 1 mile N. of Sarzana, or Sarſana.

SARZEAU, a town of France, in the department of the Morbihan, and chief place of a canton, in the diſtrict of Vannes; 7 miles S. of Vannes. The place contains 5986, and the canton 9581 inhabitants, on a territory of 167½ kiliometres, in 3 communes.

SARZEDAS, a town of Portugal, in the province of Beira; 7 miles N.W. of Caſtel Branco.

SARZENA, a town of Italy, in the department of the Mela; 6 miles N.E. of Breſcia.

SAS *de Ghent*, a town and fortreſs of Flanders, ſituated on a canal made from Ghent to the Scheldt; ſmall, but regularly fortified, with ſluices, by means of which the whole country can be laid under water. The Spaniards built it for the ſecurity and convenience of Flanders, particularly of the city of Ghent, which might receive veſſels by the canal; but in 1644 the Dutch became maſters of it, and obſtructed the paſſage. In 1747 it was taken by the French, but reſtored at the peace of Aix-la-Chapelle; 25 miles W. of Antwerp.

SASAF, a river of Maryland, which runs into the Cheſapeak, N. lat. 39° 25′. W. long. 76° 10′.

SASAMON, a town of Spain, in Old Caſtile; 20 miles N.W. of Burgos.

SASANAH, a town of Hindooſtan, in Oude; 32 miles S. of Lucknow.

SASANAN, a town of Hindooſtan, in the circar of Cicacole; 20 miles N.E. of Tickely.

SASANDA, in *Ancient Geography*, a fortified and maritime place of Aſia Minor, in Caria, placed by Diodorus Siculus at 150 ſtadia from the town of Caunus.

SASANQUA, in *Botany*, altered from the Japaneſe name *Saſankwa*, a ſhrub nearly reſembling tea, found in Japan, about Nagaſaki; ſee CAMELLIA and THEA. The *leaves* of *Camellia Saſanqua*, having, when dried, a fragrant ſmell, are uſed in the form of a decoction, by the Japaneſe women, for waſhing their hair. Thunberg informs us likewiſe, that theſe leaves are mixed with thoſe of the tea ſhrub, to improve the odour of the tea.

SASAW, in *Geography*, a town of Hindooſtan, in the circar of Gangpour; 26 miles N.E. of Pada.

SASCAVETZ, a town of Hungary, near the Drave; 8 miles W. of Cſakathurn.

SASEAGUR, a town of Hindooſtan, in Bahar; 5 miles W. of Saſeram. N. lat. 24° 58′. E. long. 84° 5′.

SASERAM, a town of Hindooſtan, and one of the chief places of the circar of Rotas, in Bahar; 75 miles S.W. of Patna. N. lat. 24° 58′. E. long. 84° 9′.

SASHES, in *Military Language*, are badges of diſtinction, worn by officers, either round the waiſt, or over the ſhoulders. They are made of crimſon ſilk.

SASI, or SASIN, in *Mythology*, a name of the Hindoo deity Chandra, or Soma, regent of the moon. The name is ſaid by ſome Sanſcrit ſcholars to be derived from the antelope; ſome ſpecies of this animal being ſpotted, or marked, ſomething like the face of the moon. Sir W. Jones gives this interpretation in his hymn to Surya, or the ſun, in which he thus invokes the lunar orb:

> "Thou nectar-beaming moon,
> Regent of dewy night——
> From yon bright roe that in thy boſom ſleeps,
> Fawn-ſpotted, Saſin hight."

And in his tranſlation of the *Hetopadeſa*, he ſays that "the moon is alſo called Saganka, or fawn-ſpotted." The epithet "nectar-beaming," above applied, is from a Sanſcrit compound, as noticed under SOMA.

Mr. Colebroke, in the Aſiatic Reſearches, vol. ix. finds on a grant of land engraven on copper, about 600 years old, an epithet of the moon, which he tranſlates "hare-ſpotted luminary;" and adds, that "the moon is named Saſin from a fancied reſemblance of its ſpots to a leveret."

Mr. Wilkins, in his tranſlation of the Hetopadeſa, countenances the latter tranſlation as applicable to the moon, making, however, the rabbit, inſtead of the hare, the emblem of Chandra, and conſecrated to him; adding, that "the Hindoo poets have imagined the moon as a deity drawn by antelopes, holding in his right hand a rabbit." Saſi, or Saſa, it may be noticed, is ſtill a common name for the hare in the Hindoo dialect.

We thus ſee that both the antelope and hare or rabbit are attributes of the moon. It has been ſurmiſed, that the hare or rabbit, being a nocturnal and ſwift animal, may have been deemed a fit emblem, as referring to the ſeaſon, and (as well as the antelope) to the apparent celerity of the moon. And farther, as to the hare or rabbit; it is fancied in India, that this animal is ſubject to periodical ſecretion, ſimilar to the catamenia of the human female; and ſimilarly regulated by lunar influences. Hence it may be inferred that the hare, being deemed ſymbolical of Chandra, may bear a phyſiological alluſion. The great fecundity of the rabbit, to the extent, as is ſuppoſed, of monthly parturition, may alſo have been thought an additional reaſon for aſſigning it to the moon; that luminary being farther reckoned very influential in promoting the growth of vegetables. See SOMA.

In the plates of the Hindoo Pantheon the figure of Chandra or Soma occurs ſeveral times, and always drawn by, or mounted on an antelope; as he is alſo in the Indian zodiac, given with ſir W. Jones's diſſertation in the ſecond volume of the Aſiatic Reſearches. We recollect only one inſtance where a rabbit or hare appears as a lunar emblem, and this is in Cordiner's Account of Ceylon, where, in the place evidently of the moon, that animal is ſeen. Vol. i. p. 196.

SASIGNES, a general name, which, in Mr. Muller's arrangement of the iſlands between Kamtſchatka and America, comprehends the following ſix; *viz.* Behring's and Copper iſlands, and the neareſt Aleutans, of which Otma, Samia, and Anatto, are moſt eminent.

SASINA, in *Ancient Geography*, a town of Cappadocia, upon the route from Ancyra of Galatia, to Fauſtinopolis, in paſſing by Archelais, according to the Itinerary of Antonine.

SASINA *Portus*, a port of Italy, in Meſſapia. Pliny.

SASKARON, in *Geography*, a ſmall iſland in the gulf of Bothnia. N. lat. 65° 46′.

SASKATCHIWINE, a river of North America, which riſes above N. lat. 54°. W. long. 114° 30′, paſſes through

Mud lake and Cedar lake, is navigable nearly to its ſource, and runs into lake Winipeg, or Winipic. A few miles from the lake, it has rapids for three miles, where it is about a mile wide. At the foot of the falls is an excellent ſturgeon fiſhery. The Engliſh have on this river five factories for trading with the Indians; among whom are the Nepawi, Kniſteneaux, Stone Indians, Aſſiniboins, and ſome others.

SASNAH, a town of Hindooſtan, in Oude; 25 miles S.E. of Cawnpour.

SASO, Sason, *Saſonis*, or *Saſſon*, in *Ancient Geography*, an iſland of the Ionian ſea, towards the coaſt of Illyria, and encompaſſed with rocks and ſand: thus Silius Italicus ſays of it:

> "Adriatici fugite infauſtas Saſſonis Arenas."

SASONES, a people of Scythia, who inhabited the territory on this ſide of the Imaus, and S. of the Maſſæi and Alani mountains, according to Ptolemy.

SASRAM, in *Geography*, a ſmall iſland in the gulf of Siam, near the coaſt of Camboja. N. lat. 10°. E. long. 103° 48′.

SASSA, a town of Naples, in Abruzzo Ultra; 7 miles S.S.W. of Aquila.

SASSAFRAS, a ſmall navigable river of America, in Maryland, which riſes in the ſtate of Delaware, and runs weſtward into Cheſapeak bay; ſeparating Kent county from that of Cecil, and having the towns of Frederickſtown, Georgetown, and Saſſafras on its banks.—Alſo, a town of Maryland, 20 miles S. of Elkton.

Sassafras, in *Botany*, a fragrant wood, the produce of the *Laurus Saſſafras* of Linnæus. (See Laurus.) Such at leaſt is the common American Saſſafras; but we procured, in a ſhop at Venice, a different and more powerfully ſcented wood, though of a ſimilar flavour, which was called Oriental Saſſafras, but with whoſe origin we are not acquainted.

The wood of this tree, which is very common in moſt parts of North America, is of a browniſh-white colour; and the bark ferruginous, within ſpongy, and diviſible into layers. The wood, root, and bark are odoriferous, of a briſk aromatic ſcent, ſomewhat reſembling fennel. The natives call it *pavama;* the Spaniards and French call it *cinnamon-wood;* becauſe, at the conqueſt of that country, under Ferdinand Soto, in 1538, they imagined this to have been the true cinnamon-tree.

The lignum ſaſſafras, and chiefly its bark, wherein its principal virtue is ſuppoſed to reſide, as it does alſo in the ſmaller twigs more than in the larger pieces, was formerly ſold at an incredible price, to be uſed with ſarſaparilla and China-root in the cure of the venereal diſeaſe. It is very drying and hot, though not quite ſo much as the guaiacum. It is imported in logs, which are ſtraight and branched pieces, light, and of a ſpongy texture, and covered with the thick rough bark. The bark is ſeparated from the wood, which is cut into chips, as is alſo the root.

It is ſomewhat come into faſhion in families as a common tea, which the ſhavings of it make agreeable enough; but the ſcandal of being good in venereal caſes is a detriment to it, and prevents much good being done by it. Chooſe that covered with a thick bark, reddiſh, and rough, of a ſharp taſte, and a ſtrong aromatic ſmell. It gives out its virtues, together with a reddiſh colour, totally to ſpirit, and leſs perfectly to water. Diſtilled with water, it yields a fragrant eſſential oil (ſee Oil *of Saſſafras*), of a penetrating pungent taſte, the heavieſt of all eſſential oils, and ſo ponderous as to ſink in water; limpid and colourleſs when newly diſtilled; by age growing yellowiſh, and at length of a reddiſh-brown colour; the remaining decoction, inſpiſſated, yields a bitteriſh ſubaſtringent extract. The inſpiſſated extract, obtained from rectified ſpirit, diſtilled from the tincture made in that menſtruum, retains, along with the bitterneſs and ſubaſtringency, nearly all the aromatic matter of the root.

Saſſafras is a ſtimulating diaphoretic and diuretic, and has been employed in caſes of ſcurvy, chronic rheumatiſm, and gout, and in cutaneous affections; and was formerly regarded as beneficial in *lues venerea* (which ſee), but it has no pretenſion to the character of an antiſyphilitic. For theſe purpoſes, both the volatile and the fixed parts, the diſtilled oil, and the watery extract, have been given with ſucceſs: the ſpirituous tincture, or extract, which contain both, appear to be the moſt elegant preparations. Infuſions of the cortical or woody part, raſped or ſhaved, in water, are apt, by their fragrance, on firſt taking them, to affect the head; but this inconvenience, to which neither the watery nor ſpirituous extract is ſubject, is commonly remedied by continued uſe. The infuſion is the beſt form of giving the remedy, as much of the oil is diſſipated in making the decoction.

The oil is ſometimes given with the ſame intention as the infuſion. The officinal preparations are, "oleum ſaſſafras," L.E.D. (ſee Oil *of Saſſafras*); "decoctum ſarſaparillæ compoſitum," L.D. (ſee Sarsaparilla); the "decoctum guaiaci," L.E.D. (ſee Guaiacum); and "aqua calcis compoſita," D. This compound lime-water is prepared by taking of raſpings of guaiacum wood, half a pound, liquorice root, ſliced and bruiſed, an ounce, ſaſſafras bark bruiſed, half an ounce, coriander-ſeeds, three drachms, and lime-water, ſix pints; and macerating without heat for two days, and ſtraining. Lewis. Woodville. Thomſon.

SASSANO, in *Geography*, a town of Naples, in Principato Citra; 11 miles N. of Policaſtro.

SASSARI, a city of the iſland of Sardinia, on the river Torres, about ſeven miles from the ſea: the ſee of an archbiſhop, and reſidence of the viceroy, containing 16 convents, and 27,000 inhabitants. In its vicinity are mines of gold and ſilver, for which reaſon it is ſometimes called "Logodari;" 88 miles N.N.W. of Cagliari. N. lat. 40° 45′. E. long. 8° 50′.

SASSE, in ſome of our ſtatutes, denotes a kind of weir, with flood-gates, commonly uſed in navigable rivers, for the damming and looſing the ſtream of water, as occaſion requires, for the better paſſing of boats and barges to and from places.

This, in the weſt of England, is called a *lock*, in the river Lee, a *turnpike*, and in other places, a *ſluice*.

SASSELO, in *Geography*, a town of Genoa; 10 miles N. of Savona.

SASSELOT, a town of France, in the department of the Lower Seine; 6 miles W. of Ceny.

SASSENAGE, a town of France, in the department of the Iſere, celebrated for its cheeſe; 3 miles E. of Grenoble.

SASSENBERG, a town of Germany, and capital of a bailiwick, in the principality of Munſter, about two miles from the Embs; 12 miles E. of Munſter.

Sassenberg. See Sachsenberg.

SASSENFURTH, a town of Bavaria, in the biſhopric of Bamberg; 5 miles N.W. of Forcheim.

SASSO-FERRATO, whoſe real name was Giovanni Batista Salvi, in *Biography*, was a native of the territory of Urbino, and born in a caſtle, from whence he was named Saſſo-ferrato, in 1605. He was the ſon of an obſcure painter, who ſent him, when young, to ſtudy at Rome. He afterwards viſited Naples and other places; and having no great power of genius, amuſed himſelf by imitating in turn different maſters. His compoſitions were confined to Madonnas and Infants, and are in general but heavily executed. His moſt conſiderable work is an altar-piece, painted for the church of St. Sabina, at Rome, repreſenting the Virgin and Child, with St. Catharine and St. Dominic. He died at Rome in 1685.

Sasso-ferrato, in *Geography*, a town of the marquiſate of Ancona; 16 miles S.W. of Jeſi.

SASSOLIN, in *Mineralogy*, concrete native boracic acid, ſo called from having been found on the banks of a hot ſpring at Saſſo, near Sienna, in Italy. It is alſo found in ſome of the ſmall lakes in Tuſcany. Saſſolin is compoſed of minute brilliant ſcales, of a pearly-white colour. The taſte is ſlightly acid, and ſomewhat bitter: it is eaſily fuſible by the blowpipe. It is alſo mixt with the ſoil that ſurrounds theſe lakes, and preſents itſelf in the form of ſtalactites, ſoft and ſoapy to the touch. The white colour is ſometimes ſpotted with yellow. The lakes which furniſh this acid diſengage an abundant quantity of gas with a hiſſing noiſe. The nature of the gas has not been aſcertained.

SASSONE, in *Biography*. See Hasse.

SASSOROLLA, in *Ornithology*, the name of a peculiar ſpecies of pigeon, called by ſome *columba rupicola*, or the rock pigeon.

It is of the ſhape of the common pigeon, but ſmaller, and has red legs, and a grey variegated back. It ſeems the ſame with the livia of other authors.

SASSUM, in *Geography*, a town of Hungary; 20 miles N.W. of Podolicz.

SASSUOLO, a town of Italy, in the department of the Panaro, on the Secchia, with a caſtle. At the diſtance of two miles is an aperture in the earth, called "La Salſa," which frequently diſcharges ſmoke, flame, and aſhes, with a ſulphureous ſmell, to the height of 120 feet, eſpecially in the ſpring and autumn, attended occaſionally with great noiſe. The whole hill is ſterile, and when the eruption begins, the petroleum wells become muddy. Many petrified ſubſtances are found here; 7 miles S.S.W. of Modena.

SASTAGO, a town of Spain, in Aragon; 13 miles N. of Hueſca.

SASTENALA, a town of Sweden, in the government of Abo; 25 miles N. of Biorneborg.

SASTY, a town of Hindooſtan, in Bahar; 33 miles S.S.W. of Patna.

SASURA, in *Ancient Geography*, a town of Africa Propria, according to Ptolemy; ſituated to the ſouth of Carthage, between the river Bagrada and Triton.

SASUTZA, in *Geography*, a river of Walachia, which runs into the Syl, three miles S. of Tergoſyl.

SASWA, a town of Hindooſtan, in Rohilcund; 20 miles W.N.W. of Budayoon.

SASZINKOWITZ. See Sosznitzowitz.

SATABAGO, a province of Aſiatic Turkey, on the borders of the river Kur, S. of Imiretta; generally fertile, and producing principally wine, honey, and cattle.

SATADOO, a town of Africa, and capital of a country of the ſame name, on the E. ſide of the Falema, and S.W. of the kingdom of Bambouk. N. lat. 12° 30′. W. long. 9° 52′.

SATAFI, Kasbaite, in *Ancient Geography*, an ancient town in the interior of the eaſtern part of Mauritania Cæſarienſis, towards the ſource of the river Ampſaga, according to the Itinerary of Antonine.

SATALA, a town of Aſia, on the banks of the Euphrates, on the frontiers of Cappadocia, Pontus, and Armenia.—Alſo, a town of Aſia, in the interior of Leſſer Armenia, according to Ptolemy. Juſtinian repaired it, and built a fortreſs in its environs.

SATALDERE, a river of Natolia, which runs into the ſea of Marmora; 8 miles W. of Artaki.

SATALIA, or Antalia, a ſea-port town of Aſiatic Turkey, in Caramania, at the bottom of a gulf of the Mediterranean, to which it gives name. It is large, and contains three towns: the environs are very fertile; and the citrons and oranges are very fine. The inhabitants carry on a conſiderable trade in wool, goats' hair, agaric, tragacanth, opium, and bees' wax. The navigation of the gulf is dangerous; 134 miles S. of Kiutaja. N. lat. 37°. E. long. 30° 20′.

SATALY, a town of Samogitia; 18 miles N.W. of Birza.

SATAN, in *Sacred Criticiſm*, a Hebrew word, which ſignifies an adverſary, perſecutor, or accuſer. See Devil.

SATANOOR, in *Geography*, a town of Hindooſtan, in Myſore; 30 miles E. of Seringapatam.

SATANOW, a town of Poland, in the palatinate of Podolia; 40 miles N. of Kaminiec.

SATAPA, a town on the S.E. coaſt of the iſland of Borneo; 69 miles E.N.E. of Banjer-Maſſin.

SATAPHARA, in *Ancient Geography*, a town of Aſia, in the Greater Armenia. Ptolemy.

SATARCHA, Tcheterlick, a town of the Tauric Cherſoneſus, in the northern part of the peninſula, S.E. of Taphra.

SATASHYGUR, in *Geography*, a town of Hindooſtan, in the province of Benares; 12 miles S.W. of Chunar.

SATEBA, a town of Mexico, in New Biſcay; 60 miles N.W. of Parral.

SATELLITE, Satelles, *Guard*, a perſon attending on another, either for his ſafety, or to be ready to execute his pleaſure.

Among the eaſtern emperors, ſatellite originally expreſſed the dignity, or office, of captain of the life-guard.

The term was afterwards applied to the vaſſals of lords; and afterwards to ſuch as held fees, called *ſergeanties*. See Sergeanty.

Satellites, in *Anatomy*, the veins which accompany the arteries. See Vein.

Satellites, in *Aſtronomy*, certain ſecondary planets, moving round the other planets, as the moon does round the earth; they are thus called, becauſe always found attending them, from riſing to ſetting, and making the tour of the ſun together with them.

The ſatellites move round their primary planets, as their centres, by the ſame laws as thoſe primary ones do round their centre the ſun. For the phyſical cauſe of their motions, ſee Gravity. See alſo *Secondary* Planets.

The words moon and ſatellite are ſometimes uſed indifferently; and thus we ſay, either Jupiter's moons, or Jupiter's ſatellites; but, ordinarily, we diſtinguiſh; reſtraining the term moon to the earth's ſatellite; and ſatellite to the little moons more lately diſcovered about Jupiter, Saturn, and the Georgium Sidus, by the aſſiſtance of the teleſcope, which is neceſſary to render moſt of them viſible. See Moon, and Planet.

We do not know of any ſatellites beſides thoſe juſt mentioned; what farther diſcoveries may be made by improving the magnifying powers of teleſcopes it is impoſſible to ſay.

Satellites *of Jupiter* are four little ſecondary planets, ſome bigger and ſome leſs than our earth, performing their revolutions about Jupiter, as that planet does round about the ſun.

Simon Marius, mathematician of the elector of Brandenburg, about the end of November 1609, obſerved three little ſtars moving round Jupiter's body, and proceeding along with him; and in January 1610, he found a fourth. In January 1610, Galileo alſo obſerved the ſame in Italy, and the ſame year he publiſhed his obſervations; from which time commenced the obſervation of the circumjovial ſatellites.

Galileo, in honour of his patron, firſt called them *aſtra Medicæa*, Medicæan ſtars; Marius, the firſt diſcoverer, called that next Jupiter, *Mercurius Jovialis*, Jupiter's Mercury; the ſecond, *Venus Jovialis*, Jupiter's Venus; the third, *Jupiter Jovialis;* and the fourth, *Saturnus Jovialis*, Jupiter's Saturn.

Indeed, Antony Maria Schyrlæus de Rheita, a Capuchin of Cologne, imagined, that, beſides the four known ſatellites of Jupiter, he had diſcovered five more, on the 29th of December, anno 1642, and, in honour of Urban VIII., the pope then reigning, he denominated them *Sidera Urbanoctaviana.* But, upon Nauda's communicating the obſervation to Gaſſendus, who had obſerved Jupiter on the ſame day, he ſoon perceived that the monk had miſtaken five fixed ſtars, in the effuſion of the water of Aquarius, marked in Tycho's catalogue 24, 25, 26, 27, and 28, for ſatellites of Jupiter; whence it is no wonder they ſhould appear to the diſcoverer to move a contrary way to that of the reſt; *viz.* from weſt to eaſt. See Epiſt. Gaſſend. ad Gab. Naud. de Novem Stellis circa Jovem viſis.

The diſcovery of theſe ſatellites was, in its conſequences, of great importance, as by means of their eclipſes, it afforded a ready method of finding the longitudes of places on earth; and as the eclipſes led M. Roemer to the diſcovery of the progreſſive motion of light, and Dr. Bradley was thus enabled to ſolve an apparent motion of the fixed ſtars, for which he could not otherwiſe account. See LONGITUDE, and LIGHT. See alſo the ſequel of this article.

Theſe ſatellites of Jupiter may generally be ſeen with a teleſcope which magnifies thirty times; but when the air is uncommonly pure, the third and fourth may ſometimes be ſeen with the naked eye. When viewed through a common teleſcope, they appear to be of different magnitudes; but their diameters are ſo extremely ſmall, that an accurate meaſure of them cannot be obtained by a micrometer. But a method of eſtimating their relative magnitude is furniſhed by their eclipſes, the larger ſatellite taking a longer time to enter into the ſhadow than the ſmaller. Thus Bailly (Mem. Acad. 1771) determined their diameters, as in the annexed table of their elements. This method Dr. Herſchel pronounces to be very fallacious, and that it ought not to be uſed. (See JUPITER.) The other meaſures that follow them in the ſame table were deduced by La Place from the maſſes of the ſatellites, and may be conſidered as very accurate. (See Mecanique Celeſte, tom. iv.) According to Dr. Herſchel (Phil. Tranſ. 1797, vol. lxxxvii. part ii.) the third ſatellite of Jupiter is conſiderably larger than the reſt; the firſt is a little larger than the ſecond, and near the ſize of the fourth; and the ſecond is a little ſmaller than the firſt and fourth, or the ſmalleſt of the four. Hence he expreſſed their relative magnitude by the following numbers: $3 - \genfrac{}{}{0pt}{}{1}{4} - 2$.

SATELLITES *of Jupiter, Rotation of.* M. Caſſini concluded that the ſatellites revolved round their axes, as in their paſſage over Jupiter's diſc they were ſometimes viſible, and at other times inviſible; hence he conjectured, that they had ſpots on one ſide and not on the other, and that they became viſible in their paſſage when the ſpots were next to the earth. At different times alſo they appear of different magnitudes and of different brightneſs. For an account of their different magnitudes, as obſerved by Dr. Herſchel with different magnifying powers, we refer to his paper in the Phil. Tranſ. *ubi ſupra.* Mr. Pound obſerved, that they appear more luminous at one time than another, and hence he concluded that they revolve about their axes; and from a greater variety and number of ſimilar obſervations, Dr. Herſchel has diſcovered that they all revolve about their axes in the times in which they reſpectively revolve about Jupiter. The firſt ſatellite (ſays this excellent aſtronomer) appears evidently to have a rotation upon its axis, that agrees with its revolution in its orbit. It cannot be ſuppoſed that, in the courſe of 470 revolutions, all the bright obſervations could have ranged themſelves in one-half of the orbit, while the fainter ones were withdrawn to the other. This ſatellite appears in the middle of the duration of its brightneſs, when it is nearly half-way between its greateſt eaſtern elongation, in the neareſt part of its orbit; or when advancing towards its conjunction: this ſatellite, therefore, revolves on its axis in $1^d\ 18^h\ 28'.6$. The ſecond ſatellite, though much leſs ſubject to change, on account, as we may ſuppoſe, of having only a ſmall region on its body, which reflects leſs light than the reſt, has, nevertheleſs, its rotation directed by the ſame law with the firſt. The brighteſt ſide of this ſatellite is turned towards us when it is between the greateſt eaſtern elongation and the conjunction. It revolves, conſequently, on its axis in $3^d\ 13^h\ 17'.9$. The third ſatellite ſuffers but little diminution of its brightneſs, and is in full luſtre at the time of both its elongations. It revolves on its axis in $7^d\ 3^h\ 59'.6$. The fourth ſatellite preſents us with a few bright views when it is going to its oppoſition, and on its return towards the greateſt elongation; but otherwiſe it is generally overcaſt. Its colour alſo is conſiderably different from that of the other three; and it revolves on its axis in $16^d\ 18^h\ 5'.1$. Maraldi had formerly deduced the ſame reſult for the fourth ſatellite, by obſerving the period of its variations. (See JUPITER.) The colours of the ſatellites, deduced from all the author's obſervations, are as follow: The firſt is white; but ſometimes more intenſely than at other times. The ſecond is white, blueiſh, and aſh-coloured. The third is always white; but the colour is of different intenſity in different ſituations. The fourth is duſky, dingy, inclining to orange, reddiſh, and ruſty at different times; and theſe tints may induce us to ſurmiſe that this ſatellite has a conſiderable atmoſphere.

SATELLITES, *Periods, Diſtances, &c. of the.*—Their periods, or revolutions, are found from their conjunctions with Jupiter, after the ſame manner as thoſe of the primary planets are found from their oppoſitions to the ſun: and as it is in the primary planets, with regard to the ſun, ſo it is in the ſatellites, with regard to their primaries; the ſquares of the periodical times are in a triplicate ratio of their diſtances from their centres reſpectively. For determining the diſtances by obſervation they are meaſured with a micrometer, in ſemidiameters of Jupiter.

In order to obtain the mean times of their *ſynodic* revolutions, or of their revolutions with reſpect to the ſun, obſerve, when Jupiter is in oppoſition, the paſſage of a ſatellite over the body of Jupiter, and note the time when it appears to be exactly in conjunction with the centre of Jupiter, and that will be the time of conjunction with the ſun. After a conſiderable interval of time, repeat the ſame obſervation, Jupiter being in oppoſition, and divide the interval of time by the number of conjunctions with the ſun in that interval, and you get the time of a ſynodic revolution of the ſatellite. This is the revolution of principal conſideration, as it is that on which the eclipſes depend. But this, on account of the equation of Jupiter's orbit, will not give the *mean* time of a ſynodic revolution, unleſs Jupiter was at the ſame point of its orbit at both obſervations: otherwiſe we muſt proceed thus, according to the directions given by Mr. Vince in his "Elements of Aſtronomy," p. 168.

Let A I P R (*Plate* XX. *Aſtronomy, fig.* 1.) be the orbit of Jupiter, S the ſun in one focus, and F the other focus; and as the excentricity of the orbit is ſmall, the motion about F may be conſidered as uniform. Let Jupiter be in its aphelion at A in oppoſition to the earth at T; and L a ſatellite in conjunction; and let I be the place of Jupiter at its next oppoſition with the earth at D, and the ſatellite in conjunction at G. Then, if the ſatellite had been at O, it would have been in conjunction with F, or in mean conjunction; therefore it muſt deſcribe the angle F I S before it comes to the mean conjunction, which angle is the equation of the orbit, according to the *ſimple elliptic hypotheſis*, which may be here uſed, as the excentricity of the orbit is but ſmall; the angle F I S, therefore, meaſures the difference between the mean *ſynodic* revolutions in reſpect to F, and the ſynodic revolutions in reſpect to the ſun S. If, therefore, n be the number of revolutions which the ſatellite has made in reſpect to the ſun, $n \times 360^\circ - \mathrm{SIF} =$ the revolutions in reſpect to F; hence, $n \times 360^\circ - \mathrm{SIF} : 360^\circ ::$ the time between the two oppoſitions : the time of a *mean* ſynodic revolution about the ſun.

As the ſatellite is at O at the mean conjunction, and at G when in conjunction with the ſun, it is manifeſt, that if the angle F I S continued the ſame, the time of a revolution in reſpect to S would be equal to the time in reſpect to F, or to the time of a mean ſynodic revolution; hence, the difference between the times of any two ſucceſſive revolutions in reſpect to S and F reſpectively, is as the variation of the angle F I S, or variation of the equation of the orbit. When Jupiter is at A, the equation vaniſhes, and the times of the two conjunctions at F and S coincide. When Jupiter comes to I, the mean conjunction at O happens after the true conjunction at G, by the time of deſcribing the angle S I F, the equation of Jupiter's orbit. This is what aſtronomers call the *firſt* inequality; and by this inequality of the intervals of the times of the true conjunctions, the times of the eclipſes of the ſatellites are affected.

But as a conjunction of the ſatellite may not often happen exactly at the time when Jupiter is in oppoſition, the time of a mean revolution may be found, when he is out of oppoſition, thus. Let H be the earth when the ſatellite is at Z in conjunction with Jupiter at R; and let V be another poſition of the earth when the ſatellite is at C in conjunction with Jupiter at I; and produce R H, I V, to meet in M; then the motion of Jupiter about the earth, in this interval, is the ſame as if the earth had been fixed at M. Now the difference between the true and mean motions of Jupiter is $\mathrm{RFI} - \mathrm{RMI} = \mathrm{FIM} + \mathrm{FRM}$, which ſhews how much the number of mean revolutions, in reſpect to F, exceeds the ſame number of apparent revolutions in reſpect to the earth; hence, $n \times 360^\circ - \mathrm{FIM} - \mathrm{FRM} : 360^\circ ::$ the time between the obſervations : the time of a mean ſynodic revolution of the ſatellite. If C and Z lie on the other ſide of O and Y, the angles F I M, F R M, muſt be added to $n \times 360^\circ$; and if one lie on one ſide, and the other on the other, one muſt be added and the other ſubtracted, according to the circumſtances.

As it is difficult, from the great brightneſs of Jupiter, to determine accurately the time when the ſatellite is in conjunction with the centre of Jupiter as it paſſes over its diſc, the time of conjunction is determined by obſerving its entrance upon the diſc, and its going off; but as this cannot be determined with ſo much accuracy as the times of immerſion into the ſhadow of Jupiter, and emerſion from it, the time of conjunction can be moſt accurately determined from the eclipſes.

Let I (*Plate* XX. *fig.* 2.) be the centre of Jupiter's ſhadow F G, N *m t* the orbit of a ſatellite, N the node of the ſatellite's orbit upon the orbit of Jupiter; draw I *v* perpendicular to I N, and I *c* to N *t*; and when the ſatellite comes to *v*, it is in conjunction with the ſun. Now both the immerſion at *m*, and emerſion at *t* of the ſecond, third, and fourth ſatellites may ſometimes be obſerved, the middle point of time between which, gives the time of the middle of the eclipſe at *c*; and by calculating *c v*, from knowing the angle N and N I, we get the time of conjunction at *v*. If both the immerſion and emerſion cannot be obſerved, take the time of either, and after a very long interval of time, when an eclipſe happens as nearly as poſſible in the ſame ſituation in reſpect to the node, take the time of the ſame phenomenon, and from the interval of theſe times you will get the time of a revolution. By theſe different methods, M. Caſſini found the times of the mean *ſynodic* revolutions of the four ſatellites to be as follows:

Firſt.	Second.	Third.	Fourth.
$1^d\ 18^h\ 28'\ 36''$	$3^d\ 13^h\ 17'\ 54''$	$7^d\ 3^h\ 59'\ 36''$	$16^d\ 18^h\ 5'\ 7''$

Hence it appears, that 247 revolutions of the firſt ſatellite are performed in $437^h\ 3^d\ 44'$; 123 revolutions of the ſecond, in $437^d\ 3^h\ 41'$; 61 revolutions of the third, in $437^d\ 3^h\ 35'$; and 26 revolutions of the fourth, in $435^d\ 14^h\ 13'$. Therefore, after an interval of 437 days, the three firſt ſatellites return to their relative ſituations within nine minutes.

In the return of the ſatellites to their mean conjunction, they deſcribe a revolution in their orbits, together with the mean angle a° deſcribed by Jupiter in that time; therefore, to get the *periodic* time of each, we muſt ſay, $360^\circ + a^\circ : 360^\circ ::$ time of a ſynodic revolution : the time of a periodic revolution; hence, the *periodic* times of each are;

Firſt.	Second.	Third.	Fourth.
$1^d\ 18^h\ 27'\ 33''$	$3^d\ 13^h\ 13'\ 42''$	$7^d\ 3^h\ 42'\ 33''$	$16^d\ 16^h\ 32'\ 8''$

The diſtances of the ſatellites from the centre of Jupiter may be found at the time of their greateſt elongations, by meaſuring with a micrometer, at that time, their diſtances from the centre of Jupiter, and alſo the diameter of Jupiter, by which you get their diſtances in terms of the diameter. Or it may be done thus. When a ſatellite paſſes over the middle of the diſc of Jupiter, obſerve the whole time of its paſſage, and then, the time of a revolution : the time of its paſſage over the diſc :: 360° : the arc of its orbit correſponding to the time of its paſſage over the diſc; hence, the ſine of half that arc : radius :: the ſemidiameter of Jupiter : the diſtance of the ſatellite. Thus M. Caſſini determined their diſtances in terms of the ſemidiameter of Jupiter to be, of the firſt, 5.67; of the ſecond, 9; of the third, 14.38; and of the fourth, 25.3.

Or, having determined the periodic times, and the diſtance of one ſatellite, the diſtances of the other may be found from the proportion of the ſquares of the periodic times being as the cubes of their diſtances. Mr. Pound, with a teleſcope 15 feet long, found, at the mean diſtance of Jupiter from the earth, the greateſt diſtance of the fourth ſatellite to be $8'\ 16''$; and by a teleſcope 123 feet long, he found the greateſt diſtance of the third to be $4'\ 42''$; hence, the greateſt diſtance of the ſecond appears to be $2'\ 56''\ 47'''$, and of the firſt, $1'\ 51''\ 6'''$. Now the diameter of Jupiter, at its mean diſtance, was determined, by ſir I. Newton, to be $37\frac{1}{4}''$; hence the diſtances of the ſatellites, in terms of the ſemidiameter of Jupiter, come out 5.965; 9.494; 15.141; and 26.63 reſpectively. Prin. Math. lib. ter. Phœn.

Hence, by knowing the greateſt elongations of the ſatellites in minutes and ſeconds, we get their diſtances from the centre of Jupiter, compared with the mean diſtance of Jupiter from the earth, by ſaying, the ſine of the greateſt elongation of the ſatellite : radius :: the diſtance of the ſatellite from Jupiter : the mean diſtance of Jupiter from the earth.

SATELLITES *of Jupiter*, *Eclipſes of.* The ſatellites of Jupiter, in going from the weſt to the eaſt, are eclipſed by the ſhadow of Jupiter, and as they go from eaſt to weſt, they are obſerved to paſs over its diſc; hence, they revolve about Jupiter, and in the ſame direction as Jupiter revolves about the ſun. The three firſt ſatellites are always eclipſed, when they are in oppoſition to the ſun, and the duration of the eclipſes are found to be different at different times; but ſometimes the fourth ſatellite paſſes through oppoſition without being eclipſed. Hence it appears, that the planes of the orbits do not coincide with the plane of Jupiter's orbit, for, in that caſe, they would always paſs through the centre of Jupiter's ſhadow, and there would always be an eclipſe, and of the ſame, or very nearly the ſame, duration, at every oppoſition to the ſun. As the planes of the orbits which they deſcribe ſometimes paſs through the eye, they will then appear to deſcribe ſtraight lines paſſing through the centre of Jupiter; but at all other times they will appear to deſcribe ellipſes, of which Jupiter is the centre.

Let S (*Plate* XX. *Aſtron. fig.* 3.) be the ſun, E F the orbit of the earth, I Jupiter, *a b c* the orbit of one of its ſatellites. When the earth is at E before the oppoſition of Jupiter, the ſpectator will ſee the immerſion at *a*; but if it be the firſt ſatellite, upon account of its nearneſs to Jupiter, the emerſion is never viſible, the ſatellite being then always behind the body of Jupiter: the other three ſatellites *may* have both their immerſions and emerſions viſible; but this will depend upon the poſition of the earth. When the earth comes to F after oppoſition, we ſhall then ſee the emerſion of the firſt, but can then never ſee the immerſion; but we *may* ſee both the emerſion and immerſion of the other three. Draw E I *r*; then *s r*, the diſtance of the centre of the ſhadow from the centre of Jupiter, referred to the orbit of the ſatellite, is meaſured at Jupiter by *s r*, or the angle *s* I *r*, or the angle E I S. The ſatellite may be hidden behind the body at *r* without being eclipſed, which is called an *occultation*. When the earth is at E, the conjunction of the ſatellite happens *later* at the earth than at the ſun; but when the earth is at F, it happens *ſooner*.

The diameter of the ſhadow of Jupiter, at the diſtance of any of the ſatellites, is beſt found by obſerving the time of an eclipſe when it happens at the node, at which time the ſatellite paſſes through the centre of the ſhadow; for the time of a ſynodic revolution : the time the ſatellite is paſſing through the centre of the ſhadow :: 360° : the diameter of the ſhadow in degrees. But when the firſt and ſecond ſatellites are in the nodes, the immerſion and emerſion cannot both be ſeen. Aſtronomers, therefore, compare the immerſions ſome days *before* the oppoſition of Jupiter with the emerſions ſome days *after*, and then, knowing how many ſynodic revolutions have been made, they get the time of the tranſit through the ſhadow, and thence the correſponding degrees. But on account of the excentricity of ſome of the orbits, the times of the central tranſit muſt vary; for example, the ſecond ſatellite is ſometimes found to be $2^h\ 50'$ in paſſing through the centre of the ſhadow, and ſometimes $2^h\ 54'$; this indicates an excentricity.

The duration of the eclipſes being very unequal, ſhews that the orbits are inclined to the orbit of Jupiter: ſometimes the fourth ſatellite paſſes through oppoſition without ſuffering an eclipſe. The duration of the eclipſes muſt depend upon the ſituation of the nodes in reſpect to the ſun, juſt the ſame as in a lunar eclipſe; when the line of the nodes paſſes through the ſun, the ſatellite will paſs through the centre of the ſhadow; but as Jupiter revolves about the ſun, the line of the nodes will be carried out of conjunction with the ſun, and the time of the eclipſe will be ſhortened, as the ſatellite will then deſcribe only a chord of a ſection of the ſhadow inſtead of the diameter. See Vince's Elements of Aſtronomy.

The following table, extracted from Brewſter's edition of Ferguſon's Aſtronomy, vol. ii. (with the addition of the diſtances in miles, and of the angles under which their orbits are ſeen from the earth, &c.) contains a full view of the elements of the ſatellites of Jupiter, as deduced from the theory of La Place, and from the moſt recent obſervations of modern aſtronomers.

	Firſt Satellite.	Second Satellite.	Third Satellite.	Fourth Satellite.	
Periodical revolution, Do. do. Synodical revolution,	$1^d\ 18^h\ 27'\ 33''$ $1^d\ 769137787$ $1^d\ 18^h\ 28'35''.947909$	$3^d\ 13^h\ 13'\ 42''$ 3.551181017 $3^d\ 13^h\ 17'\ 53''.74893$	$7^d\ 3^h\ 42'\ 33''$ 7.154552808 $7^d\ 3^h\ 59'\ 35''.86754$	$16^h\ 16^d\ 32'\ 8''$ 16.689019396 $16^d\ 18^h\ 5'\ 7''.09174$	According to Wargentin. Uſed by La Place.
Motion in 100 Julian years,	Circles. $20655\ 7^s\ 24^\circ\ 47'\ 45''$ $20645\ 7^s\ 25^\circ\ 28'\ 11''$	Circles. $10285\ 3^s\ 22^\circ\ 31'\ 40''$ $10285\ 3^s\ 23^\circ\ 13'\ 53''$	Circles. $5105\ 1^s\ 21^\circ\ 19'\ 37''$ $5105\ 1^s\ 22^\circ\ 6'\ 49''$	Circles. $2188\ 6^s\ 24^\circ\ 50'\ 0''$ $2188\ 6^s\ 24^\circ\ 42'\ 49''$	According to Wargentin. According to De Lambre.
Epoch for 1760, Epoch for the midnight, beginning Jan. 1ſt, 1750,	$6^s\ 26^\circ\ 18'\ 24''$ 0 15 15 45	$4^s\ 17^\circ\ 4'\ 48''$ 10 11 26 49	$6^s\ 12^\circ\ 27'\ 43''$ 0 10 16 20	$9^s\ 7^\circ\ 27'\ 4''$ 2 12 33 4	According to Wargentin. According to De Lambre.
Daily motion,	$6^s\ 23^\circ\ 29'\ 20''\ 18\frac{1}{2}'''$	$3^s\ 11^\circ\ 22'\ 29''\ 4'''\frac{7}{8}$	$1^s\ 20^\circ\ 19'\ 3''\ 27'''\frac{3}{10}$	$0^s\ 21^\circ\ 34'\ 10''\ 0'''$	According to Wargentin.
Diſtance of each ſatellite, the radius of Jupiter being unity,	5.965 5.67 5.698491	9.494 9.000 9.066458	15.141 14.38 14.461893	26.630 25.3 25.43590	According to Newton. According to Caſſini. Deduced by La Place from Kepler's law.
Diſtance in miles, Jupiter's radius being 44585 miles,	265949.525 252796.95 254067.221235	423289.99 401265 404228.02993	675061.485 641132.3 644781.499405	1187298.55 1128000.5 1134063.60150	
Apparent mean diſtance,	$1'\ 51''$	$2'\ 57''$	$4'\ 42''$	$8'\ 16''$	According to Wargentin.
Inclination of their orbits, Mean inclination,	$3^\circ\ 18'\ 38$ $3^\circ\ 18'\ 38$	$3^\circ\ 48'\ 0$ 3 18 0	$3^\circ\ 25'\ 57$ $3^\circ\ 13'\ 58$	$2^\circ\ 36'\ 0$ $2^\circ\ 36'\ 0$	According to Maraldi. According to Wargentin.
Diameter of the ſatellites, as ſeen from the centre of Jupiter at their mean diſtance,	$60'\ 20''$ $1820''83464$	$29'\ 42''$ $1298''36520$	$22'\ 28''$ $1271''19456$	$9'\ 39''$ $566''68896$	According to M. Bailly. According to La Place's theory,
Radius of the ſhadow, in degrees of the orbits of the ſatellites,	$9^\circ\ 35'\ 37''$ $10^\circ\ 3'\ 36''$	$6^\circ\ 1'\ 33''$ $6^\circ\ 17'\ 10''$	$3^\circ\ 43'\ 58''$ $3^\circ\ 55'\ 8''$	$20^\circ\ 8'\ 2''$ $2^\circ\ 12'\ 26''$	According to Wargentin. According to La Place's theory.
Semiduration of eclipſes,	$1^h\ 7'\ 33''2$ $1^h\ 10\ 53.45$	$1^h\ 25'\ 39''4$ $1^h\ 28'\ 57''1$	$1^h\ 46'\ 20''3$ $1^h\ 50'\ 9''1$	$2^h\ 21'\ 45''4$ $2^h\ 27'\ 13''1$	According to De Lambre. According to La Place's theory.
Time which each ſatellite takes to enter the ſhadow,	$220''.01036$	$306''.20730$	$604''.50604$	$630''.00762$	According to La Place.
Longitude of the node, 1760, Annual motion of the node,	$10^s\ 14^\circ\ 30'$	$10^s\ 13^\circ\ 45'$ $2'\ 3''$	$10^s\ 14^\circ\ 24'$	$10^s\ 16^\circ\ 39'$ $4'\ 19''$	According to Wargentin.
Maſſes of the ſatellites, that of Jupiter being 1,	0.0000173281	0.0000232355	0.0000884972	0.0000426591	Calculated by La Place.
Angles under which the orbits of the ſatellites are ſeen from the earth, at its mean diſtance from Jupiter,	$3'\ 55''$	$6'\ 14''$	$9'\ 58''$	$17'\ 30''$	

The following reſults, obtained by La Place from a compariſon of his formulæ, with obſervations, are annexed by Dr. Brewſter to his account of Jupiter's ſatellites.

He found that the orbit of the firſt ſatellite moves upon a fixed plane, which paſſes conſtantly between the equator and the orbit of Jupiter, by the mutual interſection of theſe two laſt planes, whoſe reſpective inclination is 3° 5′ 30″, according to obſervation. The inclination of this fixed plane upon the equator of Jupiter, is only 6½ ſeconds by the theory. The inclination of the orbit of the ſatellite to its fixed plane is equally ſmall, ſo that we may conceive the firſt ſatellite as in motion upon a plane paſſing through the equator of Jupiter. Although no excentricity has yet been detected in the orbit of this ſatellite, yet it partakes a little of the excentricities of the orbits of the third and fourth ſatellites; for in conſequence of the mutual action of all theſe bodies, the excentricity belonging to each extends itſelf to all the reſt in proportion to their proximity to the moſt excentric orbit.

The orbit of the ſecond ſatellite moves upon a fixed plane, which paſſes conſtantly between the equator and the orbit of Jupiter, and which is inclined to the equator of Jupiter 65″.1, and to the orbit of the ſatellite 27′ 49″.2. The nodes of this ſatellite have upon this fixed plane, a tropical retrograde motion, whoſe period is 29 years, 9142. The excentricity of this ſatellite is not yet determined, but, like the firſt, it participates in the excentricities of the ſecond and third.

The orbit of the third ſatellite moves upon a fixed plane, which paſſes conſtantly between the equator and orbit of Jupiter, and which is inclined to the equator of Jupiter 30° 5′ 1″.6, and to the orbit of the ſatellite 12′ 20″. The nodes of this ſatellite have upon this plane a tropical retrograde motion, whoſe period is 141 years, 739. Aſtronomers had ſuppoſed that the orbits of the three firſt ſatellites moved upon the equator of Jupiter; but they found that this equator had a ſmall inclination upon the orbit of the planet, by the eclipſes of the three firſt ſatellites. This difference, of which they did not know the cauſe, La Place has found to ariſe from the motion of the orbits of theſe ſatellites upon planes inclined to the equator, at different angles, increaſing with their diſtance from the planet. He obtained alſo a ſimilar reſult for our moon. The excentricity of the orbit of the third ſatellite preſents very ſingular anomalies, of which La Place has diſcovered the cauſe.

The fourth ſatellite moves upon a fixed plane, inclined 24′ 33″ to the equator of Jupiter, and paſſing by the line of the nodes of this equator, between the latter plane and that of the orbit of the planet. The orbit of the ſatellite is inclined 14′ 58″ to this fixed plane; and its nodes have upon this plane a tropical retrograde motion, whoſe period is 531 years. In conſequence of this motion, the inclination of the orbit of the fourth ſatellite to the orbit of Jupiter is perpetually varying. The excentricity of its orbit is much greater than that of the orbits of any of the other ſatellites.

The poſition of Jupiter's ſatellites with reſpect to the planet, and the figure of their orbits, as ſeen from the earth, may be eaſily found, for any given time, from tables that are publiſhed in the Tables de Berlin. Their relative poſition is given in the Nautical Almanac, for every day when Jupiter is at ſuch a diſtance from the ſun that the ſatellites can be readily ſeen; or it may be eaſily found, by an inſtrument called a *jovilabe*, which was firſt conſtructed by Flamſtead, and afterwards by Caſſini. Flamſtead's jovilabe is deſcribed in the Phil. Tranſ. N° 178, and in Whiſton's Longitude Diſcovered, &c. A deſcription of Caſſini's may be found in Weidler's Explicatio Jovilabii Caſſiniani, 1727, or in La Lande's Aſtronomy, tom. iii. 197.

As the eclipſes of Jupiter's ſatellites afford the readieſt method of determining the longitude of places at land, the editor avails himſelf of the liberal permiſſion granted to him by profeſſor Vince, by annexing the following tables, with inſtructions for the uſe of them. In order to reduce them within the limits of the Cyclopædia, he has made ſome alteration in the arrangement, &c. ſuggeſted to him by an ingenious friend.

The profeſſor appriſes the obſerver, that on account of the uncertainty of the theory of the ſatellites, he muſt be ſettled at his teleſcope a few minutes before the expected time of an immerſion; and if the longitude of the place be alſo uncertain, he muſt begin to look out proportionably ſooner. Thus, if the longitude be uncertain to two degrees, anſwering to eight minutes of time, he muſt begin to look out eight minutes ſooner than is mentioned above. However, when he has obſerved one eclipſe, and found the error of the tables, he may allow the ſame correction to the calculations of the Ephemeris for ſeveral months, which will advertiſe him very nearly of the time of expecting the eclipſes of the ſame ſatellite, and diſpenſe with his attending ſo long. Before the oppoſition of Jupiter to the ſun, the immerſions and emerſions happen on the weſt ſide of Jupiter, and after oppoſition, on the eaſt ſide; but if the teleſcope invert, the appearance will be the contrary. Before oppoſition, the immerſions only of the firſt ſatellite are viſible; and after oppoſition, the emerſions only. The ſame is generally the caſe with reſpect to the ſecond ſatellite; but both immerſion and emerſion are frequently obſerved in the two outer ſatellites.

When the obſerver is waiting for an emerſion, as ſoon as he ſuſpects that he ſees it, he ſhould look at his watch and note the ſecond, or begin to count the beats of the clock, till he is ſure that it is the ſatellite, and then look at the clock, and ſubtract the number of ſeconds which he has counted from the time then obſerved, and he will have the time of emerſion. If Jupiter be eight degrees above the horizon, and the ſun as much below, an eclipſe will be viſible; this may be determined near enough by a common globe.

The immerſion or emerſion of a ſatellite being obſerved according to apparent time, the longitude of the place from Greenwich is found, by taking the difference between that time and the time ſet down in the Nautical Almanac, which is calculated for apparent time.

Ex.—Suppoſe the emerſion of a ſatellite to have been obſerved at the Cape of Good Hope the 9th of May, 1767, at $10^h\ 46'\ 45''$ apparent time; now the time in the Nautical Almanac is $9^h\ 33'\ 12''$; the difference of which time is $1^h\ 13'\ 33''$, the longitude of the Cape eaſt of Greenwich in time, or 18° 23′ 15″.

But to find the longitude of a place from an obſervation of an eclipſe of a ſatellite, it is better to compare it with an obſervation made under ſome well-known meridian, than with the calculations in the Ephemeris, becauſe of the imperfection of the theory; but where a correſponding obſervation cannot be obtained, find what correction the calculations of the Ephemeris require, by the neareſt obſervations to the given time that can be obtained; and this correction, applied to the calculation of the given eclipſe in the Ephemeris, renders it almoſt equivalent to an actual obſervation. The obſerver muſt be careful to regulate his clock or watch by apparent time, or at leaſt to know the difference; this may be done, either by equal altitudes of the ſun, or of proper ſtars; or the latitude being known, from one altitude at a diſtance from the meridian, the time may be found.

In order the better to determine the difference of longitudes of two places from correſponding obſervations, the obſervers ſhould be furniſhed with the ſame kind of teleſcopes. For at an immerſion, as the ſatellite enters the ſhadow, it grows fainter and fainter, till at laſt the quantity of light is ſo ſmall that it becomes inviſible, even before it is immerſed in the ſhadow; the inſtant, therefore, that it becomes inviſible will depend upon the quantity of light which the teleſcope receives, and its magnifying power. The inſtant, therefore, of the diſappearance of a ſatellite will be later the better the teleſcope is, and the ſooner it will appear at its emerſion. Now the immerſion is the inſtant the ſatellite is wholly gotten into the ſhadow, and the emerſion is the inſtant before it begins to emerge from the ſhadow; if, therefore, two teleſcopes ſhew the diſappearance or appearance of the ſatellite at the ſame diſtance of time from the immerſion or emerſion, the difference of the times will be the ſame as the difference of the true times of their immerſions and emerſions, and therefore will ſhew the difference of longitudes accurately. But if the obſerved time at one place be compared with the computed time at another, then we muſt allow for the difference between the apparent and true times of immerſion or emerſion, in order to get the true time where the obſervation was made, to compare with the true time from computation at the other place. This difference may be found, by obſerving an eclipſe at any place whoſe longitude is known, and comparing it with the time by computation. Obſervers, therefore, ſhould ſettle the difference accurately by the mean of a great number of obſervations thus compared with the computation, by which means the longitude will be aſcertained to a much greater accuracy and certainty. After all this precaution, however, the different ſtates of the air at different times, and alſo the different ſtates of the eye, will introduce a ſmall degree of uncertainty; the latter caſe may perhaps, in a great meaſure, be obviated, if the obſerver will be careful to remove himſelf from all warmth and light for a little time before he makes the obſervation, that the eye may be reduced to a proper ſtate; which precaution the obſerver ſhould alſo attend to, when he ſettles the difference between the apparent and true times of immerſion and emerſion. Perhaps alſo the difference ariſing from the different ſtates of the air might, by proper obſervations, be aſcertained to a conſiderable degree of accuracy; and as this method of determining the longitude is, of all others, the moſt ready, no means ought to be left untried to reduce it to the greateſt certainty.

On the Conſtruction of the Epochs in the Tables for finding the Configurations.

The epoch of a ſatellite for any year is found from a conjunction of the ſatellite: this will be beſt explained by an example. The time of a mean conjunction of the firſt ſatellite in 1764, was January 1, $8^{h}\ 26'\ 47''$, as computed for the conſtruction of the tables; but this is not the true time of the mean conjunction, but it is that time diminiſhed by the ſum of the maxima of all the equations, except that ariſing from the equation of Jupiter's orbit, which ſum is $29'\ 22''$; add this therefore to the above time, and it gives January 1, $8^{h}\ 56'\ 9''$ for the true time of the mean conjunction, or the time when the mean place of the ſatellite upon its orbit was the ſame as the mean place of Jupiter in its orbit; but, by computation, the mean place of Jupiter at that time was $2^{s}\ 8^{\circ}\ 56'\ 41''$, this therefore is the mean place of the ſatellite at the ſame time; but the mean motion of the ſatellite in $1^{d}\ 8^{h}\ 56'\ 9''$ was $9^{s}\ 9^{\circ}\ 14'\ 10''$; ſubtract this therefore from $2^{s}\ 8^{\circ}\ 56'\ 41''$, and we have $4^{s}\ 29^{\circ}\ 42'\ 31''$ for the mean place of the ſatellite at the beginning of 1764, or the epoch for that year, at Paris. The conſtruction of the tables here explained, has been for the mean diſtance of Jupiter from the earth, that is, to repreſent the ſatellites as ſeen from that diſtance, becauſe we applied the equations of light, which reduces the time at the place where the earth is at the time of obſervation, to the time at which the ſame phenomenon of the ſatellite (its conjunction) would have appeared if the earth had been at its mean diſtance from Jupiter. As Greenwich is $9'\ 20''$ eaſt of the obſervatory at Paris, if $1^{\circ}\ 19'\ 8''$, the mean motion of the ſatellite for that time, be added to $4^{s}\ 29^{\circ}\ 42'\ 31''$, it gives $5^{s}\ 1^{\circ}\ 1'\ 39''$ for the epoch for Greenwich, the year at Greenwich beginning $9'\ 20''$ later than at Paris. But the epochs in theſe tables are for the *leaſt* diſtance of Jupiter from the earth, and conſequently they are found from the epochs at the *mean* diſtance, by adding to them the mean motions of the ſatellites for $10'\ 10''$, that being the time which light takes in paſſing over a ſpace equal to the difference between the leaſt and mean diſtances. For as any ſituations of the ſatellites appear $10'\ 10''$ ſooner at the leaſt than at the mean diſtance of Jupiter from the earth, at any point of time they muſt appear forwarder in their orbits at the former than at the latter diſtance by their motions in that time. Now the mean motion of the ſatellite in $10'\ 10''$ is $1^{\circ}\ 26'\ 12''$; hence the epoch for 1764, for the leaſt diſtance of Jupiter, is $5^{s}\ 2^{\circ}\ 27'\ 51''$: the tables which are here given were conſtructed from other obſervations. Having determined the epoch for any one year, the epochs for the following years are found by continually adding to it the mean motions for a year, as will be explained hereafter, and the epochs for the preceding years are found by ſubtraction: thus we continue the tables as far as we pleaſe.

The firſt table contains the epochs of the ſatellites at the beginning of the year, that is, on December 31ſt of the preceding year by the civil account, at twelve o'clock at noon, mean time; except on leap-year, in which the place is put down for January 1, at twelve o'clock at noon, mean time.

The ſecond table contains the mean motions for months, ſhewing at the end of each month, how much forwarder the ſatellites are than they were at the beginning of the year. If, therefore, to the place at the beginning of the year, you add the mean motion for any month, it gives the mean place for the end of that month, or for the beginning of the next. The month of February is here ſuppoſed to contain 28 days. Now in leap-year, the epoch being for the 1ſt of January at noon, mean time, when we add the motion for January, it gives the place on February 1, at noon; and adding the motion for February, it gives the place for the laſt day at noon; becauſe from January 1, to February 29, in leap-year, is the ſame as from December 31 to February 28, in the common years: hence the mean motions for the other months, added to the epochs, will give the mean places as well in leap-year as in the common years.

The third table contains the mean motions for days, as far as 31; that being ſufficient, as we have the mean motions for months. But in leap-year, in the months of January and February, we muſt take the motion for one day leſs than the day of the month, becauſe (as above explained) the epoch is for the 1ſt of January, and the motion for a month being added, gives the place on the 1ſt of February; the places, therefore, being thus obtained after one day in each month has paſſed, the motion from that time to any other day muſt be one day leſs than the number of days of the month.

The fourth table contains the mean motions for hours; and the fifth table contains the mean motions for minutes and ſeconds.

The ſixth table contains the apparent diſtances of the ſatellites from the centre of Jupiter, in terms of its ſemidiameters, according to their ſituations in their orbits, and the geocentric place of Jupiter.

The ſeventh table contains the firſt equation of light; the eighth contains the ſecond equation of light. Theſe tables are conſtructed to the neareſt diſtance of Jupiter from the earth; and, therefore, at all other times, the ſatellites will appear to come later to the places found from the tables than the time to which they were computed, by the equations in the tables.

Table the ninth contains the equation of the centre of the fourth ſatellite.

Theſe tables give only the *mean* places of the ſatellites, except for the fourth ſatellite, whoſe place may be corrected by the equation of the orbit. This accuracy is ſufficient for the purpoſe for which the tables are here given, they being principally intended to find the configurations of the ſatellites. In the tables for computing the eclipſes, the epochs for each year are thoſe of the firſt mean conjunction of the ſatellite, after the commencement of the year. The conſtruction of theſe epochs, and alſo the uſe of the tables, will be explained in the ſequel of this article.

If it be required to find the apparent poſitions of the ſatellites at any given apparent time, that time muſt be converted into mean time, (the tables being conſtructed to mean time,) by applying the equation of time; and then from that mean time, the equation of light muſt be ſubtracted, and the computation made for that time; and from the places thus found, we muſt ſubtract the geocentric place of Jupiter, and proceed as hereafter exemplified.

TABLES for finding the CONFIGURATIONS of Jupiter's Satellites.

TABLE I. Epochs of the mean Motions of Jupiter's Satellites.

Years. New Style.	I. Satellite.				II. Satellite.				III. Satellite.				IV. Satellite.				IV. Sat. Apſ.		
	S.	D.	M.	S.	S.	D.	M.	S.	S.	D.	M.	S.	S.	M.	D.	S.	S.	D.	M.
1790	0	4	13	37	10	4	57	2	0	5	9	5	3	28	1	10	1	7	4
1791	3	27	42	36	7	16	44	19	0	11	5	36	2	11	28	30	1	7	49
B. 1792	2	14	40	55	8	9	54	5	2	7	21	12	1	16	31	6	1	8	34
1793	6	8	9	53	5	21	41	22	2	13	17	44	11	29	58	26	1	9	19
1794	10	1	38	52	3	3	28	39	2	19	14	15	10	13	25	46	1	10	4
1795	1	25	7	50	0	15	7	56	2	25	10	47	8	26	53	6	1	10	49
B. 1796	0	12	6	9	1	8	17	43	4	21	26	23	8	1	54	42	1	11	35
1797	4	5	35	8	10	20	5	0	4	27	22	54	6	15	22	2	1	12	20
1798	7	29	4	7	8	1	52	17	5	3	19	26	4	28	49	22	1	13	5
1799	11	22	33	5	5	13	39	34	5	9	15	58	3	12	17	42	1	13	50
C. 1800	3	16	2	4	2	25	26	51	5	15	12	30	1	25	45	2	1	14	35
1801	7	9	31	3	0	7	14	8	5	21	9	2	0	9	12	22	1	15	20
1802	11	3	0	1	9	19	1	25	5	27	5	34	10	22	39	42	1	16	6
1803	2	26	29	0	7	0	48	42	6	3	2	6	9	6	7	2	1	16	51
B. 1804	1	13	27	19	7	23	58	29	7	29	17	41	8	11	8	38	1	17	36
1805	5	6	56	18	5	5	45	46	8	5	14	13	6	24	35	58	1	18	21
1806	9	0	25	16	2	17	33	5	8	11	10	45	5	8	3	18	1	19	6
1807	0	23	54	16	11	29	20	20	8	17	7	16	3	21	30	38	1	19	51
B. 1808	11	10	52	34	0	22	30	6	10	13	22	52	2	26	32	14	1	20	37
1809	3	4	21	32	10	4	17	23	10	19	19	24	1	9	59	34	1	21	22
1810	6	27	50	31	7	16	4	40	10	25	15	55	11	23	26	54	1	22	7
1811	10	21	19	30	4	27	51	57	11	1	12	27	10	6	54	14	1	22	52
B. 1812	9	8	17	49	5	21	1	44	0	27	28	3	9	11	55	50	1	23	37
1813	1	1	46	47	3	2	49	1	1	3	24	34	7	25	23	10	1	24	22
1814	4	25	15	46	0	14	36	18	1	9	21	6	6	8	50	30	1	25	8
1815	8	18	44	45	9	26	23	35	1	15	17	38	4	22	17	50	1	25	53
B. 1816	7	5	43	4	10	19	33	21	3	11	33	14	3	27	19	26	1	26	38
1817	10	29	12	2	8	1	20	38	3	17	29	45	2	10	46	46	1	27	23
1818	2	22	41	1	5	13	7	55	3	23	26	17	0	24	14	6	1	28	8
1819	6	16	10	0	2	24	55	13	3	29	22	49	11	7	41	25	1	28	53
B. 1820	5	3	8	18	3	18	4	59	5	25	38	24	10	12	43	2	1	29	39

Table II. The mean Motion of Jupiter's Satellites for *Months*.

Months.	I. Satellite.				II. Satellite.				III. Satellite.				IV. Satellite.				IV. Apſ.	
31 January	6^{s}	8°	9′	32″	8^{s}	22°	37′	3″	3^{s}	29°	50′	50″	10^{s}	8°	42′	16″	3′	50″
28 February	4	5	51	2	7	11	6	38	2	28	44	29	6	12	41	44	7	18
31 March	10	14	0	34	4	3	43	40	6	28	35	18	4	21	24	0	11	7
30 April	9	28	40	46	9	14	58	14	9	8	7	4	2	8	32	0	14	50
31 May	4	6	50	17	6	7	35	16	1	7	57	53	0	17	14	16	18	40
30 June	3	21	30	29	11	18	49	50	3	17	29	40	10	4	22	16	22	22
31 July	9	29	40	1	8	11	26	52	7	17	20	29	8	13	4	32	26	12
31 Auguſt	4	7	49	32	5	4	3	55	11	17	11	19	6	21	46	48	30	2
30 September	3	22	29	44	10	15	18	28	1	26	43	5	4	8	54	48	33	45
31 October	10	0	39	15	7	7	55	31	5	26	33	55	2	17	37	4	37	35
30 November	9	15	19	27	0	19	10	4	8	6	5	41	0	4	45	4	41	17
31 December	3	23	28	59	9	11	47	7	0	5	56	31	10	13	27	20	45	7

Table III. The mean Motion of Jupiter's Satellites for *Days*.

Days.	I.				II.				III.				IV.				IV. Apſ.	
	S.	D.	M.	S.	S.	D.	M.	S.	S.	D.	M.	S.	S.	D.	M.	S.	M.	S.
1	6	23	29	20	3	11	22	29	1	20	19	4	0	21	34	16	0	7
2	1	16	58	41	6	22	44	58	3	10	38	7	1	13	8	32	0	15
3	8	10	28	1	10	4	7	27	5	0	57	11	2	4	42	48	0	22
4	3	3	57	22	1	15	29	57	6	21	16	14	2	26	17	4	0	30
5	9	27	26	42	4	26	52	26	8	11	35	18	3	17	51	20	0	37
6	4	20	56	2	8	8	14	55	10	1	54	21	4	9	25	36	0	44
7	11	14	25	22	11	19	37	24	11	22	13	25	5	0	59	52	0	52
8	6	7	54	43	3	0	59	53	1	12	32	28	5	22	34	8	0	59
9	1	1	24	3	6	12	22	22	3	2	51	32	6	14	8	24	1	7
10	7	24	53	23	9	23	44	51	4	23	10	35	7	5	42	40	1	14
11	2	18	22	44	1	5	7	21	6	13	29	39	7	27	16	56	1	22
12	9	11	52	4	4	16	29	50	8	3	48	42	8	18	51	12	1	29
13	4	5	21	25	7	27	52	19	9	24	7	46	9	10	25	28	1	36
14	10	28	50	45	11	9	14	48	11	14	26	50	10	1	59	44	1	44
15	5	22	20	6	3	20	37	17	1	4	45	53	10	23	34	0	1	51
16	0	15	49	26	6	1	59	46	2	25	4	57	11	15	8	16	1	59
17	7	9	18	46	9	13	22	15	4	15	23	0	0	6	42	32	2	6
18	2	2	48	6	0	24	44	45	6	5	43	4	0	28	16	48	2	13
19	8	26	17	27	4	6	7	14	7	26	2	7	1	19	51	4	2	21
20	3	19	46	47	7	17	29	43	9	16	21	11	2	11	25	20	2	28
21	10	13	16	8	10	28	52	12	11	6	40	14	3	2	59	36	2	36
22	5	6	45	29	2	10	14	41	10	26	59	18	3	24	33	52	2	43
23	0	0	14	49	5	21	37	10	2	17	18	21	4	16	8	8	2	51
24	6	23	44	9	9	2	59	39	4	7	37	25	5	7	42	34	2	58
25	1	17	13	29	0	14	22	9	5	27	56	28	5	29	16	50	3	5
26	8	10	42	50	3	25	44	38	7	18	15	32	6	20	50	56	3	13
27	3	4	12	10	7	7	7	7	9	8	34	36	7	12	25	12	3	20
28	9	27	41	30	10	18	29	36	10	28	53	39	8	3	59	28	3	28
29	4	21	10	51	1	29	52	5	0	19	12	43	8	25	33	44	3	35
30	11	14	40	11	5	11	14	34	2	9	31	46	9	17	8	0	3	42
31	6	8	9	32	8	22	37	3	3	29	50	50	10	8	42	16	3	50

In leap-year, for January and February take one day leſs, for reaſons already given.

TABLE IV. The mean Motions of Jupiter's Satellites for *Hours.*

Hours.	I.				II.				III.				IV.			
	S.	D.	M.	S.	S.	D.	M.	S.	S.	D.	M.	S.	S.	D.	M.	S.
1	0	8	28	43	0	4	13	26	0	2	5	48	0	0	53	56
2	0	16	57	27	0	8	26	52	0	4	11	35	0	1	47	51
3	0	25	26	10	0	12	40	19	0	6	17	23	0	2	41	47
4	1	3	54	53	0	16	53	45	0	8	23	11	0	3	35	43
5	1	12	23	36	0	21	7	11	0	10	28	58	0	4	29	38
6	1	20	52	20	0	25	20	37	0	12	34	46	0	5	23	34
7	1	29	21	3	0	29	34	3	0	14	40	33	0	6	17	30
8	2	7	49	46	1	3	47	30	0	16	46	21	0	7	11	25
9	2	16	18	30	1	8	0	56	0	18	52	9	0	8	5	21
10	2	24	47	13	1	12	14	22	0	20	57	56	0	8	59	17
11	3	3	15	56	1	16	27	48	0	23	3	44	0	9	53	13
12	3	11	44	40	1	20	41	15	0	25	9	32	0	10	47	8
13	3	20	13	24	1	24	54	41	0	27	15	19	0	11	41	4
14	3	28	42	7	1	29	8	7	0	29	21	7	0	12	35	0
15	4	7	10	51	2	3	21	33	1	1	26	55	0	13	28	55
16	4	15	39	34	2	7	34	59	1	3	32	42	0	14	22	51
17	4	24	8	17	2	11	48	26	1	5	38	30	0	15	16	47
18	5	2	37	0	2	16	1	52	1	7	44	18	0	16	10	42
19	5	11	5	43	2	20	15	18	1	9	50	5	0	17	4	38
20	5	19	34	27	2	24	28	44	1	11	55	53	0	17	58	34
21	5	28	3	10	2	28	42	11	1	14	1	41	0	18	52	29
22	6	6	31	53	3	2	55	37	1	16	7	28	0	19	46	25
23	6	15	0	37	3	7	9	3	1	18	13	16	0	20	40	21
24	6	23	29	20	3	11	22	29	1	20	19	4	0	21	34	16

TABLE V. The mean Motions of Jupiter's Satellites for *Minutes* and *Seconds.*

M. S.	D. M.	M. S.	S. T.	D. M.	M. S.	S. T.	D. M.	M. S.	S. T.	D. M.	M. S.	S. T.
	I.			II.			III.			IV.		
1	0	8	29	0	4	13	0	2	6	0	0	54
2	0	16	57	0	8	27	0	4	12	0	1	48
3	0	25	26	0	12	40	0	6	17	0	2	42
4	0	33	55	0	16	54	0	8	23	0	3	36
5	0	42	24	0	21	7	0	10	29	0	4	30
6	0	50	52	0	25	21	0	12	35	0	5	24
7	0	59	21	0	29	34	0	14	41	0	6	18
8	1	7	50	0	33	47	0	16	46	0	7	11
9	1	16	18	0	38	1	0	18	52	0	8	5
10	1	24	47	0	42	14	0	20	58	0	8	59
11	1	33	16	0	46	28	0	23	4	0	9	53
12	1	41	45	0	50	41	0	25	10	0	10	47
13	1	50	13	0	54	55	0	27	15	0	11	41
14	1	58	42	0	59	8	0	29	21	0	12	35
15	2	7	11	1	3	22	0	31	27	0	13	39

Table V.—*continued.*

M. S.	D. M.	M. S.	S. T.	D. M.	M. S.	S. T.	D. M.	M. S.	S. T.	D. M.	M. S.	S. T.
	I.			II.			III.			IV.		
16	2	15	40	1	7	35	0	33	33	0	14	23
17	2	24	8	1	11	48	0	35	39	0	15	17
18	2	32	37	1	16	2	0	37	44	0	16	11
19	2	41	6	1	20	15	0	39	50	0	17	5
20	2	49	34	1	24	29	0	41	56	0	17	59
21	2	58	3	1	28	42	0	44	2	0	18	52
22	3	6	32	1	32	56	0	46	7	0	19	46
23	3	15	1	1	37	9	0	48	13	0	20	40
24	3	23	29	1	41	22	0	50	19	0	21	34
25	3	31	58	1	45	36	0	52	25	0	22	28
26	3	40	27	1	49	49	0	54	31	0	23	22
27	3	48	55	1	54	3	0	56	37	0	24	16
28	3	57	24	1	58	16	0	58	42	0	25	10
29	4	5	53	2	2	30	1	0	48	0	26	4
30	4	14	22	2	6	43	1	2	54	0	26	58
31	4	22	50	2	10	57	1	5	0	0	27	52
32	4	31	19	2	15	10	1	7	6	0	28	46
33	4	39	48	2	19	23	1	9	11	0	29	40
34	4	48	17	2	23	37	1	11	17	0	30	33
35	4	56	45	2	27	50	1	13	23	0	31	27
36	5	5	14	2	32	4	1	15	29	0	32	21
37	5	13	43	2	36	17	1	17	35	0	33	15
38	5	22	11	2	40	31	1	19	40	0	34	9
39	5	30	40	2	44	44	1	21	46	0	35	3
40	5	39	9	2	48	57	1	23	52	0	35	57
41	5	47	48	2	53	11	1	25	58	0	36	51
42	5	56	6	2	57	24	1	28	4	0	37	45
43	6	4	35	3	1	38	1	30	9	0	38	39
44	6	13	4	3	5	51	1	32	15	0	39	33
45	6	21	32	3	10	5	1	34	21	0	40	27
46	6	30	1	3	14	18	1	36	27	0	41	21
47	6	38	30	3	18	31	1	38	33	0	42	15
48	6	46	59	3	22	45	1	40	38	0	43	9
49	6	55	27	3	26	58	1	42	44	0	44	2
50	7	3	56	3	31	12	1	44	50	0	44	56
51	7	12	25	3	35	25	1	46	56	0	45	50
52	7	20	54	3	39	39	1	49	2	0	46	44
53	7	29	22	3	43	52	1	51	7	0	47	38
54	7	37	51	3	48	6	1	53	13	0	48	32
55	7	46	20	3	52	19	1	55	19	0	49	26
56	7	54	48	3	56	32	1	57	25	0	50	20
57	8	3	17	4	0	46	1	59	31	0	51	14
58	8	11	46	4	4	59	2	1	36	0	52	8
59	8	20	15	4	9	12	2	3	42	0	53	4
60	8	28	43	4	13	26	2	5	48	0	53	56

TABLE VI. Apparent Diſtances of the Satellites from the Centre of Jupiter, in Semidiameters of Jupiter.

	Diſtance of the Satellites from the Geocentric Place of Jupiter.												
Sig.	O. Eaſt. VI. Weſt.				I. Eaſt. VII. Weſt.				II. Eaſt. VIII. Weſt.				
Sat.	I.	II.	III.	IV.	I.	II.	III.	IV.	I.	II.	III.	IV.	
Deg.	Semid.	Semid.	Semid.	Semid.	Semid.	Semid.	Semid.	Semid.	Semid.	Semid.	Semid.	Semid.	Deg.
0	0.0	0.0	0.0	0.0	2.95	4.70	7.50	13.19	5.12	8.14	12.99	22.85	30
1	0.10	0.16	0.26	0.46	3.04	4.84	7.73	13.59	5.17	8.22	13.12	23.07	29
2	0.21	0.33	0.52	0.92	3.13	4.98	7.95	13.98	5.22	8.30	13.24	23.29	28
3	0.31	0.49	0.78	1.38	3.22	5.12	8.17	14.37	5.27	8.38	13.36	23.51	27
4	0.41	0.66	1.05	1.84	3.30	5.26	8.39	14.75	5.31	8.45	13.48	23.71	26
5	0.51	0.82	1.31	2.30	3.39	5.39	8.60	15.13	5.36	8.52	13.59	23.91	25
6	0.62	0.98	1.57	2.76	3.47	5.53	8.82	15.51	5.40	8.59	13.70	24.10	24
7	0.72	1.14	1.83	3.22	3.56	5.66	9.03	15.88	5.44	8.66	13.81	24.28	23
8	0.82	1.31	2.09	3.67	3.64	5.79	9.24	16.24	5.48	8.72	13.91	24.46	22
9	0.92	1.47	2.34	4.13	3.72	5.92	9.44	16.60	5.52	8.78	14.00	24.63	21
10	1.03	1.63	2.60	4.58	3.80	6.04	9.64	16.96	5.55	8.84	14.10	24.79	20
11	1.13	1.79	2.86	5.03	3.87	6.17	9.84	17.31	5.59	8.89	14.18	24.95	19
12	1.23	1.95	3.11	5.48	3.95	6.29	10.04	17.65	5.62	8.94	14.27	25.09	18
13	1.33	2.12	3.37	5.93	4.03	6.41	10.23	17.99	5.65	8.99	14.34	25.23	17
14	1.43	2.27	3.63	6.38	4.10	6.53	10.42	18.32	5.68	9.04	14.42	25.36	16
15	1.53	2.43	3.88	6.83	4.18	6.65	10.61	18.65	5.71	9.08	14.49	25.48	15
16	1.63	2.59	4.13	7.27	4.25	6.76	10.79	18.98	5.73	9.12	14.56	25.60	14
17	1.73	2.75	4.38	7.71	4.32	6.88	10.98	19.30	5.76	9.16	14.62	25.71	13
18	1.83	2.91	4.63	8.15	4.39	6.99	11.15	19.61	5.78	9.20	14.67	25.81	12
19	1.92	3.06	4.88	8.59	4.46	7.09	11.32	19.91	5.80	9.23	14.72	25.90	11
20	2.02	3.22	5.13	9.02	4.53	7.20	11.49	20.21	5.82	9.26	14.77	25.98	10
21	2.12	3.37	5.37	9.45	4.59	7.31	11.66	20.50	5.83	9.29	14.81	26.06	9
22	2.22	3.52	5.62	9.88	4.66	7.41	11.82	20.79	5.85	9.31	14.85	26.13	8
23	2.31	3.67	5.86	10.31	4.72	7.51	11.98	21.07	5.87	9.33	14.89	26.19	7
24	2.40	3.82	6.11	10.73	4.78	7.61	12.14	21.34	5.88	9.35	14.92	26.24	6
25	2.50	3.97	6.34	11.15	4.84	7.70	12.29	21.61	5.89	9.37	14.94	26.28	5
26	2.59	4.12	6.57	11.57	4.90	7.80	12.44	21.87	5.89	9.38	14.96	26.32	4
27	2.68	4.27	6.81	11.98	4.96	7.89	12.58	22.13	5.90	9.39	14.98	26.35	3
28	2.77	4.41	7.04	12.39	5.01	7.97	12.72	22.37	5.91	9.40	14.99	26.37	2
29	2.86	4.56	7.27	12.79	5.07	8.06	12.86	22.61	5.91	9.40	15.00	26.38	1
30	2.95	4.70	7.50	13.19	5.12	8.14	12.99	22.85	5.91	9.40	15.00	26.38	0
Sig.	XI. Weſt. V. Eaſt.				X. Weſt. IV. Eaſt.				IX. Weſt. III. Eaſt.				

TABLE VII. The *Firſt* Equation of Light.

Argument. Diſtance of Jupiter from the Sun.

Deg.	Sig. O.		Sig. I.		Sig. II.		Sig. III.		Sig. IV.		Sig. V.		Deg.
0	16'	15''	15'	10''	12'	12''	8'	7''	4'	3''	1'	5''	30
1	16	15	15	6	12	5	7	59	3	56	1	1	29
2	16	15	15	1	11	57	7	51	3	49	0	57	28
3	16	14	14	56	11	49	7	42	3	42	0	53	27
4	16	14	14	52	11	41	7	34	3	35	0	49	26
5	16	13	14	47	11	33	7	25	3	28	0	45	25
6	16	12	14	42	11	25	7	16	3	21	0	42	24
7	16	11	14	37	11	17	7	8	3	14	0	38	23
8	16	10	14	32	11	9	6	59	3	7	0	36	22
9	16	9	14	27	11	2	6	51	3	0	0	33	21
10	16	7	14	21	10	55	6	42	2	53	0	30	20
11	16	5	14	15	10	47	6	34	2	47	0	27	19
12	16	4	14	9	10	38	6	26	2	41	0	24	18
13	16	2	14	3	10	30	6	18	2	35	0	22	17
14	16	0	13	58	10	22	6	10	2	29	0	19	16
15	15	58	13	52	10	14	6	1	2	23	0	17	15
16	15	56	13	46	10	6	5	53	2	18	0	15	14
17	15	54	13	40	9	57	5	45	2	12	0	13	13
18	15	51	13	34	9	48	5	37	2	6	0	11	12
19	15	48	13	28	9	40	5	29	2	0	0	10	11
20	15	45	13	22	9	32	5	21	1	54	0	8	10
21	15	42	13	15	9	24	5	13	1	48	0	6	9
22	15	39	13	8	9	16	5	6	1	43	0	5	8
23	15	36	13	1	9	8	4	58	1	38	0	4	7
24	15	33	12	54	8	59	4	50	1	33	0	3	6
25	15	30	12	47	8	50	4	42	1	28	0	2	5
26	15	26	12	40	8	41	4	34	1	23	0	1	4
27	15	22	12	33	8	32	4	26	1	19	0	1	3
28	15	18	12	26	8	23	4	18	1	14	0	0	2
29	15	14	12	19	8	15	4	11	1	9	0	0	1
30	15	10	12	12	8	7	4	3	1	5	0	0	0
	Sig. XI.		Sig. X.		Sig. IX.		Sig. VIII.		Sig. VII.		Sig. VI.		

TABLE VIII. The *Second* Equation of Light.

Argument. Anomaly of Jupiter.							
Deg.	Sig. O.	Sig. I.	Sig. II.	Sig. III.	Sig. IV.	Sig. V.	Deg.
0	4′ 4″	3′ 47″	3′ 3″	2′ 2″	1′ 1″	0′ 16″	30
1	4 4	3 46	3 1	2 0	0 59	0 15	29
2	4 4	3 45	2 59	1 58	0 57	0 14	28
3	4 4	3 44	2 57	1 56	0 55	0 13	27
4	4 4	3 43	2 55	1 53	0 54	0 12	26
5	4 3	3 42	2 53	1 51	0 52	0 12	25
6	4 3	3 41	2 51	1 49	0 51	0 11	24
7	4 3	3 39	2 49	1 47	0 49	0 10	23
8	4 3	3 38	2 47	1 45	0 47	0 9	22
9	4 2	3 37	2 45	1 43	0 46	0 8	21
10	4 2	3 35	2 44	1 41	0 44	0 7	20
11	4 2	3 34	2 42	1 39	0 43	0 6	19
12	4 1	3 32	2 40	1 37	0 41	0 6	18
13	4 0	3 31	2 38	1 35	0 40	0 5	17
14	4 0	3 30	2 36	1 33	0 38	0 5	16
15	4 0	3 28	2 34	1 30	0 36	0 4	15
16	3 59	3 27	2 32	1 28	0 35	0 4	14
17	3 59	3 25	2 29	1 26	0 33	0 3	13
18	3 58	3 24	2 27	1 24	0 32	0 3	12
19	3 57	3 22	2 25	1 22	0 30	0 2	11
20	3 56	3 21	2 23	1 20	0 29	0 2	10
21	3 55	3 20	2 21	1 18	0 27	0 1	9
22	3 55	3 17	2 19	1 16	0 26	0 1	8
23	3 54	3 15	2 17	1 14	0 25	0 1	7
24	3 53	3 13	2 15	1 12	0 23	0 1	6
25	3 52	3 12	2 13	1 10	0 22	0 0	5
26	3 51	3 10	2 10	1 8	0 21	0 0	4
27	3 50	3 8	2 8	1 7	0 20	0 0	3
28	3 49	3 6	2 6	1 5	0 19	0 0	2
29	3 48	3 5	2 4	1 3	0 17	0 0	1
30	3 47	3 3	2 2	1 1	0 16	0 0	0
	Sig. XI.	Sig. X.	Sig. IX.	Sig. VIII.	Sig. VII.	Sig. VI.	

TABLE IX. Equation of the Centre of the *Fourth* Satellite.

Argument. Mean Anomaly.				
Deg.	+ VI – O.	+ VII – I.	+ VIII – II.	Deg.
0	0′ 0″	24′ 57″	43′ 22″	30
1	0 52	25 42	43 48	29
2	1 44	26 26	44 14	28
3	2 37	27 10	44 39	27
4	3 29	27 54	45 3	26
5	4 21	28 37	45 26	25
6	5 13	29 20	45 48	24
7	6 5	30 2	46 9	23
8	6 57	30 44	46 30	22
9	7 48	31 25	46 50	21
10	8 39	32 6	47 9	20
11	9 31	32 46	47 26	19
12	10 22	33 25	47 42	18
13	11 13	34 4	47 58	17
14	12 4	34 43	48 13	16
15	12 55	35 21	48 28	15
16	13 45	35 57	48 42	14
17	14 36	36 33	48 56	13
18	15 26	37 8	49 7	12
19	16 15	37 43	49 18	11
20	17 4	38 18	49 28	10
21	17 53	38 52	49 37	9
22	18 41	39 25	49 46	8
23	19 29	39 57	49 54	7
24	20 17	40 28	50 1	6
25	21 5	40 59	50 6	5
26	21 52	41 29	50 9	4
27	22 39	41 58	50 14	3
28	23 26	42 27	50 17	2
29	24 12	42 55	50 19	1
30	24 57	43 22	50 20	0
	+ XI – V.	+ X – IV.	+ IX – III.	

To find the Configurations of Jupiter's Satellites at any Time.

Find by Tables I, II, III, IV, V, the mean place of each ſatellite for the given time, which will be ſufficiently near to the true place, except for the fourth ſatellite, for which we muſt apply the equation of the centre; for that purpoſe we muſt, with its mean motion, take out the place of its apſide, which ſubtracted from the mean longitude gives its mean anomaly, to which find the equation in Table IX, and apply it to the mean longitude, and it gives the true longitude.

From the place of each ſatellite thus found, ſubtract the geocentric longitude of Jupiter, (ſee JUPITER,) and in Table VI. with that difference, find the correſponding numbers, which repreſent the apparent diſtance of each from the centre of Jupiter in terms of its ſemidiameter. When the argument of this table is *leſs* than ſix ſigns, the ſatellite will be to the *eaſt* of Jupiter; when *greater*, to the *weſt*. This is Dr. Halley's method.

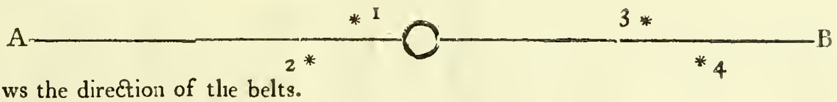
As the principal deſign of finding the configurations of the ſatellites is to diſtinguiſh one from another, the equation of light is commonly of but little importance, and may be neglected. Or if that accuracy be deſired, compute the configuration to any hour mean time, and then add the equation of light to it, and you have the configurations as they appear at that time. The operation is rendered ſhorter by calculating to an hour; and it will be ſufficient if the places be calculated to minutes of a degree.

To find the equation of light; from the ſun's longitude ſubtract the heliocentric longitude of Jupiter, and with the remainder enter Table VII, and take out the firſt part of the equation; and with the anomaly of Jupiter enter Table VIII, and take out the ſecond part. The anomaly is found by ſubtracting the place of the aphelion from the longitude.

Ex.—To calculate the configuration of the ſatellites on April 6, 1795, at 4 o'clock in the morning, mean time, by the civil account; or on the 5^d 16^h, aſtronomical time.

	I.	II.	III.	IV.	Apſ. IV.
1795	1^s 25° 8′	0^s 15° 8′	2^s 25° 11′	8^s 26° 53′	1^s 10° 49′
March	10 14 1	4 3 44	6 28 35	4 21 24	0 0 11
5 days	9 27 27	4 26 52	8 11 35	3 17 51	0 0 1
16 hours	4 15 40	2 7 35	1 3 33	0 14 23	
					1 11 1
	2 22 16	11 23 19	7 8 54	5 20 31	5 20 22
♃ Geo.	10 3 50	10 3 50	10 3 50	−39	
	4 18 26	1 19 29	9 4 4	5 19 52	4 9 21
				10 3 50	
				7 16 2	
	Eaſt 3.91	Eaſt 7.14	Weſt 14.95	Weſt 18.98	

Hence this configuration,



The line A B ſhews the direction of the belts.

Sun's longitude	0^s 17° 24′		
Jupiter's hel. long	9 23 3		
Difference	2 24 21	Equation of light	8′ 59″
Jupiter's aphelion	6 11 4		
Jupiter's anomaly	3 11 59	Equation of light	1 37
	Total	Equation of light	10 36

This configuration, therefore, which is calculated for 4 o'clock mean time, is ſuch as will appear at 10′ 36″ after four; but it will not ſenſibly differ from the appearance at four. To have computed the configurations as they appear at 4 o'clock, we muſt have computed for 3^h 49′ 24″ mean time.

The configuration at the ſame hour, for a month, may be very readily determined, without repeating the whole operation, in this manner. The difference from day to day ariſes from the addition of the daily mean motions, and from the variation of the geocentric place of Jupiter, the mean daily variation of which for a month will be ſufficiently accurate for our purpoſe. As the geocentric place of Jupiter is *ſubtracted* from the mean place of the ſatellite, if the geocentric motion be *direct*, *ſubtract* its mean daily variation from the mean daily motion of the ſatellite; but if the geocentric motion be *retrograde*, you muſt *add*, and you will have the whole daily motion to be applied to the calculation for any one day in order to get the ſituation of the ſatellites for the next day; and thus you may continue the proceſs for a month, at the end of which it may be proper to reſume the firſt calculation, and then proceed for that month in like manner.

To take our example, I find Jupiter's geocentric motion is *direct*, at the mean rate of about 2′ in a day for the month; ſubtract therefore 2′ from the daily motions of the ſatellites, and we have 6^s 23° 27′, 3^s 11° 20′, 1^s 20° 17′, and 0^s 21° 32′, for the relative daily motions of the firſt, ſecond, third, and fourth ſatellites in reſpect to Jupiter; hence,

	I.	II.	III.	IV.
	s ° ′	s ° ′	s ° ′	s ° ′
	4 18 26	1 9 29	9 4 4	7 16 2
	6 23 27	3 11 20	1 20 17	0 21 32
7^d . .	11 11 53	4 20 49	10 24 21	8 7 34
	6 23 27	3 11 20	1 20 17	0 21 32
8^d . .	6 5 20	8 2 9	0 14 38	8 29 6
	6 23 27	3 11 20	1 20 17	0 21 32
9^d . .	0 28 47	11 13 29	2 4 55	9 20 38

Hence, by Table VI, we get the following configurations;

7^d	Weſt 1.84	Eaſt 5.94	Weſt 8.75	Weſt 24.38
8^d	Weſt 0.54	Weſt 8.31	Eaſt 3.79	Weſt 26.38
9^d	Eaſt 2.82	Weſt 2.67	Eaſt 13.58	Weſt 24.71

As there is the ſame motion of the ſatellites to be added every time, it will be beſt to put them down upon a ſtrip of paper, and by laying it under, the addition may be made from it without the trouble of writing the motions down every time. In this manner we may lay down the configurations with great expedition, and with more accuracy than by the mechanical contrivances of Flamſteed and Caſſini.

The mean time at which theſe configurations are ſhewn, may be reduced to apparent time, by applying the equation of time; thus the configuration on the ſixth day at 10′ 36″ after 4 o'clock mean time, is 8′ 11″ after 4 apparent time; to have calculated therefore for 4 apparent time, we muſt have calculated for 3^h 51′ 49″.

The principle upon which the ſixth table is conſtructed is this. Let E (*Plate* XX. *Aſtronomy*, *fig.* 4.) be the earth, I Jupiter, *a* the place of a ſatellite in its orbit; join E I, and produce it to the heavens at *m*, and produce I *a* to *n*, and draw *a c* perpendicular to I *b*. Now *m* is the geocentric place of Jupiter in the heavens, and *n* the true place of the ſatellite; if therefore from ♈ *n*, the longitude of the ſatellite, we ſubtract ♈ *m*, the geocentric longitude of Jupiter, we get *m n*, or the angle *b* I *a*, whoſe ſine *a c* repreſents the apparent diſtance of the ſatellite from Jupiter; therefore, if *a c* be expreſſed in terms of the ſemidiameter of Jupiter, we ſhall get the apparent diſtance in ſemidiameters, and in this manner the tables are conſtructed.

When a ſatellite is *approaching* Jupiter, the figure is put *between* Jupiter and the point; when it is *receding*, the figure is put on the other ſide.

A Table of the apparent Diſtances of Jupiter's Satellites from its limb at the time of an Eclipſe, for every *tenth* day of Jupiter's Diſtance from Oppoſition or Conjunction; by the Rev. Dr. Maſkelyne, Aſtronomer Royal.

Diſtance of Jupiter from *oppoſition* to the ☉	Diſtance of the Satellites from Jupiter's limb at the Eclipſes, in ſemidiameters of Jupiter, and decimal parts.				Diſtance of Jupiter from *oppoſition* to the ☉	Diſtance of the Satellites from Jupiter's limb at the Eclipſes, in ſemidiameters of Jupiter, and decimal parts.			
Days.	I.	II.	III.	IV.	Days.	I.	II.	III.	IV.
10	0.20	0.33	0.50	0.85	10	0.15	0.25	0.35	0.55
20	0.40	0.66	1.05	1.66	20	0.30	0.45	0.70	1.25
30	0.60	0.95	1.50	2.65	30	0.40	0.67	1.05	1.70
40	0.75	1.20	1.90	3.35	40	0.55	0.90	1.40	2.50
50	0.90	1.40	2.25	3.95	50	0.70	1.00	1.80	3.20
60	1.00	1.60	2.50	4.40	60	0.80	1.25	2.00	3.50
70	1.05	1.70	2.66	4.70	70	0.90	1.40	2.25	3.95
80	1.10	1.75	2.75	4.85	80	1.00	1.55	2.45	4.33
90	1.10	1.75	2.75	4.85	90	1.05	1.66	2.60	4.60
100	1.10	1.70	2.70	4.80	100	1.10	1.75	2.70	4.80

The diſtances of the ſatellites from Jupiter's limb in this table, are to be meaſured either in a line with Jupiter's equator, or longer axis, or in a line parallel thereto; or, which is the ſame thing, to its belts, for the ſatellites generally appear a little to the north or ſouth of this line.

In this table, the apparent diſtances are thoſe of the regular eclipſes, that is, at the immerſions before oppoſition and emerſions after; but at the emerſions which are viſible before oppoſition, and immerſions after, the diſtances from Jupiter's limb will be leſs than in the table, by a quantity which is in the ſame proportion to Jupiter's diameter, as the duration of the eclipſe is to the longeſt duration when in the nodes.

On the Conſtruction of the Epochs of the Mean Conjunctions of Jupiter's Satellites.

The epoch of the mean conjunction is the moment when the ſatellite arrives the firſt time every year at the mean place of Jupiter, reckoned upon the orbit of the ſatellite, diminiſhed by the ſum of the maxima of all the equations (the equations being expreſſed in time), in order to render the equations all additive: the maxima of the equations being added to the equations themſelves, in order to make up for that ſubtraction. For example, the firſt equation of light, at its maximum, is 8′ 7″.5, the time therefore is, in the epoch, diminiſhed by this quantity. Now let us ſuppoſe that at the time we are making any computation, this equation of light is ± 4′, then the equation, as we ſhall find it, is 8′ 7″.5 ± 4′ = 12′ 7″.5, or 4′ 7″.5, both additive, and this is manifeſtly the ſame as if 8′ 7″.5 had not been ſubtracted at firſt, and the equation ± 4′ applied, what was at firſt ſubtracted being now added; and as we add the maximum, the quantity by which it is diminiſhed can never render it negative. It is the ſame with all the other equations, except that depending on the excentricity of Jupiter's orbit, which being variable, does not admit of this method. All the epochs are thus put down; and the computations are rendered more eaſy and ſimple by making the equations additive.

To find the epoch for any year, we will take and explain that example which is given by M. de la Lande in the laſt edition of his Aſtronomy, vol. iii. p. 185. On January 2, 1764, the firſt ſatellite was eclipſed, the emerſion of which was at $10^{h}\ 27'\ 44''$ mean time, at Paris. Now to make the equation of time always additive, we muſt ſubtract $14'\ 42''$, which is the greateſt equation ſubtractive, and we have $10^{h}\ 13'\ 2''$ for the time of the emerſion, according to the conſtruction of M. Wargentin's tables.

The diſtance from the node was $60^\circ\ 17'$, the ſemidiameter of the ſhadow $1^{h}\ 7'\ 55''$, and the inclination of the orbit $3^\circ\ 18\frac{2}{3}'$; hence the ſemiduration of the eclipſe was $1^{h}\ 4'\ 51''$; therefore the time of the middle of the eclipſe was $9^{h}\ 8'\ 11''$. From this we muſt deduce the time of the mean conjunction, by applying all the equations for that time.

The mean anomaly of Jupiter was about $7^{s}\ 8^\circ.5$, and the equation of its orbit was $4^\circ\ 51'\ 30''$ additive, which, converted into time according to the motion of the ſatellite, gives the equation $34'\ 39''$ to be ſubtracted from the middle of the eclipſe, and hence there remains $8^{h}\ 33'\ 32''$.

The maximum of the *firſt* part of the equation of light is $8'\ 7''.5$; but at the time of the eclipſe the equation was found to be $7'\ 0''.5$ additive; hence we have to ſubtract only $1'\ 7''$, which gives the time $8^{h}\ 32'\ 25''$.

The maximum of the *ſecond* part of the equation of light is $2'\ 2''.5$; but the equation was $59''.5$ additive at the time; therefore we muſt ſubtract $1'\ 3''$, which gives $8^{h}\ 31'\ 22''$.

The maximum of the equation, marked in the tables C, is $3'\ 30''$; but that equation at the time of the eclipſe was $0'\ 27''$ additive; hence we have to ſubtract $3'\ 3''$, which gives $8^{h}\ 28'\ 19''$.

The ſmall equations which come from the inequalities of Jupiter amounted at the ſame time to $15''$ ſubtractive; and the maximum being $1'$, we muſt ſubtract $1'\ 15''$, which gives $8^{h}\ 27'\ 4''$.

Laſtly, we muſt ſubtract $17''$ for the reduction, and we have $8^{h}\ 26'\ 47''$ on January 2; but it being biſſextile, we muſt ſubtract one day, which gives January 1, 1764, $8^{h}\ 26'\ 47''$ for the epoch of the mean conjunction for that year, by M. Wargentin's conſtruction of the tables.

Having ſhewn how the epochs for any year are eſtabliſhed, we have only to ſhew how they are carried on for any number of years. According to M. Wargentin, the ſynodic revolution of the firſt ſatellite is $1^{d}\ 18^{h}\ 28'\ 35''.947909$; of the ſecond, $3^{d}\ 13^{h}\ 17'\ 53''.74893$; of the third, $7^{d}\ 3^{h}\ 59'\ 35''.86754$; and of the fourth, $16^{d}\ 18^{h}\ 5'\ 7''.09174$. Let us take for our example the firſt ſatellite. If we multiply $1^{d}\ 18^{h}\ 28'\ 35''.947909$ by 207, it gives $366^{d}\ 8^{h}\ 40'\ 1''.21716$, which is a common year of 365 days, and $1^{d}\ 8^{h}\ 40'\ 1''.21716$ over. Therefore at the beginning of the next year the ſatellite will be forwarder than it was at the beginning of the preceding, by $1^{d}\ 8^{h}\ 40'\ 1''.21716$. If we add again $1^{d}\ 8^{h}\ 40'\ 1''.21716$, it gives $2^{d}\ 17^{h}\ 20'\ 2''.43432$, which being more than a revolution, by ſubtracting a revolution from it, we get $0^{d}\ 22^{h}\ 51'\ 26''.48641$, which is the quantity by which the ſatellite will be forwarder at the beginning of the ſecond year. If to this we again add the ſame quantity, it gves $2^{d}\ 7^{h}\ 31'\ 27''.70357$, which being more than a revolution, by ſubtracting a revolution from it, we get $0^{d}\ 13^{h}\ 2'\ 51''.75566$, the quantity by which the ſatellite will be forwarder at the beginning of the third year. But as the fourth year is ſuppoſed to be biſſextile, the epoch will take place on the 1ſt of January, therefore this year conſiſts of 366 days, and conſequently contains 207 revolutions, and $0^{d}\ 8^{h}\ 40'\ 1''.21716$; this, therefore, added to $0^{d}\ 13^{h}\ 2'\ 51''.75566$, gives $0^{d}\ 21^{h}\ 42'\ 52''.97282$, the quantity by which the ſatellite is forwarder at the beginning of the fourth year. But as this year begins on the 1ſt of January, inſtead of December 31, in the mean motions for days in January and February, we muſt take the day of the month one leſs than it is, as will be further explained in the conſtruction of the tables. Hence it appears, that if we begin at the epoch of any leap-year, and add to it $1^{d}\ 8^{h}\ 40'\ 1''.21716$, $0^{d}\ 22^{h}\ 51'\ 26''.48641$, $0^{d}\ 13^{h}\ 2'\ 51''.75566$, and $0^{d}\ 21^{h}\ 42'\ 52''.97282$, the ſums, rejecting a whole revolution when neceſſary, will be the epochs for the firſt, ſecond, third, and fourth years after. Thus we may continue the epochs as far as we pleaſe. In like manner, we proceed with the arguments A, B, C, &c. of the equations, rejecting a revolution when the ſum exceeds it.

The following Tables are calculated for finding the *Eclipſes* of Jupiter's Satellites.

SATELLITES.

TABLE I. Common to the four Satellites of Jupiter.

Corrections of the Arg.				Corrections of the Arg.				Corrections of the Arg.				Corrections of the Arg.			
Arg. A	Cor. B	Cor. C	Cor. H	Arg. A	Cor. B	Cor. C	Cor. H	Arg. A	Cor. B	Cor. C	Cor. H	Arg. A	Cor. B	Cor. C	Cor. H
0	153	76	153	4500	257	24	49	9000	306	0	0	13500	266	20	40
100	156	75	150	4600	259	23	47	9100	306	0	0	13600	264	21	42
200	158	74	148	4700	260	23	46	9200	306	0	0	13700	262	22	44
300	161	72	145	4800	262	22	44	9300	306	0	0	13800	260	23	46
400	163	71	143	4900	264	21	42	9400	306	0	0	13900	259	24	47
500	166	70	140	5000	266	20	40	9500	306	0	0	14000	256	25	50
600	168	69	138	5100	267	19	39	9600	306	0	0	14100	254	26	52
700	171	67	135	5200	269	18	37	9700	306	0	0	14200	252	27	54
800	173	66	133	5300	271	17	35	9800	306	0	0	14300	250	28	56
900	176	65	130	5400	272	17	34	9900	305	0	1	14400	248	29	58
1000	178	64	128	5500	274	16	32	10000	305	1	1	14500	245	30	61
1100	181	62	125	5600	276	15	30	10100	304	1	2	14600	243	31	63
1200	183	61	123	5700	277	14	29	10200	304	1	2	14700	241	32	65
1300	186	60	120	5800	279	13	27	10300	304	1	2	14800	238	34	68
1400	188	59	118	5900	280	13	26	10400	303	2	3	14900	236	35	70
1500	190	58	116	6000	282	12	24	10500	303	2	3	15000	234	36	72
1600	193	56	113	6100	283	11	23	10600	302	2	4	15100	231	37	75
1700	195	55	111	6200	284	11	22	10700	302	2	4	15200	229	38	77
1800	198	54	108	6300	286	10	20	10800	301	3	5	15300	226	40	80
1900	200	53	106	6400	287	10	19	10900	300	3	6	15400	224	41	82
2000	203	51	103	6500	288	9	18	11000	300	3	6	15500	221	42	85
2100	205	50	101	6600	289	8	17	11100	299	4	7	15600	219	43	87
2200	207	49	99	6700	290	8	16	11200	298	4	8	15700	217	45	89
2300	210	48	96	6800	291	7	15	11300	297	5	9	15800	214	46	92
2400	212	47	94	6900	293	6	13	11400	296	5	10	15900	211	47	95
2500	214	46	92	7000	294	6	12	11500	295	6	11	16000	208	49	98
2600	217	45	89	7100	295	5	11	11600	294	6	12	16100	206	50	100
2700	219	43	87	7200	296	5	10	11700	293	7	13	16200	203	51	103
2800	221	42	85	7300	297	4	9	11800	292	7	14	16300	200	53	106
2900	223	41	83	7400	298	4	8	11900	291	8	15	16400	198	54	108
3000	226	40	80	7500	298	4	8	12000	290	8	16	16500	195	55	111
3100	228	39	78	7600	299	3	7	12100	288	9	18	16600	192	57	114
3200	230	38	76	7700	300	3	6	12200	287	9	19	16700	190	58	116
3300	232	37	74	7800	301	2	5	12300	286	10	20	16800	187	60	119
3400	234	36	72	7900	301	2	5	12400	284	11	22	16900	184	61	122
3500	237	35	69	8000	302	2	4	12500	283	12	23	17000	181	62	125
3600	239	33	67	8100	303	2	3	12600	281	12	25	17100	178	64	128
3700	241	32	65	8200	303	1	3	12700	280	13	26	17200	176	65	130
3800	243	31	63	8300	304	1	2	12800	278	14	28	17300	173	66	133
3900	245	30	61	8400	304	1	2	12900	276	15	30	17400	170	68	136
4000	247	29	59	8500	304	1	2	13000	275	16	31	17500	167	69	139
4100	249	28	57	8600	305	1	1	13100	273	16	33	17600	164	71	142
4200	251	27	55	8700	305	0	1	13200	271	17	35	17700	162	72	144
4300	253	26	53	8800	305	0	1	13300	270	18	36	17800	159	73	147
4400	255	25	51	8900	306	0	0	13400	268	19	38	17900	156	75	150
4500	257	24	49	9000	306	0	0	13500	266	20	40	18000	153	76	153

SATELLITES.

TABLE I.—*continued.*

Corrections of the Arg.				Corrections of the Arg.				Corrections of the Arg.				Corrections of the Arg.			
Arg. A	Cor. B	Cor. C	Cor. H	Arg. A	Cor. B	Cor. C	Cor. H	Arg. A	Cor. B	Cor. C	Cor. H	Arg. A	Cor. B	Cor. C	Cor. H
18000	153	76	153	22500	40	133	266	27000	0	153	306	31500	49	128	257
18100	150	78	156	22600	38	134	268	27100	0	153	306	31600	51	127	255
18200	147	80	159	22700	36	135	270	27200	1	153	305	31700	53	126	253
18300	144	81	162	22800	35	135	271	27300	1	153	305	31800	55	125	251
18400	142	82	164	22900	33	136	273	27400	1	153	305	31900	57	124	249
18500	139	83	167	23000	31	137	275	27500	2	152	304	32000	59	123	247
18600	136	85	170	23100	30	138	276	27600	2	152	304	32100	61	122	245
18700	133	86	173	23200	28	139	278	27700	2	152	304	32200	63	121	243
18800	130	88	176	23300	26	140	280	27800	3	152	303	32300	65	120	241
18900	128	89	178	23400	25	140	281	27900	3	151	303	32400	67	119	239
19000	125	90	181	23500	23	141	283	28000	4	151	302	32500	69	118	237
19100	122	92	184	23600	22	142	284	28100	5	150	301	32600	72	117	234
19200	119	93	187	23700	20	143	286	28200	5	150	301	32700	74	116	232
19300	116	95	190	23800	19	143	287	28300	6	150	300	32800	76	115	230
19400	114	96	192	23900	18	144	288	28400	7	149	299	32900	78	114	228
19500	111	97	195	24000	16	145	290	28500	8	149	298	33000	80	113	226
19600	108	99	198	24100	15	145	291	28600	8	149	298	33100	83	112	223
19700	106	100	200	24200	14	146	292	28700	9	148	297	33200	85	111	221
19800	103	101	203	24300	13	146	293	28800	10	148	296	33300	87	110	219
19900	100	103	206	24400	12	147	294	28900	11	147	295	33400	89	109	217
20000	98	104	208	24500	11	148	295	29000	12	147	294	33500	92	108	214
20100	95	105	211	24600	10	148	296	29100	13	146	293	33600	94	107	212
20200	92	107	214	24700	9	149	297	29200	15	146	291	33700	96	105	210
20300	89	108	217	24800	8	149	298	29300	16	145	290	33800	99	103	207
20400	87	110	219	24900	7	150	299	29400	17	144	289	33900	101	102	205
20500	85	111	221	25000	6	150	300	29500	18	144	288	34000	103	101	203
20600	82	112	224	25100	6	150	300	29600	19	143	287	34100	106	100	200
20700	80	113	226	25200	5	151	301	29700	20	143	286	34200	108	99	198
20800	77	115	229	25300	4	151	302	29800	22	142	284	34300	111	97	195
20900	75	116	231	25400	4	151	302	29900	23	142	283	34400	113	96	193
21000	72	117	234	25500	3	151	303	30000	24	141	282	34500	116	95	190
21100	70	118	236	25600	3	152	303	30100	26	140	280	34600	118	94	188
21200	68	119	238	25700	2	152	304	30200	27	139	279	34700	120	93	186
21300	65	120	241	25800	2	152	304	30300	29	138	277	34800	123	92	183
21400	63	121	243	25900	2	152	304	30400	30	138	276	34900	125	90	181
21500	61	122	245	26000	1	152	305	30500	32	137	274	35000	128	89	178
21600	58	124	248	26100	1	153	305	30600	34	136	272	35100	130	88	176
21700	56	125	252	26200	0	153	306	30700	35	135	271	35200	133	86	173
21800	54	126	252	26300	0	153	306	30800	37	134	269	35300	135	85	171
21900	52	127	254	26400	0	153	306	30900	39	133	267	35400	138	84	168
22000	50	128	256	26500	0	153	306	31000	40	133	266	35500	140	83	166
22100	47	129	259	26600	0	153	306	31100	42	132	264	35600	143	81	163
22200	46	130	260	26700	0	153	306	31200	44	131	262	35700	145	80	161
22300	44	131	262	26800	0	153	306	31300	46	130	260	35800	148	79	158
22400	42	132	264	26900	0	153	306	31400	47	129	259	35900	150	78	156
22500	40	133	266	27000	0	153	306	31500	49	128	257	36000	153	76	153

Table II.

Common to the four Satellites of Jupiter.

Correction of B depending on the Argument S*.

Arg. S	Cor. B	Arg. S	Cor. B	Arg. S	Cor. B
0	53	3400	8	6700	100
100	50	3500	9	6800	102
200	46	3600	11	6900	103
300	43	3700	13	7000	104
400	40	3800	16	7100	105
500	37	3900	18	7200	106
600	34	4000	21	7300	106
700	31	4100	24	7400	106
800	28	4200	27	7500	106
900	25	4300	30	7600	106
1000	22	4400	33	7700	106
1100	19	4500	36	7800	105
1200	17	4600	39	7900	104
1300	15	4700	43	8000	103
1400	12	4800	46	8100	103
1500	10	4900	50	8200	101
1600	8	5000	53	8300	99
1700	7	5100	56	8400	98
1800	5	5200	60	8500	96
1900	3	5300	63	8600	94
2000	3	5400	67	8700	91
2100	2	5500	70	8800	89
2200	0	5600	73	8900	87
2300	0	5700	76	9000	84
2400	0	5800	79	9100	81
2500	0	5900	82	9200	78
2600	0	6000	85	9300	75
2700	0	6100	88	9400	72
2800	0	6200	90	9500	69
2900	1	6300	93	9600	66
3000	2	6400	95	9700	63
3100	3	6500	97	9800	60
3200	4	6600	98	9900	56
3300	6	6700	100	10000	53
3400	8				

* This Correction of B is common to the four Satellites.

Table III.

The Correſponding Dec. Parts of a Common Year.

Days of a Common Year.	Dec. Parts of a Com. Year.
10 January.	0.03
20	0.05
30	0.08
9 February.	0.11
19	0.14
1 March.	0.16
11	0.19
21	0.22
31	0.25
10 April.	0.27
20	0.30
30	0.33
10 May.	0.36
20	0.38
30	0.41
9 June.	0.44
19	0.47
29	0.49
9 July.	0.52
19	0.55
29	0.58
8 Auguſt.	0.60
18	0.63
28	0.66
7 September.	0.68
17	0.71
27	0.74
7 October.	0.77
17	0.79
27	0.82
6 November.	0.85
16	0.88
26	0.90
6 December.	0.93
16	0.96
26	0.99

TABLE IV. Common to the four Satellites.

Equation of Time for 1780, with the Secular Variation.

Argument S. Sun's mean Anomaly.

Arg. S.	Equation of Time.	Diff.	Sec. Var.	Diff.	Arg. S.	Equation of Time.	Diff.	Sec. Var.	Diff.	Arg. S.	Equation of Time.	Diff.	Sec. Var.	Diff.
	M. S.	SEC.	SEC.	S C.		M. S.	SEC.	SEC.	SEC.		M. S.	SEC.	SEC.	SEC.
0	− 3 21.2		− 34.8		3400	+ 16 14.8		+ 5.4		6800	− 11 28.8		+ 32.4	
100	4 1.8	40.6	32.8	2.0	3500	16 9.3	5.5	+ 0.9	5	6900	10 33.2	55.6	34.0	1.6
200	4 37.5	35.7	30.4	2.4	3600	15 53.3	16.0	− 3.9	4.8	7000	9 33.2	60.0	35.0	1.0
300	5 8.5	31.0	27.4	3.0	3700	15 25.5	27.8	8.3	4.4	7100	8 29.8	63.4	35.6	0.6
400	5 33.5	25.0	24.0	3.4	3800	14 46.2	39.3	12.9	4.6	7200	7 23.3	66.5	35.6	0.0
500	5 51.0	17.5	20.3	3.7	3900	13 56.3	49.9	17.3	4.4	7300	6 16.0	67.3	35.2	0.4
600	6 1.8	10.8	16.2	4.1	4000	12 55.8	60.5	21.5	4.2	7400	5 8.2	67.8	34.3	0.9
700	6 5.0	3.2	12.0	4.2	4100	11 45.0	70.8	25.4	3.9	7500	4 0.5	67.7	33.0	1.3
800	6 0.0	5.0	7.8	4.2	4200	10 24.8	80.2	28.8	3.4	7600	2 54.2	66.3	31.1	1.9
900	5 47.2	12.8	− 3.4	4.4	4300	8 56.3	88.5	31.8	3.0	7700	1 50.4	63.8	28.9	2.2
1000	5 26.2	21.0	+ 1.0	4.4	4400	7 20.2	96.1	34.2	2.4	7800	− 0 50.4	60 0	26.3	2.6
1100	4 57.5	28.7	5.2	4.2	4500	5 38.7	101.5	36.0	1.8	7900	+ 0 7.1	57.5	23.2	3.1
1200	4 21.5	36.0	9.4	4.2	4600	3 52.3	106.4	37.2	1.2	8000	0 58.8	51.7	19.8	3.4
1300	3 37.7	43.8	13.3	3.9	4700	2 4.4	107.9	37.6	0.4	8100	1 45.3	46.5	16.1	3.7
1400	2 47.8	49.9	17.0	3.7	4800	+ 0 15.0	109.4	37.3	0.3	8200	2 25.1	39.8	12.1	4.0
1500	1 51.8	56.0	20.3	3.3	4900	− 1 34.9	109.9	36.4	0.9	8300	2 58.7	33.6	8.0	4.1
1600	− 0 49.5	62.3	23.4	3.1	5000	3 21.2	106.3	34.8	1.6	8400	+ 3 24.9	26.2	+ 3.5	4.5
1700	+ 0 16.4	65.9	26.0	2.6	5100	5 4.9	103.7	32.5	2.3	8500	3 44.0	19.1	− 1.0	4.5
1800	1 27.2	70.8	28.3	2.3	5200	6 43.1	98.2	29.6	2.9	8600	3 55.2	11.2	5.5	4.5
1900	2 40.0	72.8	30.1	1.8	5300	8 13.5	90.4	26.2	3.4	8700	3 59.4	4.2	10.0	4.3
2000	3 55.6	75.6	31.5	1.4	5400	9 36.3	82.8	22.4	3.8	8800	3 55.5	3.9	14.3	4.2
2100	5 11.9	76.3	32.5	1.0	5500	10 50.3	74.0	18.2	4.2	8900	3 43.8	11.7	18.5	3.9
2200	6 28.2	76.3	33.0	0.5	5600	11 54.6	64.3	13.7	4.5	9000	3 25.2	18.6	22.4	3.6
2300	7 44.4	76.2	33.1	0.1	5700	12 48.7	54.1	9.0	4.7	9100	3 0.1	25.1	26.0	3.2
2400	8 59.2	74.8	32.7	0.4	5800	13 32.6	43.9	− 4.2	4.8	9200	2 29.5	30.6	29.2	2.7
2500	10 10.7	71.5	31.8	0.9	5900	14 5.1	32.5	+ 0.6	4.8	9300	1 53.4	36.1	31.9	2.2
2600	11 18.5	67.8	30.5	1.3	6000	14 26.2	21.1	5.2	4.6	9400	1 12.5	40.9	34.1	1.8
2700	12 21.7	63.2	28.8	1.7	6100	14 36.8	10.6	9.7	4.5	9500	+ 0 28.9	43.6	35.9	0.9
2800	13 18.4	56.7	26.6	2.2	6200	14 37.0	0.2	14.0	4.3	9600	− 0 16.9	45.8	36.8	0.4
2900	14 9.6	51.2	23.9	2.7	6300	14 27.3	9.7	18.1	4.1	9700	1 4.3	47.4	37.2	0.0
3000	14 52.8	43.2	20.9	3.0	6400	14 8.0	19.3	21.8	3.7	9800	1 51.4	47.1	37.2	0.8
3100	15 27.7	34.9	17.5	3.4	6500	13 39.1	28.9	25.1	3.3	9900	2 37.5	46.1	36.4	1.6
3200	15 53.4	25.7	13.7	3.8	6600	13 2.5	36.6	28.0	2.9	10000	− 3 21.2	43.7	− 34.8	
3300	16 9.2	15.8	9.6	4.1	6700	12 19.1	43.4	30.4	2.4					
3400	+ 16 14.8	5.6	+ 5.4	4.2	6800	− 11 28.8	50.3							

Table V. Equation of Light, common to the four Satellites.

Argument B Corrected.		Argument A.						
		00 36000	3000 33000	6000 30000	9000 27000	12000 24000	15000 21000	18000 18000
		SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.
0	10000	2.5	2.3	2.0	1.4	0.8	0.5	0.3
500	9500	2.4	2.3	2.0	1.4	0.9	0.6	0.5
1000	9000	2.0	1.9	1.8	1.4	1.1	0.9	0.9
1500	8500	1.5	1.4	1.4	1.4	1.5	1.4	1.4
2000	8000	0.8	0.8	1.0	1.4	1.8	2.0	2.1
2500	7500	0.3	0.5	0.8	1.4	2.0	2.3	2.5
3000	7000	0.3	0.4	0.8	1.4	2.0	2.4	2.6
3500	6500	0.8	0.8	1.1	1.4	1.8	2.0	2.1
4000	6000	1.5	1.5	1.5	1.4	1.4	1.3	1.4
4500	5500	2.3	2.2	1.9	1.4	1.0	0.9	0.8
5000	5000	2.5	2.3	2.0	1.4	0.8	0.5	2.1

Table VI. Equation of Light, common to all the Satellites.

Argument B Corrected.		Argument S. The mean Anomaly of the Sun.										
		0 10000	500 9500	1000 9000	1500 8500	2000 8000	2500 7500	3000 7000	3500 6500	4000 6000	4500 5500	5000 5000
		SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.
0	10000	16.7	16.3	15.0	13.2	10.8	8.3	5.8	3.5	1.6	0.5	0.0
500	9500	16.4	16.0	14.6	13.1	10.8	8.3	5.8	3.6	1.8	0.7	0.3
1000	9000	15.6	15.2	14.2	12.6	10.5	8.3	6.1	4.1	2.4	1.4	1.0
1500	8500	14.2	14.0	13.1	11.7	10.1	8.3	6.5	4.9	3.5	2.6	2.4
2000	8000	12.4	12.2	11.5	10.6	9.5	8.3	7.1	6.0	5.1	4.5	4.3
2500	7500	9.9	9.8	9.6	9.2	8.8	8.3	7.8	7.4	7.0	6.8	6.7
3000	7000	7.2	7.2	7.4	7.7	8.0	8.3	8.6	8.9	9.2	9.4	9.4
3500	6500	4.5	4.7	5.2	6.1	7.1	8.3	9.5	10.5	11.4	12.0	12.2
4000	6000	2.1	2.4	3.3	4.7	6.4	8.3	10.2	12.0	13.3	14.2	14.5
4500	5500	0.6	0.9	2.0	3.8	5.9	8.3	10.7	12.9	14.6	15.7	16.0
5000	5000	0.0	0.4	1.6	3.4	5.8	8.3	10.8	13.2	15.0	16.3	16.6

TABLE VII. Equation B.

Argument B Corrected.		Equation B.		Diff.	Argument B Corrected.		Equation B.		Diff.	Argument B Corrected.		Equation B.		Diff.
		M.	S.	SEC.			M.	S.	SEC.			M.	S.	SEC.
0	10000	16	26.4	0.8	1700	8300	12	43.6	25.0	3400	6600	4	26.1	28.2
100	9900	16	25.6	2.5	1800	8200	12	18.6	26.1	3500	6500	3	57.9	27.4
200	9800	16	23.1	4.0	1900	8100	11	52.5	26.9	3600	6400	3	30.5	26.3
300	9700	16	19.1	5.8	2000	8000	11	25.6	27.9	3700	6300	3	4.2	25.0
400	9600	16	13.3	7.2	2100	7900	10	57.7	28.6	3800	6200	2	39.2	23.7
500	9500	16	6.1	9.0	2200	7800	10	29.1	29.3	3900	6100	2	15.5	22.2
600	9400	15	57.1	10.4	2300	7700	9	59.8	29.6	4000	6000	1	53.3	20.4
700	9300	15	46.7	11.9	2400	7600	9	30.2	30.3	4100	5900	1	32.9	18.9
800	9200	15	34.8	13.6	2500	7500	8	59.9	30.6	4200	5800	1	14.0	16.8
900	9100	15	21.2	14.9	2600	7400	8	29.3	30.9	4300	5700	0	57.2	14.7
1000	9000	15	6.3	16.5	2700	7300	7	58.4	30.9	4400	5600	0	42.5	12.9
1100	8900	14	49.8	17.7	2800	7200	7	27.5	30.9	4500	5500	0	29.6	10.5
1200	8800	14	32.1	19.3	2900	7100	6	56.6	30.8	4600	5400	0	19.1	8.4
1300	8700	14	12.8	20.4	3000	7000	6	25.8	30.6	4700	5300	0	10.7	5.8
1400	8600	13	52.4	21.8	3100	6900	5	55.2	30.2	4800	5200	0	4.9	3.6
1500	8500	13	30.6	22.9	3200	6800	5	25.0	29.8	4900	5100	0	1.3	1.3
1600	8400	13	7.7	24.1	3300	6700	4	55.2	29.1	5000	5000	0	0.0	
1700	8300	12	43.6		3400	6600	4	26.1						

TABLE VIII. *Epochs* of the mean Conjunctions of Jupiter's *First* Satellite, with the Arguments of the Equations.

Years.		Mean Conjunction.				A	S	B	C	F	G	H
		D.	H.	M.	S.							
	1800	1	14	20	13.9	25114	5056	5326	5183	569	924	3397
	1801	1	4	31	38.6	28142	5038	4467	9348	326	675	4239
	1802	0	18	43	3.3	31172	5020	3607	3514	082	426	5080
	1803	0	8	54	28.1	34201	5002	2747	7679	839	177	5922
B.	1804	0	17	34	28.7	1245	5032	1932	6865	599	932	6767
	1805	0	7	45	53.4	4274	5013	1073	1030	355	683	7608
	1806	1	16	25	54.1	7318	5045	0260	0214	116	437	8451
	1807	1	6	37	18.8	10347	5027	9401	4379	872	188	9292
B.	1808	1	15	17	19.5	13392	5057	8587	3564	632	942	0136
	1809	1	5	28	44.2	16422	5039	7727	7730	389	693	0978
	1810	0	19	40	8.9	19450	5020	6866	1896	145	444	1820
	1811	0	9	51	33.6	22479	5002	6005	6062	902	195	2664
B.	1812	0	18	31	34.3	25523	5032	5187	5249	662	950	3511
	1813	0	8	42	59.0	28552	5014	4327	9415	418	701	4354
	1814	1	17	22	59.7	31596	5044	3511	8601	175	451	5200
	1815	1	7	34	24.4	34625	5026	2652	2766	935	206	6041
B.	1816	1	16	14	25.0	1669	5056	1837	1951	695	961	6886
	1817	1	6	25	49.8	4699	5038	0979	6116	452	711	7726
	1818	0	20	37	14.4	7728	5019	0121	0281	208	462	8565
	1819	0	10	48	39.1	10757	5001	9263	4445	965	213	9405
	1820	0	19	26	39.8	13801	5031	8449	3630	725	968	0250

TABLE VIII.—*continued.* Epochs, &c. of Jupiter's *Second* Satellite.

Years.	Mean Conjunct.				A	S	B	C	D	E	F	G	H	I	K	L
	D.	H.	M.	S.												
1800	3	10	14	8.8	25131	5104	5353	2703	468	112	573	928	3401	5137	1055	5985
1801	0	22	39	29.2	28143	5028	4441	6845	544	194	325	675	4238	5993	1965	7153
1802	2	0	22	43.5	31185	5051	3618	6028	621	277	085	429	5083	6857	2884	8333
1803	3	2	5	57.7	34226	5073	2796	5210	697	359	845	183	5928	7720	3803	9512
B. 1804	3	3	49	11.9	01268	5095	1973	4392	774	442	604	937	6773	8584	4722	0691
1805	0	16	14	32.4	04280	5020	1062	8534	851	523	356	683	7609	9438	5631	1858
1806	1	17	57	46.6	07321	5042	0241	7715	927	606	116	437	8451	0300	6546	3036
1807	2	19	41	0.8	10363	5065	9420	6897	004	688	875	191	9295	1163	7465	4214
B. 1808	2	21	24	15.0	13404	5087	8599	6079	081	770	635	945	0139	2025	8383	5392
1809	0	9	49	35.5	16416	5012	7687	0221	157	852	387	692	0976	2881	9293	6560
1810	1	11	32	49.7	19458	5034	6863	9403	234	935	147	446	1822	3746	0213	7741
1811	2	13	16	3.9	22499	5056	6039	8586	311	017	906	200	2669	4611	1134	8922
B. 1812	2	14	59	18.2	25541	5078	5214	7769	388	100	666	954	3516	5477	2055	0103
1813	0	3	24	38.6	28553	5003	4301	1912	464	182	418	700	4353	6333	2966	1273
1814	1	5	7	52.9	31594	5026	3478	1095	541	265	178	454	5199	7198	3884	2453
1815	2	6	51	7.1	34636	5048	2656	0277	6 8	347	937	208	6043	8061	4804	3631
B. 1816	2	8	34	21.3	01678	5070	1835	9459	695	430	697	962	6887	8924	5722	4810
1817	3	10	17	35.5	04719	5092	1013	8641	772	522	456	716	7731	9786	6639	5988
18 8	0	22	42	56.0	07731	5017	0103	2782	848	693	209	463	8566	0640	7547	7154
1819	2	0	26	10.2	10772	5039	9283	1963	924	776	968	217	9410	1501	8464	8331
B. 1820	2	2	9	24.4	13814	5063	8461	1144	001	858	728	970	0253	2364	9382	9510

TABLE VIII.—*continued.* Epochs, &c. of Jupiter's *Third* Satellite.

Years.	Mean Conjunct.				A	S	B	c	C	D	E	F	G	H	I	K	L
	D.	H.	M.	S.													
1800	5	8	41	42.0	25148	5156	5400	751	544	468	113	085	425	3406	5143	1060	5989
1801	5	20	21	9.2	28184	5162	4563	935	379	545	195	843	177	4250	6006	1977	7168
1802	6	8	0	36.3	31221	5168	3726	120	214	621	278	602	930	5093	6868	2894	8346
1803	6	19	40	3.4	34258	5174	2888	304	050	698	360	360	683	5937	7730	3812	9523
B. 1804	6	7	19	30.5	01295	5180	2051	489	885	775	442	118	436	6780	8592	4729	0701
1805	6	18	58	57.6	04334	5186	1215	673	720	852	525	877	188	7623	9454	5646	1877
1806	0	2	38	48.9	07308	4996	0200	286	539	927	605	620	926	8448	0297	6543	3030
1807	0	14	18	16.0	10345	5003	9363	470	374	004	688	379	679	9290	1158	7460	4206
B. 1808	0	1	57	43.1	13381	5009	8527	655	209	080	770	137	432	0133	2020	8376	5382
1809	0	13	37	10.2	16418	5015	7690	840	044	157	852	895	185	0977	2882	9293	6560
1810	1	1	16	37.4	19454	5021	6852	024	879	234	935	654	937	1821	3745	0212	7738
1811	1	12	56	4.5	22491	5027	6012	209	714	311	017	412	690	2667	4610	1131	8918
B. 1812	1	0	35	31.6	25528	5034	5173	393	549	388	100	170	443	3512	5474	2051	0097
1813	1	12	-4	58.7	28564	5040	4335	578	385	464	183	929	195	4357	6337	2969	1276
1814	1	23	54	25.8	31601	5046	3496	762	220	541	265	687	948	5201	7202	3888	2455
1815	2	11	33	52.9	34638	5052	2660	947	055	618	347	445	701	6042	8062	4804	3631
B. 1816	1	23	13	20.0	01674	5058	1824	132	890	695	430	204	454	6886	8923	5720	4807
1817	2	10	52	47.1	04711	5065	0988	316	725	772	512	962	206	7729	9785	6637	5984
1818	2	22	32	14.3	07748	5071	0152	501	560	848	594	720	959	8570	0645	7552	7160
1819	3	10	11	41.4	10785	5077	9316	685	396	925	676	479	712	9411	1505	8468	8335
B. 1820	2	21	51	8.5	13821	5083	8481	870	230	001	759	237	465	0254	2367	9384	9512

Table VIII.—*continued.* Epochs, &c. of Jupiter's *Fourth* Satellite.

Years.	Mean Conjunction.				A	S	B	C	D	E	H	I	K
	D.	H.	M.	S.									
1800	1	2	52	35.2	25114	5051	5321	1150	467	421	3397	5133	1050
1801	4	16	45	9.8	28176	5142	4562	1981	544	853	4247	6003	1975
1802	8	6	37	44.3	31238	5232	3802	2812	622	284	5098	6872	2900
1803	11	20	30	18.9	34300	5323	3042	3644	699	716	5949	7742	3825
B. 1804	14	10	22	53.4	01363	5414	2282	4474	777	147	6799	8612	4751
1805	1	6	10	20.9	04286	5046	1103	5266	850	241	7610	9441	5633
1806	4	20	2	55.5	7349	5137	0346	6097	928	672	8459	0309	6556
1807	8	9	55	30.1	10411	5228	9587	6925	005	104	9309	1177	7480
B. 1808	10	23	48	4.6	13473	5319	8828	7755	082	535	0159	2046	8484
1809	14	13	40	39.2	16536	5410	8068	8586	160	967	1009	2915	9329
1810	1	9	28	6.7	19459	5042	6888	9380	234	060	1822	3747	0214
1811	4	23	20	41.2	22521	5133	6126	0213	311	492	2675	4618	1141
B. 1812	7	13	13	15.8	25584	5224	5364	1046	388	924	3528	5490	2068
1813	11	3	5	50.4	28646	5314	4603	1878	467	355	4379	6361	2994
1814	14	16	58	24.9	31708	5405	3843	2709	544	787	5231	7231	3920
1815	1	12	45	52.4	34632	5037	2664	3502	618	881	6040	8060	4802
B. 1816	4	2	38	27.0	1694	5128	1905	4332	695	312	6890	8929	5726
1817	7	16	31	1.6	4756	5219	1146	5161	773	744	7742	9798	6651
1818	11	6	23	36.1	7818	5310	0388	5991	850	175	8595	0665	7574
1819	14	20	16	10.7	10881	5401	9631	6820	927	606	9446	1533	8497
B. 1820	0	16	3	38.2	13804	5033	8452	7611	001	700	0257	2362	9379

Table IX. Revolutions of Jupiter's *Firſt* Satellite for *Months*.

Months.	D.	H.	M.	S.	A	S	B	C	F	G	H
January - -	1	18	28	35.9	15	48	44	5020	4	4	4
	3	12	57	11.9	29	97	88	0040	7	7	8
	5	7	25	47.8	44	145	133	5061	11	11	12
	7	1	54	23.8	59	194	177	0081	15	15	16
	8	20	22	59.7	74	242	222	5101	18	18	20
	10	14	51	35.7	88	291	266	0121	22	22	25
	12	9	20	11.6	103	339	311	5142	26	26	29
	14	3	48	47.6	118	388	355	0162	29	29	33
	15	22	17	23.5	132	436	399	5182	33	33	37
	17	16	45	59.4	147	485	444	0202	37	36	41
	19	11	14	35.4	162	533	488	5222	40	40	45
	21	5	43	11.3	176	581	532	0243	44	44	49
	23	0	11	47.3	191	630	577	5263	48	47	53
	24	18	40	23.2	206	678	621	0283	51	51	57
	26	13	8	59.2	221	727	666	5303	55	55	61
	28	7	37	35.1	235	775	710	0324	59	58	65
	30	2	6	11.1	250	824	754	5344	62	62	69
January -	31	20	34	47.0	265	872	799	0364	66	66	74
February -	0	20	34	47.0	265	872	799	0364	66	66	74
	2	15	3	22.9	279	921	843	5384	70	69	78
	4	9	31	58.9	294	969	887	0404	73	73	82
	6	4	00	34.8	309	1018	932	5425	77	77	86

In Leap Year, add 1 to the Day of the Month in January and February.

TABLE IX.—*continued.* Revolutions of Jupiter's *First* Satellite for *Months.*

Months.	D.	H.	M.	S.	A	S	B	C	F	G	H
February - -	7	22	29	10.8	324	1066	976	0445	81	80	90
	9	16	57	46.7	338	1114	1021	5465	84	84	94
	11	11	26	22.7	353	1163	1065	0485	88	87	98
	13	5	54	58.6	368	1211	1109	5506	92	91	102
	15	0	23	34.6	382	1260	1154	0526	95	95	106
	16	18	52	10.5	397	1308	1198	5546	99	98	110
	18	13	20	46.4	412	1357	1242	0566	103	102	114
	20	7	49	22.4	426	1405	1287	5586	106	106	119
	22	2	17	58.3	441	1454	1331	0607	110	109	123
	23	20	46	34.3	456	1502	1375	5627	114	113	127
	25	15	15	10.2	471	1551	1420	0647	118	116	131
	27	9	43	46.2	485	1599	1464	5667	121	120	135
February - -	29	4	12	22.1	500	1647	1509	0687	125	124	139
March - -	1	4	12	22.1	500	1647	1509	0687	125	124	139
	2	22	40	58.1	515	1696	1553	5708	129	128	143
	4	17	9	34.0	529	1744	1597	0728	132	131	147
	6	11	38	9.9	544	1793	1642	5748	136	135	151
	8	6	6	45.9	559	1841	1686	0768	140	139	155
	10	0	35	21.8	573	1890	1730	5789	143	142	159
	11	19	3	57.8	588	1938	1775	0809	147	146	163
	13	13	32	33.7	603	1987	1819	5829	151	149	168
	15	8	1	9.7	618	2035	1864	0849	154	153	172
	17	2	29	45.6	632	2084	1908	5869	158	157	176
	18	20	58	21.6	647	2132	1952	0890	162	160	180
	20	15	26	57.5	662	2180	1997	5910	165	164	184
	22	9	55	33.4	676	2229	2041	0930	169	168	188
	24	4	24	9.4	691	2277	2085	5950	173	171	192
	25	22	52	45.3	706	2326	2130	0971	176	175	196
	27	17	21	21.3	721	2374	2174	5991	180	179	200
	29	11	49	57.2	735	2423	2219	1011	184	182	204
March - -	31	6	18	33.2	750	2471	2263	6031	187	186	208
April - -	2	0	47	9.2	765	2520	2307	1051	191	190	213
	3	19	15	45.2	779	2568	2352	6072	195	193	217
	5	13	44	21.1	794	2617	2396	1092	198	197	221
	7	8	12	57.0	809	2665	2440	6112	202	200	225
	9	2	41	33.0	823	2713	2485	1132	206	204	229
	10	21	10	8.9	838	2762	2529	6153	209	208	233
	12	15	38	44.9	853	2810	2573	1173	213	211	237
	14	10	7	20.8	868	2859	2618	6193	217	215	241
	16	4	35	56.8	882	2907	2662	1213	220	219	245
	17	23	4	32.7	897	2956	2707	6233	224	222	249
	19	17	33	8.7	912	3004	2751	1254	228	226	253
	21	12	1	44.6	926	3053	2795	6274	231	230	257
	23	6	30	20.5	941	3101	2840	1294	235	233	262
	25	0	58	56.5	956	3150	2884	6314	239	237	266
	26	19	27	32.4	971	3198	2928	1335	242	241	270
	28	13	56	8.4	985	3246	2973	6355	246	244	274

TABLE IX.—*continued.* Revolutions of Jupiter's *Firſt* Satellite for *Months.*

Months.	D.	H.	M.	S.	A	S	B	C	F	G	H
April - -	30	8	24	44.3	1000	3295	3017	1375	250	248	278
May - -	0	8	24	44.3	1000	3295	3017	1375	250	248	278
	2	2	53	20.3	1015	3343	3062	6395	253	252	282
	3	21	21	56.2	1029	3391	3106	1415	257	255	286
	5	15	50	32.2	1044	3440	3150	6436	261	259	290
	7	10	19	8.1	1059	3489	3195	1456	264	262	294
	9	4	47	44.0	1073	3537	3239	6476	268	266	298
	10	23	16	20.0	1088	3586	3283	1496	272	270	302
	12	17	44	55.9	1103	3634	3328	6517	275	273	307
	14	12	13	31.9	1118	3683	3372	1537	279	277	311
	16	6	42	7.8	1132	3731	3416	6557	283	281	315
	18	1	10	43.8	1147	3779	3461	1577	286	284	319
	19	19	39	19.7	1162	3828	3505	7697	290	288	323
	21	14	7	55.7	1176	3876	3550	1618	294	292	327
	23	8	36	31.6	1191	3925	3594	6638	297	295	331
	25	3	5	7.5	1206	3973	3638	1658	301	299	335
	26	21	33	43.5	1221	4022	3683	6678	305	303	339
	28	16	2	19.4	1235	4070	3727	1698	308	306	343
May - -	30	10	30	55.4	1250	4119	3771	6719	312	310	347
June - -	1	4	59	31.3	1265	4167	3816	1739	316	313	351
	2	23	28	7.3	1279	4216	3860	6759	319	317	356
	4	17	56	43.2	1294	4264	3905	1779	323	321	360
	6	12	25	19.2	1309	4312	3949	6800	327	324	364
	8	6	53	55.1	1323	4361	3993	1820	331	328	368
	10	1	22	31.0	1338	4409	4038	6840	334	332	372
	11	19	51	7.0	1353	4458	4082	1860	338	335	376
	13	14	19	42.9	1368	4506	4126	6880	342	339	380
	15	8	48	18.9	1382	4555	4171	1901	345	343	384
	17	3	16	54.8	1397	4603	4215	6921	349	346	388
	18	21	45	30.8	1412	4652	4260	1941	353	350	392
	20	16	14	6.7	1426	4700	4304	6961	356	354	396
	22	10	42	42.7	1441	4749	4348	1982	360	357	400
	24	5	11	18.6	1456	4797	4393	7002	364	361	405
	25	23	39	54.5	1470	4846	4437	2022	367	365	409
	27	18	8	30.5	1485	4894	4481	7042	371	368	413
June - -	29	12	37	6.4	1500	4942	4526	2062	375	372	417
July - -	1	7	5	42.4	1515	4991	4570	7083	378	376	421
	3	1	34	18.3	1529	5039	4614	2103	382	379	425
	4	20	2	54.3	1544	5088	4659	7123	386	383	429
	6	14	31	30.2	1559	5136	4703	2143	389	386	433
	8	9	0	6.2	1573	5185	4748	7164	393	390	437
	10	3	28	42.1	1588	5233	4792	2184	397	394	441
	11	21	57	18.0	1603	5282	4836	7204	400	397	445
	13	16	25	54.0	1618	5330	4881	2224	404	401	450
	15	10	54	29.9	1632	5379	4925	7245	408	405	454
	17	5	23	5.9	1647	5427	4969	2265	411	408	458
	18	23	51	41.8	1662	5475	5014	7285	415	412	462

TABLE IX.—*continued.* Revolutions of Jupiter's *Firſt* Satellite for *Months.*

Months.	D.	H.	M.	S.	A	S	B	C	F	G	H
July	20	18	20	17.8	1676	5524	5058	2305	419	416	466
	22	12	48	53.7	1691	5572	5103	7325	422	419	470
	24	7	17	29.7	1706	5621	5147	2346	426	423	474
	26	1	46	5.6	1720	5669	5191	7366	430	426	478
	27	20	14	41.5	1735	5718	5236	2386	433	430	482
	29	14	43	17.5	1750	5766	5280	7406	437	434	486
July	31	9	11	53.4	1765	5815	5324	2427	441	437	490
Auguſt	2	3	40	29.4	1779	5863	5369	7447	444	441	495
	3	22	9	5.3	1794	5912	5413	2467	448	445	499
	5	16	37	41.3	1809	5960	5458	7487	452	448	503
	7	11	6	17.2	1823	6008	5502	2507	455	452	507
	9	5	34	53.2	1838	6057	5546	7528	459	456	511
	11	0	3	29.1	1853	6105	5591	2548	463	459	515
	12	18	32	5.0	1868	6154	5635	7568	466	463	519
	14	13	0	41.0	1882	6202	5679	2588	470	467	523
	16	7	29	16.9	1897	6251	5724	7608	474	470	527
	18	1	57	52.9	1912	6299	5768	2629	477	474	531
	19	20	26	28.8	1926	6348	5812	7649	481	478	535
	21	14	55	4.8	1941	6396	5857	2669	485	481	539
	23	9	23	40.7	1956	6445	5901	7689	488	485	544
	25	3	52	16.7	1971	6493	5946	2710	492	488	548
	26	22	20	52.6	1985	6541	5990	7730	496	492	552
	28	16	49	28.5	2000	6590	6034	2750	499	496	556
Auguſt	30	11	18	4.5	2015	6638	6079	7770	503	499	560
September	1	5	46	40.4	2029	6687	6123	2790	507	503	564
	3	0	15	16.4	2044	6735	6167	7811	510	507	568
	4	18	43	52.3	2059	6784	6212	2831	514	510	572
	6	13	12	28.3	2073	6832	6256	7851	518	514	576
	8	7	41	4.2	2088	6881	6301	2871	521	518	580
	10	2	9	40.2	2103	6929	6345	7892	525	521	584
	11	20	38	16.1	2118	6978	6389	2912	529	525	589
	13	15	6	52.0	2132	7026	6434	7932	532	529	593
	15	9	35	28.0	2147	7074	6478	2952	536	532	597
	17	4	4	3.9	2162	7123	6522	7972	540	536	601
	18	22	32	39.9	2176	7171	6567	2993	544	539	605
	20	17	1	15.8	2191	7220	6611	8013	547	543	609
	22	11	29	51.8	2206	7268	6655	3033	551	547	613
	24	5	58	27.7	2220	7417	6700	8053	555	550	617
	26	0	27	3.7	2235	7365	6744	3074	558	554	621
	27	18	55	39.6	2250	7414	6789	8094	562	558	625
September	29	13	24	15.5	2265	7462	6833	3114	566	561	629
October	1	7	52	51.5	2279	7511	6877	8134	569	565	633
	3	2	21	27.5	2294	7559	6922	3154	573	569	638
	4	20	50	3.5	2309	7607	6966	8175	577	572	642
	6	15	18	39.4	2323	7656	7010	3195	580	576	646
	8	9	47	15.4	2338	7704	7055	8215	584	580	650
	10	4	15	51.3	2353	7753	7099	3235	588	583	654

TABLE IX.—*continued.* Revolutions of Jupiter's *Firſt* Satellite for *Months.*

Months.	D.	H.	M.	S.	A	S	B	C	F	G	H
October - -	11	22	44	27.3	2367	7801	7144	8256	591	587	658
	13	17	13	3.3	2382	7850	7188	3276	595	591	662
	15	11	41	39.1	2397	7898	7232	8296	599	594	666
	17	6	10	15.1	2412	7947	7277	3316	602	598	670
	19	0	38	51.0	2426	7995	7321	8336	606	601	674
	20	19	7	27.0	2441	8044	7365	3357	610	605	678
	22	13	36	2.9	2456	8092	7410	8377	613	609	683
	24	8	4	38.9	2470	8140	7454	3397	617	612	687
	26	2	33	14.8	2485	8189	7499	8417	621	616	691
	27	21	1	50.8	2500	8237	7543	3438	624	620	695
	29	15	30	26.7	2515	8286	7587	8458	628	623	699
October - -	31	9	59	2.6	2529	8334	7632	3478	632	627	703
November -	2	4	27	38.6	2544	8383	7676	8498	635	631	708
	3	22	56	14.5	2559	8431	7720	3518	639	634	711
	5	17	24	50.5	2573	8480	7765	8539	643	638	715
	7	11	53	26.4	2588	8528	7809	3559	646	642	719
	9	6	22	2.4	2603	8577	7853	8579	650	646	723
	11	0	50	38.3	2617	8625	7898	3599	654	649	717
	12	19	19	14.3	2632	8673	7942	8619	657	652	731
	14	13	47	50.2	2647	8722	7987	3640	661	656	736
	16	8	16	26.1	2662	8770	8031	8660	665	660	740
	18	2	45	2.1	2677	8819	8075	3680	668	663	744
	19	21	13	38.0	2691	8867	8120	8700	672	667	748
	21	15	42	14.0	2706	8916	8164	3721	676	671	752
	23	10	10	49.9	2720	8964	8208	8741	679	674	756
	25	4	39	25.9	2735	9013	8253	3761	683	678	760
	26	23	8	1.8	2750	9061	8297	8781	687	682	764
	28	17	36	37.8	2765	9110	8342	3801	690	685	768
November -	30	12	5	13.7	2779	9158	8386	8822	694	689	772
December -	2	6	33	49.6	2794	9206	8430	3842	698	693	777
	4	1	2	25.6	2809	9255	8475	8862	701	696	781
	5	19	31	1.5	2823	9303	8519	3882	705	700	785
	7	13	59	37.5	2838	9352	8563	8903	709	704	789
	9	8	28	13.4	2853	9400	8608	3923	713	707	793
	11	2	56	49.4	2867	9449	8652	8943	716	711	797
	12	21	25	25.3	2882	9497	8697	3963	720	714	801
	14	15	54	1.3	2897	9546	8741	8983	723	718	805
	16	10	22	37.2	2912	9594	8785	4004	727	722	809
	18	4	51	13.1	2926	9643	8830	9024	731	725	813
	19	23	19	49.1	2941	9691	8874	4044	734	729	817
	21	17	48	25.0	2956	9739	8918	9064	738	733	821
	23	12	17	1.0	2970	9788	8963	4085	742	736	826
	25	6	45	36.9	2985	9836	9007	9105	745	740	830
	27	1	14	12.9	3000	9885	9051	4125	749	744	834
	28	19	42	48.8	3015	9933	9096	9145	753	747	838
December -	30	14	11	24.8	3029	9982	9140	4165	756	751	842
January - -	1	8	40	0.7	3044	0030	9185	9186	760	755	846

TABLE IX.—*continued.* Revolutions of Jupiter's *Second* Satellite for *Months.*

Months.	Change of the Mean Conjunction.				A	S	B	C	D	E	F	G	H	I	K	L
	D.	H.	M.	S.												
January -	3	13	17	53.7	30	97	89	5040	1	1	7	7	8	8	9	11
	7	2	35	47.5	59	195	178	081	1	2	15	15	16	17	18	23
	10	15	53	41.2	89	292	267	5122	2	2	22	22	25	25	27	34
	14	5	11	34.9	118	389	356	162	3	3	29	29	33	34	36	46
	17	18	29	28.7	148	487	446	5203	4	4	37	37	41	42	45	57
	21	7	47	22.4	177	584	535	244	4	5	44	44	49	50	54	69
	24	21	5	16.1	267	681	624	5284	5	6	52	51	57	59	62	80
	28	10	23	9.8	236	778	713	325	6	6	59	59	66	67	71	92
January -	31	23	41	3.6	266	876	802	5365	7	7	66	66	74	75	80	103
February -	4	12	58	57.3	295	973	891	406	7	8	74	73	82	84	89	115
	8	2	16	51.0	325	1070	980	5447	8	9	81	80	90	92	98	126
	11	15	34	44.8	354	1168	1069	487	9	10	88	88	98	101	107	137
	15	4	52	38.5	384	1265	1158	5528	10	10	96	92	107	109	116	149
	18	18	10	32.2	413	1362	1247	568	10	11	103	102	115	117	125	160
	22	7	28	26.0	443	1460	1337	5609	11	12	111	110	123	126	134	172
February -	25	20	46	19.7	472	1557	1426	650	12	13	118	117	131	134	143	183
March -	1	10	4	13.4	502	1654	1515	5690	13	14	125	124	139	143	152	195
	4	23	22	7.1	532	1751	1604	731	13	14	133	132	148	151	161	206
	8	12	40	0.9	561	1849	1693	5771	14	15	140	139	156	159	170	218
	12	1	57	54.6	591	1946	1782	812	15	16	147	146	164	168	178	229
	15	15	15	48.3	620	2043	1871	5853	16	17	155	154	172	176	187	240
	19	4	33	42.1	650	2141	1960	893	16	18	162	161	180	184	196	252
	22	17	51	35.8	679	2238	2049	5934	17	18	170	168	189	193	205	263
	26	7	9	29.5	709	2335	2138	975	18	19	177	176	197	201	214	275
March -	29	20	27	23.3	738	2433	2228	6015	19	20	184	183	205	210	223	286
April -	2	9	45	17.0	768	2530	2317	1056	19	21	192	190	213	218	232	298
	5	23	3	10.7	797	2627	2406	6096	20	22	199	198	221	226	241	309
	9	12	21	4.4	827	2724	2495	1137	21	22	206	205	230	235	250	321
	13	1	38	58.2	856	2822	2584	6178	22	23	214	212	238	243	259	332
	16	14	56	51.9	886	2919	2673	1218	22	24	221	220	246	251	268	344
	20	4	14	45.6	915	3016	2762	6259	23	25	229	227	254	260	277	355
	23	17	32	39.4	945	3114	2851	1299	24	26	236	234	262	268	285	366
	27	6	50	33.1	974	3211	2940	6340	25	26	243	241	271	277	294	378
April -	30	20	8	26.8	1004	3308	3029	1381	25	27	251	249	279	285	303	389
May -	4	9	26	20.6	1034	3406	3119	6421	26	28	258	256	287	293	312	401
	7	22	44	14.3	1063	3503	3208	1462	27	29	265	263	295	302	321	412
	11	12	2	8.0	1093	3600	3297	6502	28	30	273	271	304	310	330	424

In Biſſextile Years, add 1 Day in the Months of January and February.

TABLE IX.—*continued.* Revolutions of Jupiter's *Second* Satellite for *Months.*

Months.	Change of the Mean Conjunction.				A	S	B	C	D	E	F	G	H	I	K	L
	D.	H.	M.	S.												
May -	15	1	20	1.7	1122	3698	3386	1543	28	30	280	278	312	319	339	435
	18	14	37	55.5	1152	3795	3475	6584	29	31	288	285	320	327	348	446
	22	3	55	49.2	1181	3892	3564	1624	30	32	295	293	328	335	357	458
	25	17	13	42.9	1211	3989	3653	6665	31	33	302	300	336	344	366	469
May -	29	6	31	36.7	1240	4087	3742	1705	31	34	310	307	345	352	375	481
June -	1	19	49	30.4	1270	4184	3831	6746	32	34	317	315	353	361	384	592
	5	9	7	24.1	1299	4281	3920	1787	33	35	324	322	361	369	393	504
	8	22	25	17.9	1329	4379	4010	6827	34	36	332	329	369	377	401	515
	12	11	43	11.6	1358	4476	4099	1868	34	37	339	337	377	386	410	527
	16	1	1	5.3	1388	4573	4189	6908	35	38	347	344	386	394	419	538
	19	14	18	59.0	1417	4671	4277	1949	36	38	354	351	394	403	428	550
	23	3	36	52.8	1447	4768	4366	6990	37	39	361	359	402	411	437	561
	26	16	54	46.5	1476	4865	4455	2030	37	40	369	366	410	419	446	573
June -	30	6	12	40.2	1506	4962	4544	7071	38	41	376	373	418	428	455	584
July -	3	19	30	34.0	1536	5060	4633	2111	39	42	383	381	427	436	464	595
	7	8	48	27.7	1565	5157	4722	7152	40	42	391	388	435	444	473	607
	10	22	6	21.4	1595	5254	4811	2193	40	43	398	395	443	453	482	618
	14	11	24	15.2	1624	5352	4901	7233	41	44	406	402	451	461	491	630
	18	0	42	8.9	1654	5449	4990	2274	42	45	413	410	459	470	500	641
	21	14	0	2.6	1684	5546	5079	7314	43	46	420	417	468	478	509	653
	25	3	17	56.4	1713	5644	5168	2355	43	46	428	425	476	486	517	664
July -	28	16	35	50.1	1742	5741	5257	7396	44	47	435	432	484	495	526	676
Auguſt -	1	5	53	43.8	1772	5838	5346	2436	45	48	442	439	492	503	535	687
	4	19	11	37.5	1801	5935	5435	7477	45	49	450	446	500	512	544	698
	8	8	29	31.3	1831	6033	5524	2518	46	50	457	454	509	520	553	710
	11	21	47	25.0	1860	6130	5613	7558	47	50	465	461	517	528	562	721
	15	11	5	18.7	1890	6227	5702	2599	48	51	472	468	525	537	571	733
	19	0	23	12.5	1919	6325	5792	7639	49	52	479	476	533	545	580	744
	22	13	41	6.2	1949	6422	5881	2680	49	53	487	483	541	553	589	756
	26	2	58	59.9	1978	6519	5970	7721	50	54	494	490	550	562	598	767
Auguſt -	29	16	16	53.7	2008	6617	6059	2761	51	54	501	498	558	570	607	779
September -	2	5	34	47.5	2038	6714	6148	7802	52	55	509	505	566	579	616	790
	5	18	52	41.1	2067	6811	6237	2842	52	56	516	512	574	587	624	802
	9	8	10	34.8	2097	6909	6326	7883	53	57	524	520	582	595	633	813
	12	21	28	28.6	2126	7006	6415	2924	54	58	531	527	591	604	642	824
	16	10	46	22.3	2156	7103	6504	7964	55	58	538	534	599	612	651	836
	20	0	4	16.0	2185	7200	6593	3005	55	59	546	541	607	621	660	847

TABLE IX.—*continued.* Revolutions of Jupiter's *Second* Satellite for *Months.*

Months.	Change of the Mean Conjunction.				A	S	B	C	D	E	F	G	H	I	K	L
	D.	H.	M.	S.												
September -	23	13	22	9.8	2215	7298	6683	8045	56	60	553	549	615	629	669	859
	27	2	40	3.5	2244	7395	6772	3086	57	61	560	556	623	637	678	870
September -	30	15	57	57.2	2274	7492	6861	8127	57	62	568	563	632	646	687	882
October -	4	5	15	51.0	2303	7590	6950	3167	58	62	575	571	640	654	696	893
	7	18	33	44.6	2333	7687	7039	8208	59	63	583	579	648	662	705	905
	11	7	51	38.4	2362	7784	7128	3248	60	64	590	586	656	671	714	916
	14	21	9	32.1	2392	7882	7217	8289	60	65	597	593	664	679	723	927
	18	10	27	25.9	2421	7979	7306	3330	61	66	605	600	673	688	732	939
	21	23	45	19.6	2451	8076	7395	8370	62	66	612	607	681	696	740	950
	25	13	3	13.3	2480	8173	7484	3411	62	67	619	615	689	704	749	962
October -	29	2	21	7.1	2510	8271	7574	8451	63	68	627	622	697	713	758	973
November -	1	15	39	0.8	2540	8368	7663	3492	64	69	634	629	705	721	767	985
	5	4	56	54.5	2569	8465	7752	8533	65	70	642	637	714	730	776	996
	8	18	14	48.2	2599	8563	7841	3573	66	71	649	644	722	738	785	1008
	12	7	32	42.0	2628	8660	7930	8614	66	71	656	652	730	746	794	1019
	15	20	50	35.7	2658	8757	8019	3654	67	72	664	659	738	755	803	1031
	19	10	8	29.4	2687	8855	8108	8695	68	73	671	666	746	763	812	1042
	22	23	26	23.2	2717	8952	8197	3736	69	74	678	673	755	771	821	1053
	26	12	44	16.9	2746	9049	8286	8776	69	75	686	681	763	780	830	1065
November -	30	2	2	10.6	2776	9147	8375	3817	70	75	693	688	771	788	839	1076
December -	3	15	20	4.3	2805	9244	8465	8857	71	76	701	695	779	797	848	1088
	7	4	37	58.1	2835	9341	8554	3898	72	77	708	703	787	805	856	1099
	10	17	55	51.7	2864	9438	8643	8939	72	78	715	710	796	813	865	1111
	14	7	13	45.5	2894	9536	8732	3979	73	78	723	717	804	822	874	1122
	17	20	31	39.3	2923	9633	8821	9020	74	79	730	725	812	830	883	1134
	21	9	49	33.0	2953	9730	8910	4061	75	80	737	732	820	839	892	1145
	24	23	7	26.8	2982	9828	8999	9101	75	81	745	739	829	847	901	1156
December -	28	12	25	20.5	3012	9925	9088	4142	76	82	752	747	837	855	910	1168
January -	1	1	43	14.2	3042	0022	9177	9182	77	82	760	754	845	864	919	1179

TABLE IX.—*continued.* Revolutions of Jupiter's *Third* Satellite for *Months.*

Months.	Change of the Mean Conjunction.				A	S	B	c	C	D	E	F	G	H	I	K	L
	D.	H.	M.	S.													
January -	7	3	59	35.8	60	196	180	572	016	2	2	15	15	17	17	18	23
	14	7	59	11.7	119	392	359	144	033	3	3	30	30	33	34	36	46
	21	11	58	47.5	179	589	539	717	049	5	5	45	44	50	51	54	69
January -	28	15	58	23.3	238	785	719	289	066	6	6	59	59	66	68	72	92
February	4	19	57	59.2	298	981	898	861	082	8	8	74	74	83	85	90	115
	11	23	57	35.0	357	1177	1078	433	098	9	10	89	89	99	101	108	139
	19	3	57	10.8	417	1373	1258	006	115	11	11	104	103	116	118	126	162
February	26	7	56	46.7	476	1570	1437	578	131	12	13	119	118	132	135	144	185
March -	5	11	56	22.4	536	1766	1617	150	147	14	15	134	133	149	152	162	208
	12	15	55	58.2	595	1962	1797	722	164	15	16	149	148	165	169	180	231
	19	19	55	34.1	655	2158	1976	295	180	17	18	164	162	182	186	198	254
March -	26	23	55	9.9	715	2354	2156	867	197	18	19	178	177	198	203	216	277

TABLE IX.—*continued.* Revolutions of Jupiter's *Third* Satellite for *Months.*

Months.	Change of the Mean Conjunction.				A	S	B	c	C	D	E	F	G	H	I	K	L
	D.	H.	M.	S.													
April -	3	3	54	45·7	774	2551	2336	439	213	20	21	193	192	215	220	234	300
	10	7	54	21.6	834	2747	2515	011	229	21	23	208	207	232	237	252	323
	17	11	53	57·4	893	2943	2695	584	246	23	24	223	221	248	254	270	346
April -	24	15	53	33·2	953	3139	2875	156	262	24	26	238	236	265	271	288	369
May -	1	19	53	9·1	1012	3335	3054	728	278	26	27	253	251	281	287	306	393
	8	23	52	44·9	1072	3532	3234	300	295	27	29	268	266	298	304	324	416
	16	3	52	20.7	1131	3728	3414	873	311	29	31	283	280	314	321	342	439
	23	7	51	56·5	1191	3924	3593	445	328	30	32	297	295	331	338	360	462
May -	30	11	51	32·4	1250	4120	3773	017	344	32	34	312	310	348	355	378	485
June -	6	15	51	8.2	1310	4316	3953	589	360	33	36	327	325	364	372	396	508
	13	19	50	44·0	1369	4513	4132	162	377	35	37	342	339	380	389	414	531
	20	23	50	19·9	1429	4709	4312	734	393	36	39	357	354	397	406	432	554
June -	28	3	49	55·7	1489	4905	4492	306	409	38	40	372	369	413	423	450	577
July -	5	7	49	31·4	1548	5101	4671	878	426	39	42	387	384	430	440	468	600
	12	11	49	7·3	1608	5297	4851	451	442	41	44	401	399	447	457	486	623
	19	15	48	43·1	1667	5494	5031	023	459	42	45	416	413	463	473	504	646
July -	26	19	48	18.9	1727	5690	5210	595	475	44	47	431	428	480	490	522	670
Auguſt	2	23	47	54·8	1786	5886	5390	167	491	45	48	446	443	496	507	540	693
	10	3	47	30.6	1846	6082	5569	740	508	47	50	461	458	513	524	558	716
	17	7	47	6.4	1905	6278	5749	312	524	48	52	476	472	529	541	576	739
	24	11	46	42·3	1965	6475	5929	884	540	50	53	491	487	546	558	594	762
Auguſt	31	15	46	18.1	2024	6671	6108	456	557	51	55	506	502	562	575	612	785
September	7	19	45	53·9	2084	6867	6288	029	373	53	57	520	517	579	592	630	808
	14	23	45	29·8	2144	7063	6468	601	590	54	58	535	531	595	609	648	831
	22	3	45	5·6	2203	7259	6647	173	606	56	60	550	546	612	626	666	854
September	29	7	44	41·4	2263	7456	6827	745	622	57	61	565	561	629	643	684	877
October	6	11	44	17·3	2322	7652	7007	318	639	59	63	580	576	645	659	702	900
	13	15	43	53·1	2382	7848	7186	890	655	60	65	595	590	662	676	720	924
	20	19	43	28.9	2441	8044	7366	462	671	62	66	610	605	678	693	738	947
October	27	23	43	4·8	2501	8240	7546	034	688	63	68	625	620	695	710	756	970
November	4	3	42	40.6	2560	8437	7725	607	704	65	69	639	635	711	727	774	993
	11	7	42	16·4	2620	8633	7905	179	721	66	71	654	649	728	744	791	1016
	18	11	41	52.2	2679	8829	8085	751	737	68	73	669	664	744	761	809	1039
November	25	15	41	28.0	2739	9025	8264	323	753	69	74	684	679	761	778	827	1062
December	2	19	41	3·8	2799	9221	8444	896	770	71	76	699	694	777	795	845	1085
	9	23	40	39·7	2858	9418	8624	468	786	72	78	714	708	794	812	863	1108
	17	3	40	15·5	2918	9614	8803	040	802	74	79	729	723	810	829	881	1131
	24	7	39	51·3	2977	9810	8983	612	819	75	81	744	738	827	845	899	1154
December	31	11	39	27·2	3037	0006	9163	185	835	77	82	758	753	844	862	917	1178

Table IX.—*continued.* Revolutions of Jupiter's *Fourth* Satellite for *Months.*

Months.	Change of the Mean Conjunction.				A	S	B	C	D	E	H	I	K
	D.	H.	M.	S.									
January -	16	18	5	7.0	139	459	420	38	4	338	39	40	42
February -	2	12	10	14.1	278	917	840	76	7	676	77	79	84
	19	6	15	21.1	418	1376	1260	113	11	013	116	119	126
March -	8	0	20	28.1	557	1835	1680	151	14	351	155	158	168
	24	18	25	35.1	696	2293	2100	189	18	689	193	198	210
April -	10	12	30	42.2	835	2752	2520	227	21	027	232	237	252
	27	6	35	49.2	974	3211	2940	264	25	365	271	277	294
May -	14	0	40	56.2	1114	3669	3360	302	28	702	309	316	336
	30	18	46	3.2	1253	4128	3780	340	32	040	348	356	378
June -	16	12	51	10.3	1392	4587	4200	378	35	378	387	395	421
July -	3	6	56	17.3	1531	5045	4620	416	39	716	425	435	463
	20	1	1	24.3	1670	5504	5040	453	42	054	464	474	505
Auguſt -	5	19	6	31.3	1810	5963	5460	491	46	391	503	514	547
	22	13	11	38.4	1949	6421	5880	529	49	729	541	553	589
September	8	7	16	45.4	2088	6880	6300	567	53	067	580	593	631
	25	1	21	52.4	2227	7339	6720	605	56	405	619	632	673
October -	11	19	26	59.4	2366	7797	7140	642	60	743	657	672	715
	28	13	32	6.5	2506	8256	7560	680	63	080	696	712	757
November	14	7	37	13.5	2645	8715	7980	718	67	418	735	751	799
December	1	1	42	20.5	2784	9173	8400	756	70	756	773	791	841
	17	19	47	27.5	2923	9632	8820	793	74	094	812	831	883
January -	3	13	52	34.6	3062	0091	9240	831	77	432	851	870	925

In Biſſextile Years, add 1 Day in the Months of January and February.

TABLE X. Equations ariſing from the Perturbations of Jupiter's *Firſt* Satellite.

Years.	Equation.		Diff.	Years.	Equation.		Diff.
	M.	S.	SEC.		M.	S.	SEC.
1800	4	2.3	0.6	1810	3	0.0	5.0
	4	2.9	0.6		3	5.0	5.4
	4	3.5	0.9		3	10.4	5.6
	4	4.4	0.9		3	16.0	6.0
	4	5.3	1.1		3	22.0	6.4
1801	4	6.4	1.5	1811	3	28.4	6.3
	4	7.9	1.1		3	34.7	8.0
	4	9.0	1.1		3	42.7	5.8
	4	10.1	1.0		3	48.5	5.6
	4	11.1	1.1		3	54.1	5.6
1802	4	12.2	0.5	1812	3	59.7	5.4
	4	12.7	0.5		4	5.1	5.2
	4	13.2	0.3		4	10.3	4.8
	4	13.5	0.1		4	15.1	4.4
	4	13.6	0.1		4	19.5	3.9
1803	4	13.5	0.6	1813	4	23.4	3.0
	4	12.9	0.8		4	26.4	2.3
	4	12.1	1.2		4	28.7	1.7
	4	10.9	1.6		4	30.4	1.3
	4	9.3	2.1		4	31.7	0.8
1804	4	7.2	2.3	1814	4	32.5	0.4
	4	4.9	2.9		4	32.9	0.0
	4	2.0	3.4		4	32.9	0.8
	3	58.6	3.6		4	32.1	1.5
	3	55.0	3.9		4	30.6	1.8
1805	3	51.1	4.3	1815	4	28.8	2.3
	3	46.8	4.5		4	26.5	2.8
	3	42.3	4.7		4	23.7	2.9
	3	37.6	5.4		4	20.8	3.2
	3	32.2	5.5		4	17.6	3.6
1806	3	26.7	5.0	1816	4	14.0	3.9
	3	21.7	4.9		4	10.1	4.6
	3	16.8	5.0		4	5.5	5.6
	3	11.8	4.9		3	59.9	5.3
	3	6.9	4.4		3	54.6	5.2
1807	3	2.5	4.2	1817	3	49.4	5.5
	2	58.3	3.7		3	43.9	5.5
	2	54.6	3.4		3	38.4	5.6
	2	51.2	3.2		3	32.8	5.5
	2	48.0	2.5		3	27.3	5.7
1808	2	45.5	1.6	1818	3	21.6	5.4
	2	42.9	0.9		3	16.2	4.9
	2	43.0	0.2		3	11.3	4.7
	2	42.8	0.5		3	6.6	4.4
	2	43.3	1.2		3	2.2	3.7
1809	2	44.5	1.9	1819	2	58.5	3.4
	2	46.4	2.4		2	55.1	2.5
	2	48.8	3.0		2	52.6	1.8
	2	51.8	3.9		2	50.8	1.1
	2	55.7	4.3		2	49.7	0.3
1810	3	0.0		1820	2	49.4	

TABLE X.—*continued.* Equations ariſing from the Perturbations of Jupiter's *Second* Satellite.

Years.	Equation.		Diff.	Years.	Equation.		Diff.
	M.	S.	SEC.		M.	S.	SEC.
1800	8	4.0	1.2	1810	6	0.2	10.1
	8	5.2	1.5		6	10.3	11.2
	8	6.7	1.6		6	21.5	11.7
	8	8.3	1.9		6	33.2	12.2
	8	10.2	2.3		6	45.4	12.7
1801	8	12.5	2.5	1811	6	58.1	12.9
	8	15.0	2.5		7	11.0	13.1
	8	17.5	2.1		7	24.1	12.3
	8	19.6	2.2		7	36.4	12.3
	8	21.8	1.9		7	48.7	12.0
1802	8	23.7	1.2	1812	8	0.7	11.5
	8	24.9	1.0		8	12.2	10.1
	8	25.9	0.4		8	22.3	9.4
	8	26.3	0.1		8	31.7	8.6
	8	26.2	0.5		8	40.3	7.4
1803	8	25.7	1.0	1813	8	47.7	5.6
	8	24.7	1.9		8	53.3	4.6
	8	22.8	2.7		8	57.9	3.3
	8	20.1	3.6		9	1.2	2.4
	8	16.5	4.4		9	3.6	1.4
1804	8	12.1	4.8	1814	9	5.0	0.5
	8	7.3	5.6		9	5.5	0.3
	8	1.7	7.4		9	5.2	1.8
	7	54.3	7.5		9	3.4	3.4
	7	46.8	8.1		9	0.0	4.0
1805	7	38.7	8.7	1815	8	56.0	5.0
	7	30.0	9.4		8	51.0	5.8
	7	20.6	9.6		8	45.2	6.1
	7	11.0	10.3		8	39.1	6.9
	7	0.7	10.5		8	32.2	7.7
1806	6	50.2	10.0	1816	8	24.5	8.6
	6	40.2	10.0		8	15.9	9.2
	6	30.2	9.6		8	6.7	10.2
	6	20.6	9.2		7	56.5	10.6
	6	11.4	9.6		7	45.9	11.1
1807	6	1.8	8.4	1817	7	34.8	11.2
	5	53.4	7.9		7	23.6	11.1
	5	45.5	6.5		7	12.5	11.1
	5	39.0	5.7		7	1.4	11.4
	5	33.3	4.9		6	50.0	11.1
1808	5	28.4	2.6	1818	6	38.9	10.4
	5	25.8	1.6		6	28.5	9.9
	5	24.2	0.2		6	18.6	9.2
	5	24.0	1.2		6	9.4	8.7
	5	25.2	2.6		6	0.7	6.9
1809	5	27.8	3.8	1819	5	53.8	6.4
	5	31.6	5.3		5	47.4	5.6
	5	36.9	6.2		5	41.8	3.3
	5	43.1	8.2		5	38.5	1.1
	5	51.3	8.9		5	37.4	0.2
1810	6	0.2		1820	5	37.2	

TABLE X.—*continued.* Equations ariſing from the Perturbations of Jupiter's *Third* Satellite.

Years.	Equation.	Diff.	Years.	Equation.	Diff.
	M. S.	SEC.		M. S.	SEC.
1800	16 13.1	2.6	1810	12 5.3	20.5
	16 15.7	2.9		12 25.8	22.7
	16 18.6	3.4		12 48.5	23.7
	16 22.0	4.0		13 12.2	24.3
	16 26.0	4.6		13 36.5	26.2
1801	16 30.6	5.1	1811	14 2.7	26.0
	16 35.7	4.9		14 28.7	26.3
	16 40.6	4.2		14 55.0	24.9
	16 44.8	4.3		15 19.9	24.8
	16 49.1	3.9		15 44.7	24.1
1802	16 53.0	2.2	1812	16 8.8	23.0
	16 55.2	1.8		16 31.8	21.6
	16 57.0	0.6		16 53.4	17.6
	16 57.6	0.2		17 11.0	17.1
	16 57.4	1.3		17 28.1	14.9
1803	16 56.1	2.1	1813	17 43.0	11.0
	16 54.0	4.5		17 54.0	8.8
	16 49.5	5.4		18 2.8	6.5
	16 44.1	7.3		18 9.3	4.8
	16 36.8	9.0		18 14.1	2.3
1804	16 27.8	9.9	1814	18 16.4	0.6
	16 17.9	11.5		18 17.0	0.8
	16 6.4	14.9		18 16.2	4.0
	15 51.5	15.4		18 12.2	6.7
	15 36.1	16.5		18 5.5	8.7
1805	15 19.6	17.6	1815	17 56.8	10.4
	15 2.0	18.9		17 46.4	12.0
	14 43.1	19.5		17 34.4	12.6
	14 23.6	20.7		17 21.8	14.1
	14 2.9	21.0		17 7.7	15.8
1806	13 41.9	20.5	1816	16 51.9	17.5
	13 21.4	20.3		16 34.4	18.6
	13 1.1	19.4		16 15.8	20.4
	12 41.7	18.7		15 55.4	21.8
	12 23.0	18.5		15 33.6	22.6
1807	12 4.5	16.5	1817	15 11.0	23.4
	11 48.0	15.8		14 47.6	22.4
	11 32.2	12.8		14 25.2	21.5
	11 19.4	11.3		14 3.7	22.7
	11 8.1	8.9		13 41.0	22.5
1808	10 59.2	5.8	1818	13 18.5	20.6
	10 53.4	2.9		12 57.9	19.8
	10 50.5	0.1		12 38.1	18.3
	10 50.4	2.7		12 19.8	17.3
	10 53.1	5.5		12 2.5	14.9
1809	10 58.6	7.8	1819	11 47.6	11.7
	11 6.4	11.1		11 35.9	8.9
	11 17.5	13.1		11 27.0	6.3
	11 30.6	16.2		11 20.7	3.8
	11 46.8	18.5		11 16.9	0.1
1810	12 5.3		1820	11 16.8	

TABLE X.—*continued.* Equations ariſing from the Perturbations of Jupiter's *Fourth* Satellite.

Years.	Equation.	Diff.	Years.	Equation.	Diff.
	M. S.	SEC.		M. S.	SEC.
1800	37 51.5	6.0	1810	28 14.1	48.1
	37 57.5	6.9		29 2.2	52.4
	38 4.4	7.9		29 54.6	55.5
	38 12.3	9.5		30 50.1	58.0
	38 21.8	10.8		31 48.1	60.5
1801	38 32.6	11.9	1811	32 48.6	61.9
	38 44.5	11.4		33 50.5	61.4
	38 55.9	10.8		34 51.9	58.1
	39 6.7	9.0		35 50.0	57.0
	39 15.7	8.1		36 47.0	56.2
1802	39 23.8	5.8	1812	37 43.2	54.8
	39 29.6	4.2		38 38.0	47.2
	39 33.8	1.3		39 25.2	44.0
	39 35.1	0.2		40 9.2	39.8
	39 34.9	4.0		40 49.0	34.6
1803	39 30.9	5.4	1813	41 23.6	26.3
	39 25.5	10.6		41 49.9	19.3
	39 14.9	13.0		42 9.2	14.8
	39 1.9	17.3		42 24.0	10.7
	38 44.6	21.2		42 34.7	4.0
1804	38 23.4	24.2	1814	42 38.7	2.1
	37 59.2	28.2		42 40.8	2.2
	37 31.0	31.2		42 38.6	9.8
	36 59.8	36.2		42 28.8	17.1
	36 23.6	39.7		42 11.7	20.0
1805	35 43.9	42.1	1815	41 51.7	24.4
	35 1.8	44.2		41 27.3	28.2
	34 17.6	45.8		40 59.1	30.1
	33 31.8	48.5		40 29.0	33.1
	32 43.3	49.8		39 55.9	37.5
1806	31 53.5	47.4	1816	39 18.4	40.6
	31 6.1	46.5		38 37.8	43.9
	30 19.6	45.5		37 53.9	47.9
	29 34.1	44.8		37 6.0	50.2
	28 49.3	41.9		36 15.8	52.1
1807	28 7.4	38.3	1817	35 23.7	52.5
	27 29.1	35.7		34 31.2	52.9
	26 53.4	30.5		33 38.3	53.9
	26 22.9	26.1		32 44.8	53.1
	25 56.8	20.7		31 51.7	52.6
1808	25 36.1	13.1	1818	30 59.1	48.7
	25 23.0	6.5		30 10.4	45.0
	25 16.5	0.1		29 25.4	42.6
	25 16.4	6.8		28 42.8	39.1
	25 23.2	13.3		28 3.7	33.5
1809	25 36.5	18.6	1819	27 30.2	29.1
	25 55.1	26.2		27 1.1	21.4
	26 21.3	31.1		26 39.7	13.3
	26 52.4	37.5		26 26.4	8.6
	27 29.9	44.2		26 17.8	0.3
1810	28 14.1		1820	26 18.1	

SATELLITES.

TABLE XI. Equation of the Centre of Jupiter's *Firſt* Satellite, with the principal Part of the Equation of Light.

Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.		
	H.	M.	S.		H.	M.	S.		H.	M.	S.		H.	M.	S.
0	1	15	24.4	4500	0	48	25.7	9000	0	34	31.3	13500	0	43	11.9
100	1	14	45.8	4600	0	47	55.7	9100	0	34	27.1	13600	0	43	39.2
200	1	14	7.3	4700	0	47	26.1	9200	0	34	23.5	13700	0	44	7.1
300	1	13	28.7	4800	0	46	57.0	9300	0	34	20.7	13800	0	44	35.7
400	1	12	50.2	4900	0	46	28.2	9400	0	34	18.5	13900	0	45	5.1
500	1	12	11.7	5000	0	46	0.0	9500	0	34	17.1	14000	0	45	35.1
600	1	11	33.2	5100	0	45	32.3	9600	0	34	16.5	14100	0	46	5.5
700	1	10	54.6	5200	0	45	4.8	9700	0	34	16.6	14200	0	46	36.4
800	1	10	16.1	5300	0	44	37.7	9800	0	34	17.3	14300	0	47	8.0
900	1	9	37.7	5400	0	44	11.3	9900	0	34	18.8	14400	0	47	40.0
1000	1	8	59.2	5500	0	43	45.3	10000	0	34	21.0	14500	0	48	12.7
1100	1	8	20.8	5600	0	43	19.8	10100	0	34	24.0	14600	0	48	45.9
1200	1	7	42.6	5700	0	42	54.8	10200	0	34	27.6	14700	0	49	19.7
1300	1	7	4.3	5800	0	42	30.2	10300	0	34	31.9	14800	0	49	53.8
1400	1	6	26.3	5900	0	42	6.1	10400	0	34	37.2	14900	0	50	28.6
1500	1	5	48.2	6000	0	41	42.6	10500	0	34	43.1	15000	0	51	3.8
1600	1	5	10.4	6100	0	41	19.6	10600	0	34	49.7	15100	0	51	39.4
1700	1	4	32.7	6200	0	40	57.1	10700	0	34	57.0	15200	0	52	15.5
1800	1	3	55.2	6300	0	40	35.1	10800	0	35	5.1	15300	0	52	52.2
1900	1	3	17.7	6400	0	40	13.7	10900	0	35	13.9	15400	0	53	29.2
2000	1	2	40.5	6500	0	39	52.9	11000	0	35	23.4	15500	0	54	6.8
2100	1	2	3.5	6600	0	39	32.7	11100	0	35	33.6	15600	0	54	44.1
2200	1	1	26.6	6700	0	39	13.0	11200	0	35	44.5	15700	0	55	22.7
2300	1	0	49.8	6800	0	38	53.8	11300	0	35	56.3	15800	0	56	1.3
2400	1	0	13.3	6900	0	38	35.2	11400	0	36	8.7	15900	0	56	40.3
2500	0	59	36.8	7000	0	38	17.3	11500	0	36	21.9	16000	0	57	19.5
2600	0	59	0.7	7100	0	37	59.8	11600	0	36	35.6	16100	0	57	59.0
2700	0	58	24.5	7200	0	37	43.1	11700	0	36	50.3	16200	0	58	39.6
2800	0	57	48.7	7300	0	37	26.9	11800	0	37	5.8	16300	0	59	20.0
2900	0	57	13.2	7400	0	37	11.4	11900	0	37	21.7	16400	1	0	0.6
3000	0	56	38.0	7500	0	36	56.5	12000	0	37	38.4	16500	1	0	41.5
3100	0	56	3.1	7600	0	36	42.1	12100	0	37	55.9	16600	1	1	22.7
3200	0	55	28.5	7700	0	36	28.6	12200	0	38	13.9	16700	1	2	4.2
3300	0	54	54.0	7800	0	36	15.6	12300	0	38	32.8	16800	1	2	45.9
3400	0	54	19.6	7900	0	36	3.1	12400	0	38	52.3	16900	1	3	28.0
3500	0	53	45.9	8000	0	35	51.4	12500	0	39	12.6	17000	1	4	10.0
3600	0	53	12.4	8100	0	35	40.5	12600	0	39	33.5	17100	1	4	52.3
3700	0	52	39.1	8200	0	35	30.3	12700	0	39	55.2	17200	1	5	34.9
3800	0	52	6.1	8300	0	35	20.5	12800	0	40	17.4	17300	1	6	17.6
3900	0	51	33.7	8400	0	35	11.4	12900	0	40	40.3	17400	1	7	0.4
4000	0	51	1.5	8500	0	35	3.0	13000	0	41	4.0	17500	1	7	43.4
4100	0	50	29.7	8600	0	34	55.4	13100	0	41	28.2	17600	1	8	26.5
4200	0	49	58.2	8700	0	34	48.2	13200	0	41	53.2	17700	1	9	9.8
4300	0	49	27.0	8800	0	34	42.0	13300	0	42	18.7	17800	1	9	53.1
4400	0	48	56.0	8900	0	34	36.3	13400	0	42	45.0	17900	1	10	36.5

Table XI.—*continued.* Equation, &c. of Jupiter's *Firſt* Satellite, with the principal Part of the Equation of Light.

Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.		
	H.	M.	S.		H.	M.	S.		H.	M.	S.		H.	M.	S.
18000	1	11	19.9	22600	1	41	15.6	27200	1	52	22.4	31800	1	39	52.9
18100	1	12	3.3	22700	1	41	45.1	27300	1	52	20.2	31900	1	39	23.9
18200	1	12	46.9	22800	1	42	14.0	27400	1	52	17.2	32000	1	38	54.7
18300	1	13	30.5	22900	1	42	42.0	27500	1	52	13.8	32100	1	38	24.9
18400	1	14	14.1	23000	1	43	10.0	27600	1	52	9.8	32200	1	37	54.7
18500	1	14	57.5	23100	1	43	37.1	27700	1	52	4.9	32300	1	37	24.2
18600	1	15	40.9	23200	1	44	3.6	27800	1	51	59.3	32400	1	36	53.4
18700	1	16	24.2	23300	1	44	29.4	27900	1	51	52.9	32500	1	36	22.1
18800	1	17	7.5	23400	1	44	54.9	28000	1	51	46.0	32600	1	35	50.6
18900	1	17	50.7	23500	1	45	19.4	28100	1	51	38.5	32700	1	35	18.6
19000	1	18	33.9	23600	1	45	43.3	28200	1	51	30.2	32800	1	34	46.1
19100	1	19	16.9	23700	1	46	6.4	28300	1	51	21.1	32900	1	34	13.5
19200	1	19	59.8	23800	1	46	29.1	28400	1	51	11.5	33000	1	33	40.6
19300	1	20	42.6	23900	1	46	51.1	28500	1	51	1.3	33100	1	33	7.2
19400	1	21	25.3	24000	1	47	12.4	28600	1	50	50.4	33200	1	32	33.5
19500	1	22	7.6	24100	1	47	32.9	28700	1	50	38.7	33300	1	31	59.6
19600	1	22	49.8	24200	1	47	52.9	28800	1	50	26.5	33400	1	31	25.5
19700	1	23	31.6	24300	1	48	12.3	28900	1	50	13.8	33500	1	30	51.0
19800	1	24	13.4	24400	1	48	30.8	29000	1	50	0.3	33600	1	30	16.3
19900	1	24	55.0	24500	1	48	48.7	29100	1	49	46.4	33700	1	29	41.4
20000	1	25	36.3	24600	1	49	5.9	29200	1	49	31.6	33800	1	29	6.2
20100	1	26	17.1	24700	1	49	22.3	29300	1	49	16.2	33900	1	28	30.5
20200	1	26	57.8	24800	1	49	38.1	29400	1	49	0.3	34000	1	27	54.7
20300	1	27	38.3	24900	1	49	53.2	29500	1	48	43.7	34100	1	27	18.7
20400	1	28	18.4	25000	1	50	7.6	29600	1	48	26.5	34200	1	26	42.5
20500	1	28	58.2	25100	1	50	21.2	29700	1	48	8.9	34300	1	26	6.1
20600	1	29	37.6	25200	1	50	34.1	29800	1	47	50.7	34400	1	25	29.5
20700	1	30	16.6	25300	1	50	46.4	29900	1	47	31.8	34500	1	24	52.6
20800	1	30	55.3	25400	1	50	57.9	30000	1	47	12.2	34600	1	24	15.6
20900	1	31	33.6	25500	1	51	8.7	30100	1	46	52.3	34700	1	23	38.5
21000	1	32	11.6	25600	1	51	18.6	30200	1	46	31.8	34800	1	23	1.2
21100	1	32	49.2	25700	1	51	28.1	30300	1	46	10.6	34900	1	22	23.8
21200	1	33	26.4	25800	1	51	36.8	30400	1	45	48.8	35000	1	21	46.2
21300	1	34	3.1	25900	1	51	44.6	30500	1	45	26.4	35100	1	21	8.4
21400	1	34	39.3	26000	1	51	52.0	30600	1	45	3.7	35200	1	20	30.5
21500	1	35	15.1	26100	1	51	58.4	30700	1	44	40.7	35300	1	19	52.4
21600	1	35	50.4	26200	1	51	4.1	30800	1	44	17.0	35400	1	19	14.4
21700	1	36	25.2	26300	1	51	9.2	30900	1	43	52.7	35500	1	18	36.3
21800	1	36	59.6	26400	1	51	13.5	31000	1	43	27.8	35600	1	17	58.0
21900	1	37	33.6	26500	1	52	17.1	31100	1	43	2.6	35700	1	17	19.7
22000	1	38	6.9	26600	1	52	19.9	31200	1	42	36.8	35800	1	16	41.3
22100	1	38	39.7	26700	1	52	22.0	31300	1	42	10.7	35900	1	16	2.8
22200	1	39	12.1	26800	1	52	23.6	31400	1	41	44.1	36000	1	15	24.4
22300	1	39	43.7	26900	1	52	24.3	31500	1	41	16.9				
22400	1	40	15.0	27000	1	52	24.3	31600	1	40	49.4				
22500	1	40	45.5	27100	1	52	23.7	31700	1	40	21.4				

Table XI.—*continued.* Equation, &c. of Jupiter's *Second* Satellite, with the principal Part of the Equation of Light.

Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.		
	H.	M.	S.		H.	M.	S.		H.	M.	S.		H.	M.	S.
0	1	54	44.8	4500	1	1	1.5	9000	0	34	27.6	13500	0	53	25.1
100	1	53	27.3	4600	1	0	2.6	9100	0	34	21.3	13600	0	54	21.9
200	1	52	9.8	4700	0	59	4.6	9200	0	34	16.4	13700	0	55	19.8
300	1	50	52.3	4800	0	58	7.3	9300	0	34	12.8	13800	0	56	19.2
400	1	49	34.8	4900	0	57	11.0	9400	0	34	10.7	13900	0	57	19.6
500	1	48	17.4	5000	0	56	15.7	9500	0	34	10.1	14000	0	58	21.3
600	1	47	0.1	5100	0	55	21.3	9600	0	34	11.0	14100	0	59	24.0
700	1	45	42.7	5200	0	54	27.7	9700	0	34	13.3	14200	1	0	27.6
800	1	44	25.6	5300	0	53	35.0	9800	0	34	16.8	14300	1	1	32.6
900	1	43	8.5	5400	0	52	43.2	9900	0	34	22.0	14400	1	2	38.5
1000	1	41	51.6	5500	0	51	52.5	10000	0	34	28.8	14500	1	3	45.6
1100	1	40	34.9	5600	0	51	3.0	10100	0	34	36.8	14600	1	4	53.8
1200	1	39	18.3	5700	0	50	14.4	10200	0	34	46.3	14700	1	6	2.9
1300	1	38	1.8	5800	0	49	26.8	10300	0	34	57.2	14800	1	7	13.0
1400	1	36	45.7	5900	0	48	40.1	10400	0	35	9.7	14900	1	8	24.0
1500	1	35	29.9	6000	0	47	54.6	10500	0	35	23.7	15000	1	9	35.9
1600	1	34	14.2	6100	0	47	10.2	10600	0	35	39.1	15100	1	10	48.7
1700	1	32	58.8	6200	0	46	26.8	10700	0	35	55.9	15200	1	12	2.5
1800	1	31	43.8	6300	0	45	44.4	10800	0	36	14.3	15300	1	13	17.3
1900	1	30	29.1	6400	0	45	3.0	10900	0	36	34.0	15400	1	14	32.8
2000	1	29	14.7	6500	0	44	23.1	11000	0	36	55.3	15500	1	15	49.3
2100	1	28	0.8	6600	0	43	44.2	11100	0	37	18.0	15600	1	17	6.4
2200	1	26	47.1	6700	0	43	6.6	11200	0	37	42.2	15700	1	18	24.2
2300	1	25	33.8	6800	0	42	30.1	11300	0	38	7.7	15800	1	19	42.7
2400	1	24	21.1	6900	0	41	54.7	11400	0	38	34.9	15900	1	21	2.0
2500	1	23	8.7	7000	0	41	20.4	11500	0	39	3.3	16000	1	22	22.1
2600	1	21	56.7	7100	0	40	47.5	11600	0	39	33.3	16100	1	23	42.8
2700	1	20	45.1	7200	0	40	15.7	11700	0	40	4.7	16200	1	25	4.1
2800	1	19	33.9	7300	0	39	45.2	11800	0	40	37.6	16300	1	26	26.0
2900	1	18	23.5	7400	0	39	16.1	11900	0	41	11.6	16400	1	27	48.5
3000	1	17	13.7	7500	0	38	48.1	12000	0	41	47.3	16500	1	29	11.5
3100	1	16	4.4	7600	0	38	21.4	12100	0	42	24.3	16600	1	30	35.0
3200	1	14	55.6	7700	0	37	56.0	12200	0	43	2.7	16700	1	31	59.0
3300	1	13	47.4	7800	0	37	31.8	12300	0	43	42.6	16800	1	33	23.4
3400	1	12	39.6	7900	0	37	9.2	12400	0	44	23.8	16900	1	34	48.3
3500	1	11	32.5	8000	0	36	47.7	12500	0	45	6.5	17000	1	36	13.5
3600	1	10	26.4	8100	0	36	27.6	12600	0	45	50.4	17100	1	37	39.1
3700	1	9	20.8	8200	0	36	8.9	12700	0	46	35.7	17200	1	39	5.0
3800	1	8	15.6	8300	0	35	51.4	12800	0	47	22.3	17300	1	40	31.2
3900	1	7	11.5	8400	0	35	35.4	12900	0	48	10.3	17400	1	41	57.7
4000	1	6	8.1	8500	0	35	20.6	13000	0	48	59.5	17500	1	43	24.5
4100	1	5	5.2	8600	0	35	7.1	13100	0	49	50.2	17600	1	44	51.3
4200	1	4	3.1	8700	0	34	55.2	13200	0	50	41.9	17700	1	46	18.4
4300	1	3	1.9	8800	0	34	44.8	13300	0	51	34.8	17800	1	47	45.6
4400	1	2	1.2	8900	0	34	35.5	13400	0	52	29.4	17900	1	49	12.9

TABLE XI.—*continued.* Equation, &c. of Jupiter's *Second* Satellite, with the principal Part of the Equation of Light.

Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.		
	H.	M.	S.		H.	M.	S.		H.	M.	S.		H.	M.	S.
18000	1	50	40.3	22600	2	50	12.0	27200	3	11	0.5	31800	2	44	28.7
18100	1	52	7.8	22700	2	51	9.8	27300	3	10	54.1	31900	2	43	29.3
18200	1	53	35.3	22800	2	52	6.1	27400	3	10	46.4	32000	2	42	29.0
18300	1	55	2.7	22900	2	53	1.3	27500	3	10	37.1	32100	2	41	27.8
18400	1	56	30.1	23000	2	53	55.4	27600	3	10	26.7	32200	2	40	26.0
18500	1	57	57.4	23100	2	54	48.0	27700	3	10	14.8	32300	2	39	23.5
18600	1	59	24.6	23200	2	55	39.6	27800	3	10	1.6	32409	2	38	20.2
18700	2	0	51.5	23300	2	56	29.8	27900	3	9	46.7	32500	2	37	16.2
18800	2	2	18.2	23400	2	57	18.9	28000	3	9	30.8	32600	2	36	11.4
18900	2	3	44 9	23500	2	58	6.4	28100	3	9	13.3	32700	2	35	6.0
19000	2	5	11.4	23600	2	58	52.7	28200	3	8	54.6	32800	2	33	59.8
19100	2	6	37.4	23700	2	59	37.5	28300	3	8	34.5	32900	2	32	53.1
19200	2	8	3.2	23800	3	0	21.2	28400	3	8	13.3	33000	2	31	45.7
19300	2	9	28.7	23900	3	1	3.6	28500	3	7	50.6	33100	2	30	37.7
19400	2	10	53.9	24000	3	1	44.4	28600	3	7	26.6	33200	2	29	29.1
19500	2	12	18.4	24100	3	2	23.9	28700	3	7	1.3	33300	2	28	20.0
19600	2	13	42.7	24200	3	3	2.3	28800	3	6	34.8	33400	2	27	10.3
19700	2	15	6.5	24300	3	3	39.0	28900	3	6	7.0	33500	2	26	0.2
19800	2	16	29.7	24400	3	4	14 0	29000	3	5	38.0	33600	2	24	49.4
19900	2	17	52.5	24500	3	4	48.0	29100	3	5	7.8	33700	2	23	38.1
20000	2	19	14.6	24600	3	5	20.6	29200	3	4	36.2	33800	2	22	26.3
20100	2	20	36.2	24700	3	5	51.7	29300	3	4	3.4	33900	2	21	14.0
20200	2	21	57.3	24800	3	6	21.3	29400	3	3	29.5	34000	2	20	1.4
20300	2	23	17.7	24900	3	6	49.6	29500	3	2	54.3	34100	2	18	48.3
20400	2	24	37.5	25000	3	7	16 6	29600	3	2	18.0	34200	2	17	34.9
20500	2	25	56.6	25100	3	7	41.9	29700	3	1	40.5	34300	2	16	20 9
20600	2	27	14.9	25200	3	8	5.8	29800	3	1	1.8	34400	2	15	6.6
20700	2	28	32.4	25300	3	8	28.4	29900	3	0	22.1	34500	2	13	52.0
20800	2	29	49.1	25400	3	8	49.4	30000	2	59	41.1	34600	2	12	37.2
20900	2	31	5.0	25500	3	9	9.0	30100	2	58	59.2	34700	2	11	21.9
21000	2	32	20.4	25600	3	9	27.0	30200	2	58	16.1	34800	2	10	6.4
21100	2	33	34.7	25700	3	9	43.7	30300	2	57	31.8	34900	2	8	50.6
21200	2	34	48.1	25800	3	9	59.0	30400	2	56	46.2	35000	2	7	34.6
21300	2	36	0.8	25900	3	10	12.8	30500	2	56	0.0	35100	2	6	18.4
21400	2	37	12.3	26000	3	10	25.1	30600	2	55	12.7	35200	2	5	1.9
21500	2	38	23.1	26100	3	10	35 9	30700	2	54	24.3	35300	2	3	45.1
21600	2	39	32.7	26200	3	10	45.3	30800	2	53	34.9	35400	2	2	28.2
21700	2	40	41.4	26300	3	10	53.4	30900	2	52	44.5	35500	2	1	11.3
21800	2	41	49.2	26400	3	10	59.9	31000	2	51	53.0	35600	1	59	54.3
21900	2	42	56 1	26500	3	11	5.0	31100	2	51	0.6	35700	1	58	37.0
22000	2	44	1.6	26600	3	11	8.6	31200	2	50	7.3	35800	1	57	19.6
22100	2	45	6.1	26700	3	11	10.7	31300	2	49	13.1	35900	1	56	2.2
22200	2	46	9.4	26800	3	11	11.5	31400	2	48	18.0	36000	1	54	44.8
22300	2	47	11.8	26900	3	11	10.9	31500	2	47	22.0				
22400	2	48	13.1	27000	3	11	8.8	31600	2	46	25.1				
22500	2	49	13.2	27100	3	11	5.3	31700	2	45	27.5				

TABLE XI.—*continued.* Equation, &c. of Jupiter's *Third* Satellite, with the principal Part of the Equation of Light.

Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.		
	H.	M.	S.		H.	M.	S.		H.	M.	S.		H.	M.	S.
0	3	14	23.3	4500	1	26	33.7	9000	0	34	3.1	13500	1	14	8.8
100	3	11	47.0	4600	1	24	36.3	9100	0	34	12.4	13600	1	16	5.2
200	3	9	10.7	4700	1	22	40.6	9200	0	34	4.6	13700	1	18	3.8
300	3	6	34.5	4800	1	20	46.8	9300	0	33	59.6	13800	1	20	5.0
400	3	3	58.3	4900	1	18	54.7	9400	0	33	57.6	13900	1	22	8.4
500	3	1	22.2	5000	1	17	4.5	9500	0	33	58.5	14000	1	24	14.1
600	2	58	46.3	5100	1	15	16.4	9600	0	34	2.4	14100	1	26	22.1
700	2	56	10.6	5200	1	13	29.8	9700	0	34	9.7	14200	1	28	32.2
800	2	53	35.1	5300	1	11	45.2	9800	0	34	18.7	14300	1	30	44.6
900	2	50	59.9	5400	1	10	2.7	9900	0	34	31.2	14400	1	32	59.1
1000	2	48	25.1	5500	1	8	22.0	10000	0	34	46.9	14500	1	35	15.8
1100	2	45	50.6	5600	1	6	43.6	10100	0	35	5.4	14600	1	37	34.5
1200	2	43	16.5	5700	1	5	7.2	10200	0	35	26.7	14700	1	39	55.2
1300	2	40	42.8	5800	1	3	32.8	10300	0	35	50.9	14800	1	42	17.9
1400	2	38	9	5900	1	2	0.4	10400	0	36	18.8	14900	1	44	42.5
1500	2	35	37.1	6000	1	0	30.3	10500	0	36	48.6	15000	1	47	8.8
1600	2	33	5.1	6100	0	59	2.4	10600	0	37	21.8	15100	1	49	37.0
1700	2	30	33.5	6200	0	57	36.7	10700	0	37	58.0	15200	1	52	7.0
1800	2	28	2.6	6300	0	56	13.2	10800	0	38	37.1	15300	1	54	38.8
1900	2	25	32.6	6400	0	54	51.9	10900	0	39	19.1	15400	1	57	12.2
2000	2	23	3.1	6500	0	53	33.0	11000	0	40	4.2	15500	1	59	47.4
2100	2	20	34.6	6600	0	52	16.7	11100	0	40	52.0	15600	2	2	23.8
2200	2	18	6.6	6700	0	51	2.4	11200	0	41	42.8	15700	2	5	1.8
2300	2	15	39.6	6800	0	49	50.5	11300	0	42	36.6	15800	2	7	41.2
2400	2	13	13.5	6900	0	48	41.2	11400	0	43	3.3	15900	2	10	22.2
2500	2	10	48.2	7000	0	47	34.2	11500	0	44	32.9	16000	2	13	4.6
2600	2	8	23.9	7100	0	46	29.6	11600	0	45	35.2	16100	2	15	48.2
2700	2	6	0.5	7200	0	45	27.5	11700	0	46	40.7	16200	2	18	32.9
2800	2	3	38.1	7300	0	44	28.1	11800	0	47	49.0	16300	2	21	18.8
2900	2	1	17.0	7400	0	43	31.1	11900	0	48	59.9	16400	2	24	5.9
3000	1	58	56.9	7500	0	42	36.8	12000	0	50	13.8	16500	2	26	53.8
3100	1	56	37.9	7600	0	41	45.0	12100	0	51	30.4	16600	2	29	43.1
3200	1	54	20.1	7700	0	40	55.7	12200	0	52	50.0	16700	2	32	33.1
3300	1	52	3.6	7800	0	40	9.3	12300	0	54	12.2	16800	2	35	23.9
3400	1	49	48.3	7900	0	39	25.4	12400	0	55	37.3	16900	2	38	15.4
3500	1	47	34.2	8000	0	38	44.2	12500	0	57	5.2	17000	2	41	7.7
3600	1	45	21.7	8100	0	38	5.7	12600	0	58	35.8	17100	2	44	0.9
3700	1	43	10.5	8200	0	37	29.9	12700	1	0	8.6	17200	2	46	54.8
3800	1	41	0.5	8300	0	36	56.8	12800	1	1	44.7	17300	2	49	49.0
3900	1	38	52.0	8400	0	36	26.5	12900	1	3	23.3	17400	2	52	43.8
4000	1	36	45.1	8500	0	35	59.9	13000	1	5	4.5	17500	2	55	38.9
4100	1	34	39.7	8600	0	35	34.0	13100	1	6	48.3	17600	2	58	34.5
4200	1	32	35.8	8700	0	35	12.2	13200	1	8	34.7	17700	3	1	30.2
4300	1	30	33.6	8800	0	34	53.1	13300	1	10	23.5	17800	3	4	26.4
4400	1	28	32.7	8900	0	34	36.7	13400	1	12	14.9	17900	3	7	22.5

Table XI.—*continued.* Equation, &c. of Jupiter's *Third* Satellite, with the principal Part of the Equation of Light.

Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.		
	H.	M.	S.		H.	M.	S.		H.	M.	S.		H.	M.	S.
18000	3	10	19.0	22600	5	9	43.7	27200	5	50	9.4	31800	4	55	13.2
18100	3	13	15.3	22700	5	11	38.3	27300	5	49	54.3	31900	4	53	11.9
18200	3	16	11.7	22800	5	13	30.5	27400	5	49	36.6	32000	4	51	9.2
18300	3	19	8.1	22900	5	15	20.4	27500	5	49	16.0	32100	4	49	4.5
18400	3	22	4.2	23000	5	17	7.6	27600	5	48	52.8	32200	4	46	58.4
18500	3	25	0.1	23100	5	18	52.2	27700	5	48	26.7	32300	4	44	51.0
18600	3	27	55.7	23200	5	20	34.4	27800	5	47	57.7	32400	4	42	42.2
18700	3	30	50.9	23300	5	22	13.9	27900	5	47	25.9	32500	4	40	31.8
18800	3	33	45.7	23400	5	23	50.7	28000	5	46	51.4	32600	4	38	20.0
18900	3	36	40.1	23500	5	25	24.9	28100	5	46	14.3	32700	4	36	6.8
19000	3	39	34.1	23600	5	26	56.4	28200	5	45	34.3	32800	4	33	52.6
19100	3	42	27.3	23700	5	28	25.1	28300	5	44	52.0	32900	4	31	36.7
19200	3	45	19.9	23800	5	29	51.1	28400	5	44	6.9	33000	4	29	19.8
19300	3	48	11.8	23900	5	31	14.6	28500	5	43	19.1	33100	4	27	1.5
19400	3	51	2.9	24000	5	32	35.1	28600	5	42	28.7	33200	4	24	42.2
19500	3	53	53.1	24100	5	33	52.8	28700	5	41	35.6	33300	4	22	21.8
19600	3	56	42.5	24200	5	35	7.9	28800	5	40	40.2	33400	4	20	0.2
19700	3	59	30.8	24300	5	36	19.6	28900	5	39	42.1	33500	4	17	37.9
19800	4	2	18.1	24400	5	37	29.0	29000	5	38	41.5	33600	4	15	14.2
19900	4	5	4.3	24500	5	38	35.8	29100	5	37	38.5	33700	4	12	49.5
20000	4	7	49.3	24600	5	39	39.3	29200	5	36	32.9	33800	4	10	23.9
20100	4	10	33.2	24700	5	40	40.1	29300	5	35	24.9	33900	4	7	57.5
20200	4	13	16.1	24800	5	41	37.9	29400	5	34	14.5	34000	4	5	30.2
20300	4	15	57.3	24900	5	42	32.9	29500	5	33	1.6	34100	4	3	1.9
20400	4	18	37.1	25000	5	43	24.8	29600	5	31	46.4	34200	4	0	33.0
20500	4	21	15.7	25100	5	44	14.0	29700	5	30	28.9	34300	3	58	3.4
20600	4	23	52.6	25200	5	45	0.1	29800	5	29	9.1	34400	3	55	33.0
20700	4	26	28.1	25300	5	45	43.4	29900	5	27	46.9	34500	3	53	2.0
20800	4	29	1.9	25400	5	46	23.9	30000	5	26	22.5	34600	3	50	30.4
20900	4	31	34.1	25500	5	47	1.2	30100	5	24	56.1	34700	3	47	58.1
21000	4	34	4.7	25600	5	47	35.4	30200	5	23	27.3	34800	3	45	25.3
21100	4	36	33.4	25700	5	48	7.1	30300	5	21	56.2	34900	3	42	52.1
21200	4	39	0.4	25800	5	48	35.8	30400	5	20	23.1	35000	3	40	18.3
21300	4	41	25.7	25900	5	49	1.4	30500	5	18	47.8	35100	3	37	44.1
21400	4	43	48.8	26000	5	49	24.0	30600	5	17	10.6	35200	3	35	9.6
21500	4	46	10.1	26100	5	49	43.8	30700	5	15	31.2	35300	3	32	34.5
21600	4	48	29.3	26200	5	50	0.6	30800	5	13	50.0	35400	3	29	59.4
21700	4	50	46.6	26300	5	50	14.7	30900	5	12	6.7	35500	3	27	23.8
21800	4	53	1.8	26400	5	50	25.6	31000	5	10	21.4	35600	3	24	48.1
21900	4	55	15.1	26500	5	50	33.7	31100	5	8	34.2	35700	3	22	12.0
22000	4	57	25.9	26600	5	50	38.8	31200	5	6	45.1	35800	3	19	35.8
22100	4	59	34.4	26700	5	50	41.1	31300	5	4	54.2	35900	3	16	59.4
22200	5	1	40.9	26800	5	50	40.5	31400	5	3	1.5	36000	3	14	23.0
22300	5	3	45.1	26900	5	50	37.1	31500	5	1	7.0				
22400	5	5	47.1	27000	5	50	30.6	31600	4	59	10.8				
22500	5	7	46.6	27100	5	50	21.4	31700	4	57	12.9				

TABLE XI.—*continued.* Equation, &c. of Jupiter's *Fourth* Satellite, with the principal Part of the Equation of Light.

Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.		
	H.	M.	S.		H.	M.	S.		H.	M.	S.		H.	M.	S.
0	6	45	45.2	4500	2	33	31.9	9000	0	33	3.0	13500	2	8	21.5
100	6	39	38.3	4600	2	28	58.6	9100	0	32	41.1	13600	2	12	56.5
200	6	33	31.7	4700	2	24	29.3	9200	0	32	25.7	13700	2	17	37.0
300	6	27	25.1	4800	2	20	4.1	9300	0	32	17.1	13800	2	22	23.2
400	6	21	18.9	4900	2	15	43.3	9400	0	32	15.3	13900	2	27	14.7
500	6	15	13.0	5000	2	11	26.9	9500	0	32	20.4	14000	2	32	11.7
600	6	9	7.5	5100	2	7	14.9	9600	0	32	32.3	14100	2	37	14.3
700	6	3	2.4	5200	2	3	7.3	9700	0	32	51.2	14200	2	42	21.1
800	5	56	58.0	5300	1	59	4.2	9800	0	33	16.6	14300	2	47	33.7
900	5	50	54.3	5400	1	55	5.9	9900	0	33	49.1	14400	2	52	50.9
1000	5	44	51.5	5500	1	51	12.2	10000	0	34	28.6	14500	2	58	13.2
1100	5	38	49.5	5600	1	47	23.3	10100	0	35	14.8	14600	3	3	40.2
1200	5	32	48.6	5700	1	43	39.4	10200	0	36	7.7	14700	3	9	12.0
1300	5	26	48.5	5800	1	40	0.4	10300	0	37	7.7	14800	3	14	48.2
1400	5	20	49.8	5900	1	36	26.2	10400	0	38	14.7	14900	3	20	29.0
1500	5	14	52.6	6000	1	32	57.2	10500	0	39	28.8	15000	3	26	13.8
1600	5	8	56.5	6100	1	29	33.5	10600	0	40	49.6	15100	3	32	2.9
1700	5	3	1.7	6200	1	26	14.8	10700	0	42	17.1	15200	3	37	56.3
1800	4	57	8.6	6300	1	23	1.5	10800	0	43	51.7	15300	3	43	53.6
1900	4	51	17.2	6400	1	19	53.4	10900	0	45	33.1	15400	3	49	54.8
2000	4	45	27.6	6500	1	16	50.9	11000	0	47	21.6	15500	3	55	59.7
2100	4	39	39.9	6600	1	13	54.0	11100	0	49	16.7	15600	4	2	8.1
2200	4	33	54.0	6700	1	11	2.6	11200	0	51	18.8	15700	4	8	20.2
2300	4	28	9.9	6800	1	8	16.7	11300	0	53	27.7	15800	4	14	35.5
2400	4	22	28.1	6900	1	5	36.5	11400	0	55	43.4	15900	4	20	53.9
2500	4	16	48.6	7000	1	3	2.2	11500	0	58	5.8	16000	4	27	15.5
2600	4	11	11.0	7100	1	0	33.4	11600	1	0	35.1	16100	4	33	40.1
2700	4	5	36.1	7200	0	58	10.6	11700	1	3	11.0	16200	4	40	7.5
2800	4	0	3.4	7300	0	55	53.8	11800	1	5	53.8	16300	4	46	37.9
2900	3	54	33.4	7400	0	53	43.1	11900	1	8	43.1	16400	4	53	10.4
3000	3	49	6.1	7500	0	51	38.3	12000	1	11	39.0	16500	4	59	45.4
3100	3	43	41.5	7600	0	49	39.6	12100	1	14	41.6	16600	5	6	22.7
3200	3	38	19.8	7700	0	47	47.0	12200	1	17	50.7	16700	5	13	2.0
3300	3	33	0.7	7800	0	46	0.6	12300	1	21	6.3	16800	5	19	43.5
3400	3	27	44.7	7900	0	44	20.5	12400	1	24	28.3	16900	5	26	26.8
3500	3	22	31.9	8000	0	42	46.7	12500	1	27	57.0	17000	5	33	11.7
3600	3	17	22.4	8100	0	41	19.0	12600	1	31	31.8	17100	5	39	58.0
3700	3	12	15.9	8200	0	39	58.0	12700	1	35	12.9	17200	5	46	45.9
3800	3	7	12.8	8300	0	38	43.3	12800	1	39	0.1	17300	5	53	35.0
3900	3	2	13.3	8400	0	37	35.0	12900	1	42	53.7	17400	6	0	25.1
4000	2	57	17.2	8500	0	36	33.2	13000	1	46	53.4	17500	6	7	16.2
4100	2	52	24.6	8600	0	35	37.9	13100	1	50	59.2	17600	6	14	8.2
4200	2	47	35.7	8700	0	34	49.3	13200	1	55	11.1	17700	6	21	0.5
4300	2	42	50.6	8800	0	34	7.4	13300	1	59	28.8	17800	6	27	53.6
4400	2	38	9.2	8900	0	33	31.8	13400	2	3	52.1	17900	6	34	47.2

Table XI.—*continued.* Equation, &c. of Jupiter's *Fourth* Satellite, with the principal Part of the Equation of Light.

Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.			Arg. A.	Equation A.		
	H.	M.	S.		H.	M.	S.		H.	M.	S.		H.	M.	S.
18000	6	41	40.7	22600	11	20	50.0	27200	12	53	38.5	31800	10	42	56.8
18100	6	48	34.1	22700	11	25	16.6	27300	12	53	0.7	31900	10	38	10.6
18200	6	55	28.0	22800	11	29	37.0	27400	12	52	16.2	32000	10	33	20.6
18300	7	2	21.3	22900	11	33	53.7	27500	12	51	25.2	32100	10	28	26.7
18400	7	9	14.2	23000	11	38	2.1	27600	12	50	27.8	32200	10	23	29.6
18500	7	16	6.4	23100	11	42	5.2	27700	12	49	23.7	32300	10	18	29.1
18600	7	22	57.9	23200	11	46	2.2	27800	12	48	13.1	32400	10	13	25.0
18700	7	29	48.4	23300	11	49	53.4	27900	12	46	56.0	32500	10	8	17.7
18800	7	36	38 1	23400	11	53	38.4	28000	12	45	32.5	32600	10	3	7.0
18900	7	43	26.6	23500	11	57	16.5	28100	12	44	2.7	32700	9	57	53.3
19000	7	50	13.9	23600	12	0	48.8	28200	12	42	26.6	32800	9	52	36.4
19100	7	56	59.6	23700	12	4	14.5	28300	12	40	44.2	32900	9	47	16.7
19200	8	3	43.9	23800	12	7	33.9	28400	12	38	55.6	33000	9	41	54.0
19300	8	10	26.3	23900	12	10	47.0	28500	12	37	1.0	33100	9	36	28.6
19400	8	17	6.9	24000	12	13	53.4	28600	12	35	0.3	33200	9	31	0.4
19500	8	23	45.2	24100	12	16	53.1	28700	12	32	53.4	33300	9	25	29.7
19600	8	30	21.5	24200	12	19	46.5	28800	12	30	40.5	33400	9	19	56.5
19700	8	36	55.5	24300	12	22	35.5	28900	12	28	21.8	33500	9	14	21.0
19800	8	43	27.0	24400	12	25	12.9	29000	12	25	57.0	33600	9	8	43.1
19900	8	49	55.8	24500	12	27	46.3	29100	12	23	26.7	33700	9	3	2.7
20000	8	56	21.8	24600	12	30	12.8	29200	12	20	50.3	33800	8	57	20.2
20100	9	2	45.0	24700	12	32	32.5	29300	12	18	8.2	33900	8	51	35.7
20200	9	9	5.3	24800	12	34	45.4	29400	12	15	20.6	34000	8	45	49.2
20300	9	15	22.4	24900	12	36	51.6	29500	12	12	27.2	34100	8	40	0.8
20400	9	21	36.3	25000	12	38	50.9	29600	12	9	28.5	34200	8	34	10.6
20500	9	27	46.8	25100	12	40	43.4	29700	12	6	24.1	34300	8	28	18.7
20600	9	33	53.6	25200	12	42	29.1	29800	12	3	14.5	34400	8	22	25.1
20700	9	39	56.8	25300	12	44	7.9	29900	11	59	59.5	34500	8	16	30.0
20800	9	45	56.1	25400	12	45	39.6	30000	11	56	39.2	34600	8	10	33.8
20900	9	51	51.7	25500	12	47	4.6	30100	11	53	13.8	34700	8	4	35.9
21000	9	57	43.1	25600	12	48	22.6	30200	11	49	43.2	34800	7	58	36.8
21100	10	3	30.3	25700	12	49	33.9	30300	11	46	7.6	34900	7	52	36.7
21200	10	9	13.5	25800	12	50	38.3	30400	11	42	26.8	35000	7	46	35.4
21300	10	14	52.4	25900	12	51	35.5	30500	11	38	41.2	35100	7	40	33.3
21400	10	20	26.6	26000	12	52	26.0	30600	11	34	50.8	35200	7	34	30.2
21500	10	25	56.2	26100	12	53	9.5	30700	11	30	55.8	35300	7	28	26.2
21600	10	31	21.1	26200	12	53	46.2	30800	11	26	56.1	35400	7	22	21.7
21700	10	36	41.1	26300	12	54	16.2	30900	11	22	51.7	35500	7	16	16.6
21800	10	41	56.5	26400	12	54	39.2	31000	11	18	42.4	35600	7	10	10.8
21900	10	47	6.7	26500	12	54	55.4	31100	11	14	29.1	35700	7	4	4.8
22000	10	52	11.9	26600	12	55	4.7	31200	11	10	11.3	35800	6	57	58.5
22100	10	57	11.6	26700	12	55	7.1	31300	11	5	49.1	35900	6	51	51.9
22200	11	2	6.1	26800	12	55	2.9	31400	11	1	22.8	36000	6	45	45.2
22300	11	6	55.4	26900	12	54	51.9	31500	10	56	52.3				
22400	11	11	39.3	27000	12	54	34.2	31600	10	52	17.8				
22500	11	16	17.6	27100	12	54	9.7	31700	10	47	39.4				

TABLE XII. Equation C of Jupiter's *Firſt* Satellite.

Arg. C.	Equation C.		Diff.	Arg. C.	Equation C.		Diff.	Arg. C.	Equation C.		Diff.
	M.	S.	SEC.		M.	S.	SEC.		M.	S.	SEC.
0	3	39.6		3400	6	42.7		6700	0	47.6	
			25.0				9.7				14.5
100	3	14.6		3500	6	52.4		6800	1	2.1	
			24.6				5.9				17.2
200	2	50.0		3600	6	58.3		6900	1	19.3	
			23.8				2.8				19.3
300	2	26.2		3700	7	1.1		7000	1	38.6	
			22.6				0.3				21.3
400	2	3.6		3800	7	0.8		7100	1	59.9	
			21.2				3.0				22.9
500	1	42.4		3900	6	57.8		7200	2	22.8	
			19.5				6.2				24.1
600	1	22.9		4000	6	51.6		7300	2	46.9	
			17.2				10.0				25.0
700	1	5.7		4100	6	41.6		7400	3	11.9	
			14.8				11.3				25.4
800	0	50.9		4200	6	30.3		7500	3	37.3	
			11.3				14.8				25.4
900	0	39.6		4300	6	15.5		7600	4	2.7	
			10.2				17.4				25.0
1000	0	29.4		4400	5	58.1		7700	4	27.7	
			6.3				19.5				24.3
1100	0	23.1		4500	5	38.6		7800	4	52.0	
			3.2				21.4				23.1
1200	0	19.9		4600	5	17.2		7900	5	15.1	
			0.1				23.0				22.3
1300	0	19.8		4700	4	54.2		8000	5	37.4	
			3.2				24.2				19.6
1400	0	23.0		4800	4	30.0		8100	5	57.0	
			6.3				25.0				16.6
1500	0	29.3		4900	4	5.0		8200	6	13.6	
			10.0				25.4				14.8
1600	0	39.3		5000	3	39.6		8300	6	28.4	
			11.5				25.4				11.5
1700	0	50.8		5100	3	14.2		8400	6	39.9	
			14.8				25.0				10.0
1800	1	5.6		5200	2	49.2		8500	6	49.9	
			16.6				25.2				6.3
1900	1	22.2		5300	2	25.0		8600	6	56.2	
			19.6				23.0				3.2
2000	1	41.8		5400	2	2.0		8700	6	59.4	
			22.3				21.4				0.1
2100	2	4.1		5500	1	40.6		8800	6	59.3	
			23.1				19.5				3.2
2200	2	27.2		5600	1	21.1		8900	6	56.1	
			24.3				17.4				6.3
2300	2	51.5		5700	1	3.7		9000	6	49.8	
			25.0				14.8				10.2
2400	3	16.5		5800	0	48.9		9100	6	39.6	
			25.4				11.3				11.3
2500	3	41.9		5900	0	37.6		9200	6	28.3	
			25.4				10.0				14.8
2600	4	7.3		6000	0	27.6		9300	6	13.5	
			25.0				6.2				17.2
2700	4	32.3		6100	0	21.4		9400	5	56.3	
			24.1				3.0				19.5
2800	4	56.4		6200	0	18.4		9500	5	36.8	
			22.9				0.3				21.2
2900	5	19.3		6300	0	18.1		9600	5	15.6	
			21.3				2.8				22.6
3000	5	40.6		6400	0	20.9		9700	4	53.0	
			19.3				5.9				23.8
3100	5	59.9		6500	0	26.8		9800	4	29.2	
			17.2				9.7				24.6
3200	6	17.1		6600	0	36.5		9900	4	4.6	
			14.5				11.1				25.0
3300	6	31.6		6700	0	47.6		10000	3	39.6	
			11.1								
3400	6	42.7									

Table XII.—*continued.* Equation C of Jupiter's *Second* Satellite.

Arg. C.	Equation C.		Diff.	Arg. C.	Equation C.		Diff.	Arg. C.	Equation C.		Diff.
	M.	S.	SEC.		M.	S.	SEC.		M.	S.	SEC.
0	15	20.0	113.7	3400	29	21.6	40.1	6700	2	11.7	65.7
100	13	26.3	111.6	3500	30	1.7	26.1	6800	3	17.4	77.4
200	11	34.7	108.3	3600	30	27.8	11.9	6900	4	34.8	87.6
300	9	46.4	103.8	3700	30	39.7	2.4	7000	6	2.4	96.7
400	8	2.6	96.2	3800	30	37.3	16.8	7100	7	39.1	103.6
500	6	26.4	88.2	3900	30	20.5	30.7	7200	9	22.7	110.6
600	4	58.2	78.5	4000	29	49.8	44.0	7300	11	13.3	113.5
700	3	39.7	67.3	4100	29	5.8	56.8	7400	13	6.8	115.7
800	2	32.4	55.4	4200	28	9.0	68.5	7500	15	2.5	116.1
900	1	37.0	42.4	4300	27	0.5	79.1	7600	16	58.6	114.1
1000	0	54.6	28.7	4400	25	41.4	88.6	7700	18	52.7	112.8
1100	0	25.9	14.4	4500	24	12.8	96.6	7800	20	45.5	104.0
1200	0	11.5	0.0	4600	22	36.2	103.6	7900	22	29.5	98.5
1300	0	11.5	14.5	4700	20	52.6	108.1	8000	24	8.0	90.0
1400	0	26.0	28.9	4800	19	4.5	111.2	8100	25	38.0	79.8
1500	0	54.9	42.7	4900	17	13.3	113.3	8200	26	57.8	68.5
1600	1	37.6	56.1	5000	15	20.0	113.3	8300	28	6.3	56.1
1700	2	33.7	68.5	5100	13	26.7	111.2	8400	29	2.4	42.7
1800	3	42.2	79.8	5200	11	35.5	108.1	8500	29	45.1	28.9
1900	5	2.0	90.0	5300	9	47.4	103.6	8600	30	14.0	14.5
2000	6	32.0	98.5	5400	8	3.8	96.6	8700	30	28.5	0.0
2100	8	10.5	106.0	5500	6	27.2	88.6	8800	30	28.5	14.4
2200	9	56.5	110.8	5600	4	58.6	79.1	8900	30	14.1	28.7
2300	11	47.3	114.1	5700	3	39.5	68.5	9000	29	45.4	42.4
2400	13	41.4	116.1	5800	2	31.0	56.8	9100	29	3.0	55.4
2500	15	37.5	115.7	5900	1	34.2	44.0	9200	28	7.6	67.3
2600	17	33.2	113.5	6000	0	50.2	30.7	9300	27	0.3	78.5
2700	19	26.7	110.6	6100	0	19.5	16.8	9400	25	41.8	88.2
2800	21	17.3	103.6	6200	0	2.7	2.4	9500	24	13.6	96.2
2900	23	0.9	96.7	6300	0	0.3	11.9	9600	22	37.4	103.8
3000	24	37.6	87.6	6400	0	12.2	26.1	9700	20	53.6	108.3
3100	26	5.2	77.4	6500	0	38.3	40.1	9800	19	5.3	111.6
3200	27	22.6	65.7	6600	1	18.4	53.3	9900	17	13.7	113.7
3300	28	28.3	53.3	6700	2	11.7		10000	15	20.0	
3400	29	21.6									

TABLE XII.—*continued.* Equation C of Jupiter's *Third* Satellite.

Arg. C.	Equation C.		Diff.	Arg. C.	Equation C.		Diff.	Arg. C.	Equation C.		Diff.
	M.	S.	SEC.		M.	S.	SEC.		M.	S.	SEC.
0	2	7.6	8.3	340	3	54.1	4.6	670	0	17.0	3.6
10	2	15.9	8.4	350	3	49.5	5.0	680	0	13.4	3.3
20	2	24.3	8.3	360	3	44.5	5.3	690	0	10.1	3.0
30	2	32.6	8.0	370	3	39.2	5.6	700	0	7.1	2.3
40	2	40.6	8.0	380	3	33.6	5.9	710	0	4.8	2.0
50	2	48.6	7.8	390	3	27.7	6.3	720	0	2.8	1.4
60	2	56.4	7.6	400	3	21.4	6.5	730	0	1.4	1.0
70	3	4.0	7.3	410	3	14.9	6.8	740	0	0.4	0.4
80	3	11.3	7.0	420	3	8.1	7.1	750	0	0.0	0.0
90	3	18.3	6.7	430	3	1.0	7.3	760	0	0.0	0.5
100	3	25.0	6.3	440	2	53.7	7.4	770	0	0.5	0.9
110	3	31.3	6.0	450	2	46.3	7.5	780	0	1.4	1.6
120	3	37.3	5.7	460	2	38.8	7.7	790	0	3.0	2.0
130	3	43.0	5.2	470	2	31.1	7.8	800	0	5.0	2.5
140	3	48.2	4.9	480	2	23.3	7.8	810	0	7.5	3.0
150	3	53.1	4.3	490	2	15.5	7.9	820	0	10.5	3.4
160	3	57.4	3.9	500	2	7.6	7.9	830	0	13.9	3.9
170	4	1.3	3.4	510	1	59.7	7.8	840	0	17.8	4.3
180	4	4.7	3.0	520	1	51.9	7.8	850	0	22.1	4.9
190	4	7.7	2.5	530	1	44.1	7.7	860	0	27.0	5.2
200	4	10.2	2.0	540	1	36.4	7.5	870	0	32.2	5.7
210	4	12.2	1.6	550	1	28.9	7.4	880	0	37.9	6.0
220	4	13.8	0.9	560	1	21.5	7.3	890	0	43.9	6.3
230	4	14.7	0.5	570	1	14.2	7.1	900	0	50.2	6.7
240	4	15.2	0.0	580	1	7.1	6.8	910	0	56.9	7.0
250	4	15.2	0.4	590	1	0.3	6.5	920	1	3.9	7.3
260	4	14.8	1.0	600	0	53.8	6.3	930	1	11.2	7.6
270	4	13.8	1.4	610	0	47.5	5.9	940	1	18.8	7.8
280	4	12.4	2.0	620	0	41.6	5.6	950	1	26.6	8.0
290	4	10.4	2.3	630	0	36.0	5.3	960	1	34.6	8.0
300	4	8.1	3.0	640	0	30.7	5.0	970	1	42.6	8.3
310	4	5.1	3.3	650	0	25.7	4.6	980	1	50.9	8.4
320	4	1.8	3.6	660	0	21.1	4.1	990	1	59.3	8.3
330	3	58.2	4.1	670	0	17.0		1000	2	7.6	
340	3	54.1									

Table XII.—*continued.* Equation C of Jupiter's *Fourth* Satellite.

Arg. C.	Equation C.			Diff.	Arg. C.	Equation C.			Diff.	Arg. C.	Equation C.			Diff.
	H.	M.	S.	SEC.		H.	M.	S.	SEC.		H.	M.	S.	SEC.
0	0	56	53.1	215.3	3400	1	44	46.3	121.0	6700	0	7	10.3	98.1
100	1	0	28.4	214.9	3500	1	42	45.3	131.8	6800	0	5	32.2	86.0
200	1	4	3.3	212.8	3600	1	40	33.5	141.9	6900	0	4	6.2	73.6
300	1	7	36.1	210.4	3700	1	38	11.6	151.6	7000	0	2	52.6	60.8
400	1	11	6.5	207.9	3800	1	35	40.0	160.7	7100	0	1	51.8	47.8
500	1	14	34.4	201.6	3900	1	32	59.3	169.1	7200	0	1	4.0	34.7
600	1	17	56.0	197.7	4000	1	30	10.2	176.9	7300	0	0	29.3	21.3
700	1	21	13.7	191.8	4100	1	27	13.3	184.0	7400	0	0	8.0	8.0
800	1	24	25.5	185.0	4200	1	24	9.3	190.4	7500	0	0	0.0	5.6
900	1	27	30.5	177.9	4300	1	20	58.9	195.9	7600	0	0	5.6	18.9
1000	1	30	28.4	169.7	4400	1	17	43.0	199.8	7700	0	0	24.5	32.5
1100	1	33	18.1	160.9	4500	1	14	23.2	205.9	7800	0	0	57.0	45.6
1200	1	35	59.0	151.6	4600	1	10	57.3	208.2	7900	0	1	42.6	58.8
1300	1	38	30.6	141.7	4700	1	7	29.1	210.6	8000	0	2	41.4	71.8
1400	1	40	52.3	131.2	4800	1	3	58.5	212.5	8100	0	3	53.2	84.2
1500	1	43	3.5	120.0	4900	1	0	26.0	212.9	8200	0	5	17.4	96.7
1600	1	45	3.5	108.6	5000	0	56	53.1	212.9	8300	0	6	54.1	108.6
1700	1	46	52.1	96.7	5100	0	53	20.2	212.5	8400	0	8	42.7	120.0
1800	1	48	28.8	84.2	5200	0	49	47.7	210.6	8500	0	10	42.7	131.2
1900	1	49	53.0	71.8	5300	0	46	17.1	208.2	8600	0	12	53.9	141.7
2000	1	51	4.8	58.8	5400	0	42	48.9	205.9	8700	0	15	15.6	151.6
2100	1	52	3.6	45.6	5500	0	39	23.0	199.8	8800	0	17	47.2	160.9
2200	1	52	49.2	32.5	5600	0	36	3.2	195.9	8900	0	20	28.1	169.7
2300	1	53	21.7	18.9	5700	0	32	47.3	190.4	9000	0	23	17.8	177.9
2400	1	53	40.6	5.6	5800	0	29	36.9	184.0	9100	0	26	15.7	185.0
2500	1	53	46.2	8.0	5900	0	26	32.9	176.9	9200	0	29	20.7	191.8
2600	1	53	38.2	21.3	6000	0	23	36.0	169.1	9300	0	32	32.5	197.7
2700	1	53	16.9	34.7	6100	0	20	46.9	160.7	9400	0	35	50.2	201.6
2800	1	52	42.2	47.8	6200	0	18	6.2	151.6	9500	0	39	11.8	207.9
2900	1	51	54.4	60.8	6300	0	15	34.6	141.9	9600	0	42	39.7	210.4
3000	1	50	53.6	73.6	6400	0	13	12.7	131.8	9700	0	46	10.1	212.8
3100	1	49	40.0	86.0	6500	0	11	0.9	121.0	9800	0	49	42.9	214.9
3200	1	48	14.0	98.1	6600	0	8	59.9	109.6	9900	0	53	17.8	215.3
3300	1	46	35.9	109.6	6700	0	7	10.3		10000	0	56	53.1	
3400	1	44	46.3											

Table XIII. Equation c of Jupiter's *Third* Satellite.

Arg. c.	Equation c.		Diff.	Arg. c.	Equation c.		Diff.	Arg. c.	Equation c.		Diff.
	M.	S.	SEC.		M.	S.	SEC.		M.	S.	SEC.
0	0	36.8	3.7	340	1	12.6	0.8	670	0	2.2	1.6
10	0	33.1	3.7	350	1	13.4	0.2	680	0	3.8	2.0
20	0	29.4	3.6	360	1	13.6	0.2	690	0	5.8	2.5
30	0	25.8	3.3	370	1	13.4	0.7	700	0	8.3	2.9
40	0	22.5	3.1	380	1	12.7	1.1	710	0	11.2	3.2
50	0	19.4	2.7	390	1	11.6	1.7	720	0	14.4	3.4
60	0	16.7	2.2	400	1	9.9	2.1	730	0	17.8	3.7
70	0	14.5	1.9	410	1	7.8	2.4	740	0	21.5	3.9
80	0	12.6	1.4	420	1	5.4	2.7	750	0	25.4	4.0
90	0	11.2	0.9	430	1	2.7	3.0	760	0	29.4	4.1
100	0	10.3	0.3	440	0	59.7	3.4	770	0	33.5	3.9
110	0	10.0	0.1	450	0	56.3	3.6	780	0	37.4	3.9
120	0	10.1	0.7	460	0	52.7	3.9	790	0	41.3	3.8
130	0	10.8	1.2	470	0	48.8	3.9	800	0	45.1	3.7
140	0	12.0	1.8	480	0	44.9	4.0	810	0	48.8	3.4
150	0	13.8	2.2	490	0	40.9	4.1	820	0	52.2	3.0
160	0	16.0	2.6	500	0	36.8	4.1	830	0	55.2	2.4
170	0	18.6	3.0	510	0	32.7	4.0	840	0	57.6	2.2
180	0	21.6	3.3	520	0	28.7	3.9	850	0	59.8	1.8
190	0	24.9	3.6	530	0	24.8	3.8	860	1	1.6	1.2
200	0	28.5	3.9	540	0	21.0	3.6	870	1	2.8	0.7
210	0	32.4	3.9	550	0	17.4	3.5	880	1	3.5	0.1
220	0	36.3	3.9	560	0	13.9	3.0	890	1	3.6	0.3
230	0	40.2	4.0	570	0	10.9	2.7	900	1	3.3	0.9
240	0	44.2	4.0	580	0	8.2	2.4	910	1	2.4	1.4
250	0	48.2	3.9	590	0	5.8	2.1	920	1	1.0	1.9
260	0	52.1	3.7	600	0	3.7	1.7	930	0	59.1	2.2
270	0	55.8	3.4	610	0	2.0	1.1	940	0	56.9	2.7
280	0	59.2	3.2	620	0	0.9	0.7	950	0	54.2	3.1
290	1	2.4	2.9	630	0	0.2	0.2	960	0	51.1	3.3
300	1	5.3	2.5	640	0	0.0	0.2	970	0	47.8	3.6
310	1	7.8	2.0	650	0	0.2	0.8	980	0	44.2	3.7
320	1	9.8	1.6	660	0	1.0	1.2	990	0	40.5	3.7
330	1	11.4	1.2	670	0	2.2		1000	0	36.8	
340	1	12.6									

TABLE XIV. Equations F and G of Jupiter's *Firſt* Satellite.

Arg. F and G.		Eq. F.	Eq. G.	Arg. F and G.		Eq. F.	Eq. G.	Arg. F and G.		Eq. F.	Eq. G.
		SEC.	SEC.			SEC.	SEC.			SEC.	SEC.
250	250	0.0	0.0	420	80	5.8	1.9	590	910	17.0	5.7
260	240	0.1	0.0	430	70	6.4	2.1	600	900	17.6	5.8
270	230	0.1	0.1	440	60	7.0	2.3	610	890	18.2	6.0
280	220	0.3	0.1	450	50	7.7	2.6	620	880	18.7	6.2
290	210	0.4	0.1	460	40	8.4	2.8	630	870	19.2	6.3
300	200	0.6	0.2	470	30	9.0	3.0	640	860	19.6	6.5
310	190	0.8	0.3	480	20	9.7	3.2	650	850	20.0	6.7
320	180	1.1	0.4	490	10	10.4	3.5	660	840	20.4	6.8
330	170	1.4	0.5	500	0	11.1	3.7	670	830	20.8	6.9
340	160	1.8	0.6	510	990	11.8	3.9	680	820	21.1	7.0
350	150	2.2	0.7	520	980	12.5	4.2	690	810	21.4	7.1
360	140	2.6	0.9	530	970	13.2	4.4	700	800	21.6	7.2
370	130	3.0	1.1	540	960	13.8	4.6	710	790	21.8	7.3
380	120	3.5	1.2	550	950	14.5	4.8	720	780	21.9	7.3
390	110	4.0	1.4	560	940	15.2	5.1	730	770	22.0	7.3
400	100	4.6	1.6	570	930	15.8	5.3	740	760	22.1	7.4
410	90	5.2	1.7	580	920	16.4	5.5	750	750	22.2	7.4
420	80	5.8	1.9	590	910	17.0	5.7				

TABLE XIV.—*continued.* Equations D, E, F, and G, of Jupiter's *Second* Satellite.

Arg. D, E, F, and G.		Eq. D.	Eq. E.	Eq. F.	Eq. G.	Arg. D, E, F, and G.		Eq. D.	Eq. E.	Eq. F.	Eq. G.
		SEC.	SEC.	SEC.	SEC.			SEC.	SEC.	SEC.	SEC.
250	250	57.0	31.0	94.0	48.0	500	0	28.5	15.5	47.0	24.0
260	240	56.9	31.0	93.9	47.9	510	990	26.7	14.5	44.1	22.5
270	230	56.8	30.9	93.6	47.8	520	980	24.9	13.5	41.1	21.0
280	220	56.5	30.7	93.2	47.6	530	970	23.2	12.6	38.2	19.5
290	210	56.1	30.5	92.5	47.3	540	960	21.4	11.6	35.3	18.0
300	200	55.6	30.3	91.7	46.8	550	950	19.7	10.7	32.5	16.6
310	190	55.0	29.9	90.7	46.3	560	940	18.0	9.8	29.7	15.1
320	180	54.3	29.5	89.5	45.7	570	930	16.4	8.9	27.0	13.8
330	170	53.5	29.1	88.2	45.0	580	920	14.8	8.0	24.4	12.4
340	160	52.5	28.6	86.7	44.3	590	910	13.2	7.2	21.8	11.1
350	150	51.5	28.0	85.0	43.4	600	900	11.8	6.4	19.4	9.9
360	140	50.4	27.4	83.2	42.5	610	890	10.3	5.6	17.0	8.7
370	130	49.3	26.8	81.3	41.6	620	880	9.0	4.9	14.8	7.6
380	120	48.0	26.1	79.2	40.6	630	870	7.7	4.2	12.7	6.5
390	110	46.7	25.4	77.0	39.5	640	860	6.6	3.6	10.8	5.5
400	100	45.2	24.6	74.6	38.2	650	850	5.5	3.0	9.0	4.6
410	90	43.8	23.8	72.2	36.9	660	840	4.5	2.4	7.3	3.7
420	80	42.2	23.0	69.6	35.6	670	830	3.5	1.9	5.8	3.0
430	70	40.6	22.1	67.0	34.2	680	820	2.7	1.5	4.5	2.3
440	60	39.0	21.2	64.3	32.9	690	810	2.0	1.1	3.3	1.7
450	50	37.3	20.3	61.5	31.4	700	800	1.4	0.7	2.3	1.2
460	40	35.6	19.4	58.7	30.0	710	790	0.9	0.5	1.5	0.7
470	30	33.8	18.4	55.8	28.5	720	780	0.5	0.3	0.8	0.4
480	20	32.1	17.5	52.9	27.0	730	770	0.2	0.1	0.4	0.2
490	10	30.3	16.5	49.9	25.5	740	760	0.1	0.0	0.0	0.1
500	0	28.5	15.5	47.0	24.0	750	750	0.0	0.0	0.1	0.0

TABLE XIV.—*continued.* Equations D, E, F, and G, of Jupiter's *Third* Satellite.

Arguments D, E, F, and G.		Equation D.		Diff.	Equation E.		Diff.	Equation F.		Diff.	Equation G.		Diff.
		M.	S.	SEC.	M.	S.	SEC.	M.	S.	SEC.	M.	S.	SEC.
750	750	0	0.0	0.5	0	0.0	0.3	0	0.0	0.0	0	0.0	0.0
760	740	0	0.5	1.5	0	0.3	0.8	0	0.0	0.1	0	0.0	0.1
770	730	0	2.0	2.6	0	1.1	1.5	0	0.1	0.2	0	0.1	0.1
780	720	0	4.6	3.7	0	2.6	2.0	0	0.3	0.2	0	0.2	0.1
790	710	0	8.3	4.6	0	4.6	2.6	0	0.5	0.2	0	0.3	0.2
800	700	0	12.9	5.6	0	7.2	3.1	0	0.7	0.3	0	0.5	0.2
810	690	0	18.5	6.6	0	10.3	3.7	0	1.0	0.4	0	0.7	0.2
820	680	0	25.1	7.6	0	14.0	4.2	0	1.4	0.4	0	0.9	0.2
830	670	0	32.7	8.5	0	18.2	4.7	0	1.8	0.5	0	1.1	0.3
840	660	0	41.2	9.3	0	22.9	5.2	0	2.3	0.5	0	1.4	0.3
850	650	0	50.5	10.2	0	28.1	5.7	0	2.8	0.6	0	1.7	0.4
860	640	1	0.7	11.0	0	33.8	6.1	0	3.4	0.7	0	2.1	0.3
870	630	1	11.7	11.7	0	39.9	6.5	0	4.1	0.6	0	2.4	0.4
880	620	1	23.4	12.5	0	46.4	6.9	0	4.7	0.7	0	2.8	0.4
890	610	1	35.9	13.1	0	53.3	7.3	0	5.4	0.8	0	3.2	0.4
900	600	1	49.0	13.7	1	0.6	7.7	0	6.2	0.8	0	3.6	0.5
910	590	2	2.7	14.4	1	8.3	7.9	0	7.0	0.8	0	4.1	0.5
920	580	2	17.1	14.8	1	16.2	8.3	0	7.8	0.8	0	4.6	0.4
930	570	2	31.9	15.2	1	24.5	8.4	0	8.6	0.9	0	5.0	0.5
940	560	2	47.1	15.6	1	32.9	8.7	0	9.5	0.9	0	5.5	0.6
950	550	3	2.7	16.0	1	41.6	8.9	0	10.4	0.9	0	6.1	0.5
960	540	3	18.7	16.2	1	50.5	9.0	0	11.3	0.9	0	6.6	0.6
970	530	3	34.9	16.4	1	59.5	9.2	0	12.2	0.9	0	7.2	0.5
980	520	3	51.3	16.6	2	8.7	9.2	0	13.1	0.9	0	7.7	0.5
990	510	4	7.9	16.6	2	17.9	9.2	0	14.0	1.0	0	8.2	0.6
0	500	4	24.5	16.6	2	27.1	9.2	0	15.0	1.0	0	8.8	0.6
10	490	4	41.1	16.6	2	36.3	9.2	0	16.0	0.9	0	9.4	0.5
20	480	4	57.7	16.4	2	45.5	9.2	0	16.9	0.9	0	9.9	0.5
30	470	5	14.1	16.2	2	54.7	9.0	0	17.8	0.9	0	10.4	0.6
40	460	5	30.3	16.0	3	3.7	8.9	0	18.7	0.9	0	11.0	0.5
50	450	5	46.3	15.6	3	12.6	8.7	0	19.6	0.9	0	11.5	0.6
60	440	6	1.9	15.2	3	21.3	8.4	0	20.5	0.9	0	12.1	0.5
70	430	6	17.1	14.8	3	29.7	8.3	0	21.4	0.8	0	12.6	0.4
80	420	6	31.9	14.4	3	38.0	7.9	0	22.2	0.8	0	13.0	0.5
90	410	6	46.3	13.7	3	45.9	7.7	0	23.0	0.8	0	13.5	0.5
100	400	7	0.0	13.1	3	53.6	7.3	0	23.8	0.8	0	14.0	0.4
110	390	7	13.1	12.5	4	0.9	6.9	0	24.6	0.7	0	14.4	0.4
120	380	7	25.6	11.7	4	7.8	6.5	0	25.3	0.6	0	14.8	0.4
130	370	7	37.3	11.0	4	14.3	6.1	0	25.9	0.7	0	15.2	0.3
140	360	7	48.3	10.2	4	20.4	5.7	0	26.6	0.6	0	15.5	0.4
150	350	7	58.5	9.3	4	26.1	5.2	0	27.2	0.5	0	15.9	0.3
160	340	8	7.8	8.5	4	31.3	4.7	0	27.7	0.5	0	16.2	0.3
170	330	8	16.3	7.6	4	36.0	4.2	0	28.2	0.4	0	16.5	0.2
180	320	8	23.9	6.6	4	40.2	3.7	0	28.6	0.4	0	16.7	0.2
190	310	8	30.5	5.6	4	43.9	3.1	0	29.0	0.3	0	16.9	0.2
200	300	8	36.1	4.6	4	47.0	2.6	0	29.3	0.2	0	17.1	0.2
210	290	8	40.7	3.7	4	49.6	2.0	0	29.5	0.2	0	17.3	0.1
220	280	8	44.4	2.6	4	51.6	1.5	0	29.7	0.2	0	17.4	0.1
230	270	8	47.0	1.5	4	53.1	0.8	0	29.9	0.1	0	17.5	0.1
240	260	8	48.5	0.5	4	53.9	0.5	0	30.0	0.0	0	17.6	0.0
250	250	8	49.0		4	54.4		0	30.0		0	17.6	

TABLE XIV.—*continued.* Equations D and E of Jupiter's *Fourth* Satellite.

Argument D.		Equation D.		Diff.	Arg. E.	Equat. E.	Arg. E.	Equat. E.
		M.	S.	SEC.		SEC.		SEC.
750	750	0	0.0		0	13.1	510	12.9
760	740	0	0.1	0.1	10	14.5	520	12.6
770	730	0	0.6	0.5	20	16.0	530	12.4
780	720	0	1.3	0.7	30	17.4	540	12.3
790	710	0	2.3	1.0	40	18.7	550	12.1
800	700	0	3.6	1.3	50	19.9	560	11.9
810	690	0	5.2	1.6	60	21.1	570	11.6
820	680	0	7.0	1.8	70	22.2	580	11.4
830	670	0	9.1	2.1	80	23.0	590	11.1
840	660	0	11.4	2.3	90	23.9	600	10.9
850	650	0	14.0	2.6	100	24.7	610	10.6
860	640	0	16.9	2.9	110	25.2	620	10.3
870	630	0	20.0	3.1	120	25.7	630	10.0
880	620	0	23.3	3.3	130	26.0	640	9.7
890	610	0	26.7	3.4	140	26.1	650	9.4
900	600	0	30.4	3.7	150	26.2	660	8.9
910	590	0	34.2	3.8	160	26.1	670	8.5
920	580	0	38.2	4.0	170	25.9	680	8.1
930	570	0	42.3	4.1	180	25.7	690	7.6
940	560	0	46.5	4.2	190	25.4	700	7.1
950	550	0	50.8	4.3	200	24.9	710	6.6
960	540	0	55.3	4.5	210	24.4	720	6.0
970	530	0	59.8	4.5	220	23.9	730	5.4
980	520	1	4.4	4.6	230	23.2	740	4.7
990	510	1	9.0	4.6	240	22.7	750	4.1
0	500	1	13.6	4.6	250	22.1	760	3.5
10	490	1	18.2	4.6	260	21.5	770	3.0
20	480	1	22.8	4.6	270	20.8	780	2.3
30	470	1	27.4	4.6	280	20.3	790	1.8
40	460	1	31.9	4.5	290	19.6	800	1.3
50	450	1	36.4	4.5	300	19.1	810	0.8
60	440	1	40.7	4.3	310	18.6	820	0.5
70	430	1	44.9	4.2	320	18.0	830	0.3
80	420	1	49.0	4.1	330	17.6	840	0.1
90	410	1	53.0	4.0	340	17.2	850	0.0
100	400	1	56.8	3.8	350	16.8	860	0.1
110	390	2	0.5	3.7	360	16.5	870	0.2
120	380	2	3.9	3.4	370	16.2	880	0.5
130	370	2	7.2	3.3	380	15.9	890	1.0
140	360	2	10.3	3.1	390	15.6	900	1.5
150	350	2	13.2	2.9	400	15.3	910	2.3
160	340	2	15.8	2.6	410	15.1	920	3.2
170	330	2	18.1	2.3	420	14.8	930	4.0
180	320	2	20.2	2.1	430	14.6	940	5.1
190	310	2	22.0	1.8	440	14.3	950	6.3
200	300	2	23.6	1.6	450	14.1	960	7.5
210	290	2	24.9	1.3	460	13.9	970	8.8
220	280	2	25.9	1.0	470	13.7	980	10.2
230	270	2	26.6	0.7	480	13.6	990	11.7
240	260	2	27.1	0.5	490	13.3	1000	13.1
250	250	2	27.2	0.1	500	13.1		

TABLE XV. Reduction H of Jupiter's *First* Satellite.

Arg. H.		Red.	Diff.	Arg. H.		Red.	Diff.	Arg. H.		Red.	Diff.
		SEC.	SEC.			SEC.	SEC.			SEC.	SEC.
0	5000	23.4	2.9	1700	6700	3.6	1.7	3400	8400	44.6	1.1
100	5100	20.5	2.9	1800	6800	5.3	2.0	3500	8500	45.7	0.8
200	5200	17.6	2.8	1900	6900	7.3	2.3	3600	8600	46.5	0.3
300	5300	14.8	2.7	2000	7000	9.6	2.5	3700	8700	46.8	0.0
400	5400	12.1	2.5	2100	7100	12.1	2.7	3800	8800	46.8	0.3
500	5500	9.6	2.3	2200	7200	14.8	2.8	3900	8900	46.5	0.8
600	5600	7.3	2.0	2300	7300	17.6	2.9	4000	9000	45.7	1.1
700	5700	5.3	1.7	2400	7400	20.5	2.9	4100	9100	44.6	1.4
800	5800	3.6	1.4	2500	7500	23.4	2.9	4200	9200	43.2	1.7
900	5900	2.2	1.1	2600	7600	26.3	2.9	4300	9300	41.5	2.0
1000	6000	1.1	0.8	2700	7700	29.2	2.8	4400	9400	39.5	2.3
1100	6100	0.3	0.3	2800	7800	32.0	2.7	4500	9500	37.2	2.5
1200	6200	0.0	0.0	2900	7900	34.7	2.5	4600	9600	34.7	2.7
1300	6300	0.0	0.3	3000	8000	37.2	2.3	4700	9700	32.0	2.8
1400	6400	0.3	0.8	3100	8100	39.5	2.0	4800	9800	29.2	2.9
1500	6500	1.1	1.1	3200	8200	41.5	1.7	4900	9900	26.3	2.9
1600	6600	2.2	1.4	3300	8300	43.2	1.4	5000	10000	23.4	
1700	6700	3.6		3400	8400	44.6					

TABLE XV.—*continued.* Reduction H of Jupiter's *Second* Satellite.

Arg. H.		Red.	Diff.	Arg. H.		Red.	Diff.	Arg. H.		Red.	Diff.
		SEC.	SEC.			SEC.	SEC.			SEC.	SEC.
0	5000	46.6	5.8	1700	6700	7.3	3.4	3400	8400	88.7	2.2
100	5100	40.8	5.8	1800	6800	10.7	4.0	3500	8500	90.9	1.5
200	5200	35.0	5.6	1900	6900	14.7	4.5	3600	8600	92.4	0.7
300	5300	29.4	5.2	2000	7000	19.2	5.0	3700	8700	93.1	0.0
400	5400	24.2	5.0	2100	7100	24.2	5.2	3800	8800	93.1	0.7
500	5500	19.2	4.5	2200	7200	29.4	5.6	3900	8900	92.4	1.5
600	5600	14.7	4.0	2300	7300	35.0	5.8	4000	9000	90.9	2.2
700	5700	10.7	3.4	2400	7400	40.8	5.8	4100	9100	88.7	2.8
800	5800	7.3	2.8	2500	7500	46.6	5.8	4200	9200	85.9	3.4
900	5900	4.5	2.2	2600	7600	52.4	5.8	4300	9300	82.5	4.0
1000	6000	2.3	1.5	2700	7700	58.2	5.6	4400	9400	78.5	4.5
1100	6100	0.8	0.7	2800	7800	63.8	5.2	4500	9500	74.0	5.0
1200	6200	0.1	0.0	2900	7900	69.0	5.0	4600	9600	69.0	5.2
1300	6300	0.1	0.7	3000	8000	74.0	4.5	4700	9700	63.8	5.6
1400	6400	0.8	1.5	3100	8100	78.5	4.0	4800	9800	58.2	5.8
1500	6500	2.3	2.2	3200	8200	82.5	3.4	4900	9900	52.4	5.8
1600	6600	4.5	2.8	3300	8300	85.9	2.8	5000	10000	46.6	
1700	6700	7.3		3400	8400	88.7					

TABLE XV.—*continued.* Reduction H of Jupiter's *Third* Satellite.

Arg. H		Red. H.	Diff.	Arg. H.		Red. H.	Diff.	Arg. H.		Red. H.	Diff.
		SEC.	SEC.			SEC.	SEC.			SEC.	SEC.
0	5000	89.0	11.1	1700	6700	13.7	6.6	3400	8400	169.7	4.1
100	5100	77.9	11.1	1800	6800	20.3	7.7	3500	8500	173.8	2.8
200	5200	66.8	10.6	1900	6900	28.0	8.6	3600	8600	176.6	1.6
300	5300	56.2	10.1	2000	7000	36.6	9.5	3700	8700	178.2	0.0
400	5400	46.1	9.5	2100	7100	46.1	10.1	3800	8800	178.2	1.6
500	5500	36.6	8.6	2200	7200	56.2	10.6	3900	8900	176.6	2.8
600	5600	28.0	7.7	2300	7300	66.8	11.1	4000	9000	173.8	4.1
700	5700	20.3	6.6	2400	7400	77.9	11.1	4100	9100	169.7	5.4
800	5800	13.7	5.4	2500	7500	89.0	11.1	4200	9200	164.3	6.6
900	5900	8.3	4.1	2600	7600	100.1	11.1	4300	9300	157.7	7.7
1000	6000	4.2	2.8	2700	7700	111.2	10.6	4400	9400	150.0	8.6
1100	6100	1.4	1.4	2800	7800	121.8	10.1	4500	9500	141.4	9.5
1200	6200	0.0	0.0	2900	7900	131.9	9.5	4600	9600	131.9	10.1
1300	6300	0.0	1.4	3000	8000	141.4	8.6	4700	9700	121.8	10.6
1400	6400	1.4	2.8	3100	8100	150.0	7.7	4800	9800	111.2	11.1
1500	6500	4.2	4.1	3200	8200	157.7	6.6	4900	9900	100.1	11.1
1600	6600	8.3	5.4	3300	8300	164.3	5.4	5000	10000	89.0	
1700	6700	13.7		3400	8400	169.7					

TABLE XV.—*continued.* Reductions H and I of Jupiter's *Fourth* Satellite.

Arg. H, I.		Red. H.	Diff.	Red. I.	Arg. H, I.		Red. H.	Diff.	Red. I.	Arg. H, I.		Red. H.	Diff.	Red. I.
		M. S.	SEC.	SEC.			M. S.	SEC.	SEC.			M. S.	SEC.	SEC.
0	5000	2 47.0	20.9	1.4	1700	6700	0 25.9	12.3	0.2	3400	8400	5 18.3	7.6	2.7
100	5100	2 26.1	20.7	1.2	1800	6800	0 38.2	14.4	0.3	3500	8500	5 25.9	5.3	2.8
200	5200	2 5.4	19.9	1.0	1900	6900	0 52.6	16.2	0.4	3600	8600	5 31.2	2.6	2.8
300	5300	1 45.5	19.0	0.8	2000	7000	1 8.8	17.7	0.6	3700	8700	5 33.8	0.0	2.8
400	5400	1 26.5	17.7	0.7	2100	7100	1 26.5	19.0	0.7	3800	8800	5 33.8	2.6	2.8
500	5500	1 8.8	16.2	0.6	2200	7200	1 45.5	19.9	0.8	3900	8900	5 31.2	5.3	2.8
600	5600	0 52.6	14.4	0.4	2300	7300	2 5.4	20.7	1.0	4000	9000	5 25.9	7.6	2.8
700	5700	0 38.2	12.3	0.3	2400	7400	2 26.1	20.9	1.2	4100	9100	5 18.3	10.2	2.7
800	5800	0 25.9	10.2	0.2	2500	7500	2 47.0	20.9	1.4	4200	9200	5 8.1	12.3	2.6
900	5900	0 15.7	7.6	0.1	2600	7600	3 7.9	20.7	1.6	4300	9300	4 55.8	14.4	2.5
1000	6000	0 8.1	5.3	0.0	2700	7700	3 28.6	19.9	1.8	4400	9400	4 41.4	16.2	2.4
1100	6100	0 2.8	2.6	0.0	2800	7800	3 48.5	19.0	2.0	4500	9500	4 25.2	17.7	2.2
1200	6200	0 0.2	0.0	0.0	2900	7900	4 7.5	17.7	2,1	4600	9600	4 7.5	19.0	2.1
1300	6300	0 0.2	2.6	0.0	3000	8000	4 25.2	16.2	2.2	4700	9700	3 48.5	19.9	2.0
1400	6400	0 2.8	5.3	0.0	3100	8100	4 41.4	14.4	2.4	4800	9800	3 28.6	20.7	1.8
1500	6500	0 8.1	7.6	0.0	3200	8200	4 55.8	12.3	2.5	4900	9900	3 7.9	20.9	1.6
1600	6600	0 15.7	10.2	0.1	3300	8300	5 8.1	10.2	2.6	5000	10000	2 47.0		1.4
1700	6700	0 25.9		0.2	3400	8400	5 18.3		2.7					

TABLE XVI. Semidurations of Jupiter's *First* Satellite.

Argument H.								
Argument H.				Semidurations.			Difference.	N
				H.	M.	S.	SEC.	
0	5000	5000	0	1	7	34.2		100
100	4900	5100	9900	1	7	33.2	1.0	100
200	4800	5200	9800	1	7	30.4	2.8	100
300	4700	5300	9700	1	7	25.5	4.9	100
400	4600	5400	9600	1	7	18.9	6.6	99
500	4500	5500	9500	1	7	10.6	8.3	99
600	4400	5600	9400	1	7	0.6	10.0	98
700	4300	5700	9300	1	6	49.2	11.4	97
800	4200	5800	9200	1	6	36.6	12.6	96
900	4100	5900	9100	1	6	22.7	13.9	95
1000	4000	6000	9000	1	6	8.1	14.6	94
1100	3900	6100	8900	1	5	52.7	15.4	93
1200	3800	6200	8800	1	5	37.0	15.7	92
1300	3700	6300	8700	1	5	21.0	16.0	91
1400	3600	6400	8600	1	5	5.0	16.0	90
1500	3500	6500	8500	1	4	49.5	15.5	88
1600	3400	6600	8400	1	4	34.4	15.1	87
1700	3300	6700	8300	1	4	20.2	14.2	86
1800	3200	6800	8200	1	4	7.0	13.2	85
1900	3100	6900	8100	1	3	55.1	11.9	84
2000	3000	7000	8000	1	3	44.7	10.4	83
2100	2900	7100	7900	1	3	35.9	8.8	82
2200	2800	7200	7800	1	3	28.9	7.0	81
2300	2700	7300	7700	1	3	23.8	5.1	81
2400	2600	7400	7600	1	3	20.8	3.0	81
2500	2500	7500	7500	1	3	19.7	1.1	81

TABLE XVI.—*continued.* Semidurations of Jupiter's *Second* Satellite.

Argument M.		Semidurations.			Diff.	Numb. N	Argument M.		Semidurations.			Diff.	Numb. N
		H.	M.	S.	SEC.				H.	M.	S.	SEC.	
1.0000	1.0000	1	25	21.5	0.3	1.000	1.3300	0.6700	1	20	31.9	18.4	0.829
1.0100	0.9900	1	25	21.2	0.7	1.000	1.3400	0.6600	1	20	13.5	19.0	0.817
1.0200	0.9800	1	25	20.5	1.3	0.999	1.3500	0.6500	1	19	54.5	19.6	0.806
1.0300	0.9700	1	25	19.2	1.9	0.999	1.3600	0.6400	1	19	34.9	20.3	0.794
1.0400	0.9600	1	25	17.3	2.3	0.998	1.3700	0.6300	1	19	14.6	20.9	0.782
1.0500	0.9500	1	25	15.0	2.8	0.996	1.3800	0.6200	1	18	53.7	21.6	0.769
1.0600	0.9400	1	25	12.2	3.4	0.995	1.3900	0.6100	1	18	32.1	22.2	0.756
1.0700	0.9300	1	25	8.8	3.8	0.993	1.4000	0.6000	1	18	9.9	22.8	0.742
1.0800	0.9200	1	25	5.0	4.5	0.990	1.4100	0.5900	1	17	47.1	23.6	0.728
1.0900	0.9100	1	25	0.5	4.9	0.988	1.4200	0.5800	1	17	23.5	24.3	0.713
1.1000	0.9000	1	24	55.6	5.5	0.985	1.4300	0.5700	1	16	59.2	25.0	0.698
1.1100	0.8900	1	24	50.1	6.0	0.982	1.4400	0.5600	1	16	34.2	25.7	0.682
1.1200	0.8800	1	24	44.1	6.5	0.978	1.4500	0.5500	1	16	8.5	26.4	0.666
1.1300	0.8700	1	24	37.6	7.0	0.974	1.4600	0.5400	1	15	42.1	27.2	0.650
1.1400	0.8600	1	24	30.6	7.6	0.970	1.4700	0.5300	1	15	14.9	27.9	0.632
1.1500	0.8500	1	24	23.0	8.1	0.966	1.4800	0.5200	1	14	47.0	28.7	0.615
1.1600	0.8400	1	24	14.9	8.7	0.961	1.4900	0.5100	1	14	18.3	29.5	0.596
1.1700	0.8300	1	24	6.2	9.2	0.956	1.5000	0.5000	1	13	48.8	30.3	0.577
1.1800	0.8200	1	23	57.0	9.7	0.951	1.5100	0.4900	1	13	18.5	31.0	0.558
1.1900	0.8100	1	23	47.3	10.3	0.945	1.5200	0.4800	1	12	47.5	31.8	0.538
1.2000	0.8000	1	23	37.0	10.7	0.939	1.5300	0.4700	1	12	15.7	32.8	0.517
1.2100	0.7900	1	23	26.3	11.4	0.933	1.5400	0.4600	1	11	42.9	33.6	0.495
1.2200	0.7800	1	23	14.9	11.9	0.926	1.5500	0.4500	1	11	9.3	34.5	0.473
1.2300	0.7700	1	23	3.0	12.6	0.919	1.5600	0.4400	1	10	34.8	35.4	0.450
1.2400	0.7600	1	22	50.4	13.0	0.912	1.5700	0.4300	1	9	59.4	36.4	0.426
1.2500	0.7500	1	22	37.4	13.6	0.904	1.5800	0.4200	1	9	23.0	37.3	0.402
1.2600	0.7400	1	22	23.8	14.3	0.896	1.5900	0.4100	1	8	45.7	38.2	0.376
1.2700	0.7300	1	22	9.5	14.8	0.887	1.6000	0.4000	1	8	7.5	39.5	0.350
1.2800	0.7200	1	21	54.7	15.3	0.878	1.6100	0.3900	1	7	28.0	40.4	0.323
1.2900	0.7100	1	21	39.4	16.0	0.869	1.6200	0.3800	1	6	47.6	41.4	0.295
1.3000	0.7000	1	21	23.4	16.6	0.860	1.6300	0.3700	1	6	6.2	42.5	0.266
1.3100	0.6900	1	21	6.8	17.1	0.850	1.6400	0.3600	1	5	23.7	43.3	0.235
1.3200	0.6800	1	20	49.7	17.8	0.840	1.6500	0.3500	1	4	40.4		0.204
1.3300	0.6700	1	20	31.9		0.829							

TABLE XVI.—*continued.* Semidurations of Jupiter's *Third* Satellite

Argument M.		Semidurations.			Diff.	N	Argument M.		Semidurations.			Diff.	N
		H.	M.	S.	SEC.	+			H.	M.	S.	SEC.	±
1.00000	1.00000	1	47	0.0		1.000	1.48000	0.52000	1	33	52.1		0.615
1.01000	0.99000	1	46	59.7	0.3	1.000	1.49000	0.51000	1	33	16.5	35.6	0.596
1.02000	0.98000	1	46	58.7	1.0	0.999	1.50000	0.50000	1	32	39.9	36.6	0.577
1.03000	0.97000	1	46	57.1	1.6	0.999	1.51000	0.49000	1	32	2.3	37.6	0.558
1.04000	0.96000	1	46	54.9	2.2	0.998	1.52000	0.48000	1	31	23.7	38.6	0.538
1.05000	0.95000	1	46	52.0	2.9	0.996	1.53000	0.47000	1	30	44.1	39.6	0.517
1.06000	0.94000	1	46	48.4	3.6	0.995	1.54000	0.46000	1	30	3.5	40.6	0.495
1.07000	0.93000	1	46	44.3	4.1	0.993	1.55000	0.45000	1	29	21.8	41.7	0.473
1.08000	0.92000	1	46	39.4	4.9	0.990	1.56000	0.44000	1	28	38.9	42.9	0.450
1.09000	0.91000	1	46	33.9	5.5	0.988	1.57000	0.43000	1	27	54.9	44.0	0.426
1.10000	0.90000	1	46	27.8	6.1	0.985	1.58000	0.42000	1	27	9.8	45.1	0.402
1.11000	0.89000	1	46	21.0	6.8	0.982	1.59000	0.41000	1	26	23.5	46.3	0.376
1.12000	0.88000	1	46	13.6	7.4	0.978	1.60000	0.40000	1	25	36.0	47.5	0.350
1.13000	0.87000	1	46	5.5	8.1	0.974	1.61000	0.39000	1	24	47.3	48.7	0.323
1.14000	0.86000	1	45	56.8	8.7	0.970	1.62000	0.38000	1	23	57.1	50.2	0.295
1.15000	0.85000	1	45	47.4	9.4	0.966	1.63000	0.37000	1	23	5.7	51.4	0.266
1.16000	0.84000	1	45	37.3	10.1	0.961	1.64000	0.36000	1	22	13.0	52.7	0.235
1.17000	0.83000	1	45	26.6	10.7	0.956	1.65000	0.35000	1	21	18.8	54.2	0.204
1.18000	0.82000	1	45	15.1	11.5	0.951	1.66000	0.34000	1	20	23.1	55.7	0.172
1.19000	0.81000	1	45	3.1	12.0	0.945	1.67000	0.33000	1	19	26.0	57.1	0.138
1.20000	0.80000	1	44	50.3	12.8	0.939	1.68000	0.32000	1	18	27.2	58.8	0.102
1.21000	0.79000	1	44	36.8	13.5	0.933	1.69000	0.31000	1	17	26.8	60.4	0.066
1.22000	0.78000	1	44	22.7	14.1	0.926	1.70000	0.30000	1	16	24.8	62.0	+0.028
1.23000	0.77000	1	44	7.9	14.8	0.919	1.71000	0.29000	1	15	21.0	63.8	−0.012
1.24000	0.76000	1	43	52.4	15.5	0.912	1.72000	0.28000	1	14	15.3	65.7	0.053
1.25000	0.75000	1	43	36.1	16.3	0.904	1.73000	0.27000	1	13	7.7	67.6	0.096
1.26000	0.74000	1	43	19.2	16.9	0.896	1.74000	0.26000	1	11	58.1	69.6	0.141
1.27000	0.73000	1	43	1.6	17.6	0.887	1.75000	0.25000	1	10	46.4	71.7	0.189
1.28000	0.72000	1	42	43.2	18.4	0.878	1.76000	0.24000	1	9	32.5	73.9	0.239
1.29000	0.71000	1	42	24.1	19.1	0.869	1.77000	0.23000	1	8	16.2	76.3	0.291
1.30000	0.70000	1	42	4.3	19.8	0.860	1.78000	0.22000	1	6	57.5	78.7	0.346
1.31000	0.69000	1	41	43.7	20.6	0.850	1.79000	0.21000	1	5	36.2	81.3	0.405
1.32000	0.68000	1	41	22.4	21.3	0.839	1.80000	0.20000	1	4	12.0	84.2	0.467
1.33000	0.67000	1	41	0.3	22.1	0.829	1.81000	0.19000	1	2	44.9	87.1	0.532
1.34000	0.66000	1	40	37.5	22.8	0.818	1.82000	0.18000	1	1	14.6	90.3	0.602
1.35000	0.65000	1	40	13.9	23.6	0.806	1.83000	0.17000	0	59	40.8	93.8	0.677
1.36000	0.64000	1	39	49.6	24.3	0.794	1.84000	0.16000	0	58	3.4	97.4	0.758
1.37000	0.63000	1	39	24.4	25.2	0.782	1.85000	0.15000	0	56	22.0	101.4	0.845
1.38000	0.62000	1	38	58.4	26.0	0.769	1.86000	0.14000	0	54	36.1	105.9	0.939
1.39000	0.61000	1	38	31.6	26.8	0.756	1.87000	0.13000	0	52	45.4	110.7	0.042
1.40000	0.60000	1	38	4.0	27.6	0.742	1.88000	0.12000	0	50	49.3	116.1	1.155
1.41000	0.59000	1	37	35.6	28.4	0.728	1.89000	0.11000	0	48	47.3	122.0	1.281
1.42000	0.58000	1	37	6.3	29.3	0.713	1.90000	0.10000	0	46	38.4	128.9	1.422
1.43000	0.57000	1	36	36.2	30.1	0.698	1.91000	0.09000	0	44	21.8	136.6	1.583
1.44000	0.56000	1	36	5.2	31.0	0.682	1.92000	0.08000	0	41	56.1	145.7	1.767
1.45000	0.55000	1	35	33.3	31.9	0.666	1.93000	0.07000	0	39	19.7	156.4	1.985
1.46000	0.54000	1	35	0.4	32.9	0.650	1.94000	0.06000	0	36	30.3	169.4	2.245
1.47000	0.53000	1	34	26.7	33.7	0.633	1.95000	0.05000	0	33	24.6	185.7	2.578
1.48000	0.52000	1	33	52.1	34.6	0.615	1.96000	0.04000	0	29	57.6	207.0	3.011

M is the Argument uſed in finding the Semiduration, and N ſerves for the Correction of it.

TABLE XVI.—*continued.* Semidurations of Jupiter's *Fourth* Satellite.

Argument M.		Semidurations.			Diff.	N	Argument M.		Semidurations.			Diff.	N
		H.	M.	S.	SEC.	+			H.	M.	S.	SEC.	±
2.0000	2.0000	2	23	10		+ 1.000	2.3700	1.6300	2	13	0		+0.782
2.0100	1.9900	2	23	10	0	1.000	2.3800	1.6200	2	12	26	34	0.767
2.0200	1.9800	2	23	8	2	0.999	2.3900	1.6100	2	11	50	36	0.756
2.0300	1.9700	2	23	6	2	0.999	2.4000	1.6000	2	11	13	37	0.742
2.0400	1.9600	2	23	3	3	0.998	2.4100	1.5900	2	10	35	38	0.728
2.0500	1.9500	2	22	59	4	0.996	2.4200	1.5800	2	9	56	39	0.713
2.0600	1.9400	2	22	55	4	0.995	2.4300	1.5700	2	9	15	41	0.698
2.0700	1.9300	2	22	49	6	0.993	2.4400	1.5600	2	8	34	41	0.682
2.0800	1.9200	2	22	42	7	0.990	2.4500	1.5500	2	7	51	43	0.666
2.0900	1.9100	2	22	35	7	0.988	2.4600	1.5400	2	7	7	44	0.650
2.1000	1.9000	2	22	27	8	0.985	2.4700	1.5300	2	6	22	45	0.633
2.1100	1.8900	2	22	18	9	0.982	2.4800	1.5200	2	5	36	46	0.615
2.1200	1.8800	2	22	8	10	0.978	2.4900	1.5100	2	4	48	48	0.596
2.1300	1.8700	2	21	57	11	0.974	2.5000	1.5000	2	3	59	49	0.577
2.1400	1.8600	2	21	45	12	0.970	2.5100	1.4900	2	3	9	50	0.558
2.1500	1.8500	2	21	33	12	0.966	2.5200	1.4800	2	2	17	52	0.538
2.1600	1.8400	2	21	19	14	0.961	2.5300	1.4700	2	1	24	53	0.517
2.1700	1.8300	2	21	5	14	0.956	2.5400	1.4600	2	0	30	54	0.495
2.1800	1.8200	2	20	50	15	0.951	2.5500	1.4500	1	59	34	56	0.473
2.1900	1.8100	2	20	34	16	0.945	2.5600	1.4400	1	58	37	57	0.450
2.2000	1.8000	2	20	16	18	0.939	2.5700	1.4300	1	57	38	59	0.426
2.2100	1.7900	2	19	58	18	0.933	2.5800	1.4200	1	56	38	60	0.402
2.2200	1.7800	2	19	40	18	0.926	2.5900	1.4100	1	55	36	62	0.376
2.2300	1.7700	2	19	20	20	0.919	2.6000	1.4000	1	54	32	64	0.350
2.2400	1.7600	2	18	59	21	0.912	2.6100	1.3900	1	53	27	65	0.323
2.2500	1.7500	2	18	37	22	0.904	2.6200	1.3800	1	52	20	67	0.295
2.2600	1.7400	2	18	15	22	0.896	2.6300	1.3700	1	51	11	69	0.265
2.2700	1.7300	2	17	51	24	0.887	2.6400	1.3600	1	50	0	71	0.235
2.2800	1.7200	2	17	26	25	0.878	2.6500	1.3500	1	48	48	72	0.204
2.2900	1.7100	2	17	1	25	0.869	2.6600	1.3400	1	47	33	75	0.172
2.3000	1.7000	2	16	34	27	0.860	2.6700	1.3300	1	46	17	76	0.138
2.3100	1.6900	2	16	7	27	0.850	2.6800	1.3200	1	44	58	79	0.103
2.3200	1.6800	2	15	38	29	0.839	2.6900	1.3100	1	43	37	81	0.066
2.3300	1.6700	2	15	9	29	0.829	2.7000	1.3000	1	42	14	83	0.028
2.3400	1.6600	2	14	38	31	0.818	2.7100	1.2900	1	40	49	85	− 0.012
2.3500	1.6500	2	14	7	31	0.806	2.7200	1.2800	1	39	21	88	0.053
2.3600	1.6400	2	13	34	33	0.794	2.7300	1.2700	1	37	51	90	0.096
2.3700	1.6300	2	13	0	34	0.782	2.7400	1.2600	1	36	18	93	0.141

TABLE XVI.—*continued.* Semidurations of Jupiter's *Fourth* Satellite.

Argument M.		Semidurations.			Diff.	N	Argument M.		Semi-durations.		Diff.	N
		H.	M.	S.	SEC.	—			M.	S.	SEC.	—
2.7400	1.2600	1	36	18	96	−0.141	2.96500	1.03500	37	33	32	− 3.29
2.7500	1.2500	1	34	42	99	0.189	2.96600	1.03400	37	1	32	3.35
2.7600	1.2400	1	33	3	102	0.239	2.96700	1.03300	36	29	33	3.41
2.7700	1.2300	1	31	21	106	0.291	2.96800	1.03200	35	56	34	3.48
2.7800	1.2200	1	29	35	108	0.346	2.96900	1.03100	35	22	34	3.55
2.7900	1.2100	1	27	47	113	0.405	2.97000	1.03000	34	48	34	3.63
2.8000	1.2000	1	25	54	117	0.467	2.97100	1.02900	34	14	35	3.70
2.8100	1.1900	1	23	57	121	0.532	2.97200	1.02800	33	39	36	3.79
2.8200	1.1800	1	21	56	125	0.602	2.97300	1.02700	33	3	37	3.87
2.8300	1.1700	1	19	51	130	0.677	2.97400	1.02600	32	26	37	3.96
2.8400	1.1600	1	17	41	136	0.758	2.97500	1.02500	31	49	38	4.06
2.8500	1.1500	1	15	25	141	0.845	2.97600	1.02400	31	11	39	4.16
2.8600	1.1400	1	13	4	149	0.939	2.97700	1.02300	30	32	40	4.26
2.8700	1.1300	1	10	35	155	1.042	2.97800	1.02200	29	52	41	4.38
2.8800	1.1200	1	8	0	163	1.155	2.97900	1.02100	29	11	42	4.50
2.8900	1.1100	1	5	17	173	1.281	2.98000	1.02000	28	29	42	4.63
2.9000	1.1000	1	2	24	183	1.422	2.98100	1.01900	27	47	44	4.77
2.9100	1.0900	0	59	21	194	1.583	2.98200	1.01800	27	3	46	4.92
2.9200	1.0800	0	56	7	210	1.768	2.98300	1.01700	26	17	46	5.08
2.9300	1.0700	0	52	37	226	1.985	2.98400	1.01600	25	31	49	5.26
2.9400	1.0600	0	48	51	249	2.249	2.98500	1.01500	24	42	50	5.45
2.95000	1.05000	0	44	42	26	2.58	2.98600	1.01400	23	52	52	5.66
2.95100	1.04900	0	44	16	27	2.62	2.98700	1.01300	23	0	53	5.90
2.95200	1.04800	0	43	49	26	2.65	2.98800	1.01200	22	7	57	6.17
2.95300	1.04700	0	43	23	27	2.69	2.98900	1.01100	21	10	58	6.46
2.95400	1.04600	0	42	56	28	2.74	2.99000	1.01000	20	12	62	6.81
2.95500	1.04500	0	42	28	28	2.78	2.99100	1.00900	19	10	66	7.20
2.95600	1.04400	0	42	0	28	2.82	2.99200	1.00800	18	4	69	7.67
2.95700	1.04300	0	41	32	29	2.87	2.99300	1.00700	16	55	75	8.23
2.95800	1.04200	0	41	3	28	2.91	2.99400	1.00600	15	40	82	8.92
2.95900	1.04100	0	40	35	30	2.95	2.99500	1.00500	14	18	90	9.81
2.96000	1.04000	0	40	5	29	3.01	2.99600	1.00400	12	48	103	11.01
2.96100	1.03900	0	39	36	31	3.06	2.99700	1.00300	11	5	122	12.76
2.96200	1.03800	0	39	5	30	3.12	2.99800	1.00200	9	3	169	15.69
2.96300	1.03700	0	38	35	30	3.17	2.99900	1.00100	6	14	374	22.26
2.96400	1.03600	0	38	4	31	3.23	3.00000	1.00000	0	0		∞
2.96500	1.03500	0	37	33		3.29						

TABLE XVII. The Correction of the Semidurations of Jupiter's *First* Satellite.

Arguments C and N.								
Argument C.				Argument N.				
				100	95	90	85	80
				SEC.	SEC.	SEC.	SEC.	SEC.
0	5000	5000	0	0.0	0.9	1.9	2.6	3.7
100	4900	5100	9900	0.2	1.2	2.0	2.9	3.8
200	4800	5200	9800	0.6	1.5	2.4	3.1	4.2
300	4700	5300	9700	1.4	2.2	3.0	3.8	4.8
400	4600	5400	9600	2.3	3.1	3.9	4.6	5.5
500	4500	5500	9500	3.6	4.3	5.0	5.6	6.5
600	4400	5600	9400	5.0	5.6	6.4	6.9	7.7
700	4300	5700	9300	6.7	7.3	7.7	8.2	9.0
800	4200	5800	9200	8.6	9.1	9.5	9.9	10.6
900	4100	5900	9100	10.6	11.0	11.4	11.7	12.1
1000	4000	6000	9000	12.8	13.1	13.3	13.6	13.9
1100	3900	6100	8900	15.0	15.2	15.3	15.5	15.7
1200	3800	6200	8800	17.3	17.4	17.4	17.5	17.5
1300	3700	6300	8700	19.6	19.5	19.5	19.4	19.4
1400	3600	6400	8600	21.8	21.6	21.5	21.3	21.1
1500	3500	6500	8500	24.0	23.7	23.5	23.2	22.9
1600	3400	6600	8400	26.2	25.8	25.4	25.1	24.7
1700	3300	6700	8300	28.2	27.7	27.2	26.8	26.2
1800	3200	6800	8200	30.1	29.5	28.8	28.6	27.8
1900	3100	6900	8100	31.8	31.2	30.3	29.7	29.2
2000	3000	7000	8000	33.2	32.5	31.8	31.2	30.2
2100	2900	7100	7900	34.5	33.7	32.9	32.2	31.3
2200	2800	7200	7800	35.4	34.6	33.8	33.1	32.0
2300	2700	7300	7700	36.2	35.3	34.4	33.7	32.6
2400	2600	7400	7600	36.6	35.6	34.8	33.9	32.9
2500	2500	7500	7500	36.8	35.9	34.9	34.2	33.1

TABLE XVII.—*continued.* The Correction of the Semidurations of Jupiter's *Second* Satellite.

Argument C.				Number N.									
				1.000	0.900	0.800	0.700	0.600	0.500	0.400	0.300	0.200	0.100
				SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SFC.	SEC.	SEC.
000	5000	5000	000	0.0	4.8	9.7	14.5	19.4	24.3	29.1	34.0	37.8	43.7
100	4900	5100	9900	0.4	5.2	10.0	14.8	19.6	24.4	29.3	34.1	38.9	43.7
200	4800	5200	9800	1.5	6.2	10.9	15.7	20.4	25.0	29.7	34.4	39.1	43.8
300	4700	5300	9700	3.5	8.0	12.5	17.0	21.5	25.9	30.4	34.9	39.5	44.0
400	4600	5400	9600	6.0	10.3	14.5	18.9	23.0	27.3	31.5	35.7	40.0	44.3
500	4500	5500	9500	9.2	13.2	17.1	21.0	25.0	28.8	32.7	36.7	40.6	44.6
600	4400	5600	9400	13.2	16.7	20.3	23.6	27.3	30.8	34.1	38.0	41.4	44.9
700	4300	5700	9300	17.6	20.6	23.7	26.9	30.0	33.1	36.1	39.2	42.3	45.4
800	4200	5800	9200	22.5	25.1	27.7	30.2	32.8	35.4	38.1	40.7	43.3	45.9
900	4100	5900	9100	27.8	29.9	32.0	34.1	36.1	38.1	40.2	42.2	44.4	46.5
1000	4000	6000	9000	33.5	35.1	37.0	38.0	40.2	41.0	42.5	44.0	45.5	46.9
1100	3900	6100	8900	39.4	40.4	41.2	42.0	43.0	43.9	44.8	45.7	46.7	47.5
1200	3800	6200	8800	45.4	45.7	46.1	46.3	46.7	46.9	47.2	47.3	47.9	48.2
1300	3700	6300	8700	51.6	51.3	50.2	50.6	50.3	50.0	49.7	49.4	49.1	48.8
1400	3600	6400	8600	57.6	56.6	54.9	54.9	54.1	53.1	52.1	51.3	50.3	49.4
1500	3500	6500	8500	63.5	64.0	59.5	59.0	57.5	56.0	54.5	53.0	51.5	50.0
1600	3400	6600	8400	69.1	67.1	66.0	62.9	60.9	58.5	56.7	54.6	52.6	50.6
1700	3300	6700	8300	74.5	71.9	69.3	66.7	64.1	61.5	58.8	56.3	53.7	51.1
1800	3200	6800	8200	79.4	76.3	73.2	70.1	67.0	63.9	60.9	57.8	54.6	51.6
1900	3100	6900	8100	83.8	80.3	76.7	73.2	69.7	66.1	62.6	59.0	55.6	52.0
2000	3000	7000	8000	87.8	83.8	79.9	75.9	72.0	68.2	64.2	60.3	56.4	52.5
2100	2900	7100	7900	91.0	86.8	82.5	78.1	73.9	69.7	65.5	61.2	56.9	52.7
2200	2800	7200	7800	93.6	89.1	84.5	80.0	75.5	70.9	66.5	62.0	57.5	53.0
2300	2700	7300	7700	95.5	90.8	86.1	81.3	76.6	71.9	67.3	62.6	57.9	53.2
2400	2600	7400	7600	96.6	91.9	87.1	82.2	77.4	72.6	67.7	62.9	58.1	53.3
2500	2500	7500	7500	97.0	92.2	87.4	82.4	77.6	72.8	67.9	63.0	58.2	53.4

TABLE XVII.—*continued.* The Correction of the Semidurations of Jupiter's *Third* Satellite.

Arguments C, D, E.		C	D	E	Arguments C, D, E.		C	D	E
+	—	SEC.	SEC.	SEC.	+	—	SEC.	SEC.	SEC.
0	500	4.5	8.7	4.8	250	750	0.0	0.0	0.0
10	510	4.5	8.6	4.8	260	760	0.3	0.6	0.3
20	520	4.5	8.6	4.7	270	770	0.6	1.1	0.6
30	530	4.5	8.5	4.7	280	780	0.9	1.6	0.9
40	540	4.4	8.4	4.6	290	790	1.1	2.1	1.2
50	550	4.3	8.2	4.5	300	800	1.4	2.7	1.5
60	560	4.2	8.0	4.4	310	810	1.7	3.2	1.8
70	570	4.1	7.8	4.3	320	820	1.9	3.7	2.0
80	580	4.0	7.6	4.2	330	830	2.2	4.1	2.3
90	590	3.8	7.3	4.0	340	840	2.4	4.6	2.5
100	600	3.7	7.0	3.9	350	850	2.7	5.1	2.8
110	610	3.5	6.3	3.7	360	860	2.9	5.5	3.0
120	620	3.3	6.3	3.5	370	870	3.1	5.9	3.3
130	630	3.1	5.9	3.3	380	880	3.3	6.3	3.5
140	640	2.9	5.5	3.0	390	890	3.5	6.6	3.7
150	650	2.7	4.1	2.8	400	900	3.7	7.0	3.9
160	660	2.4	4.6	2.5	410	910	3.8	7.3	4.0
170	670	2.2	4.1	2.3	420	920	4.0	7.6	4.2
180	680	1.9	3.7	2.0	430	930	4.1	7.8	4.3
190	690	1.7	3.2	1.8	440	940	4.2	8.0	4.4
200	700	1.4	2.7	1.5	450	950	4.3	8.2	4.5
210	710	1.1	2.1	1.2	460	960	4.4	8.4	4.6
220	720	0.9	1.6	0.9	470	970	4.5	8.5	4.7
230	730	0.6	1.1	0.6	480	980	4.5	8.6	4.7
240	740	0.3	0.6	0.3	490	990	4.5	8.6	4.8
250	750	0.0	0.0	0.0	500	0	4.5	8.7	4.8

Table XVII.—*continued.* The Correction of the Semidurations of Jupiter's *Fourth* Satellite.

Argument C.		Cor.	Number X. ∓	Diff.	Argument C.		Cor.	Number X. ∓	Diff.
+	−	sec.			+	−	sec.		
0	5000	63.2	0.01482		7500	7500	0.0	0.00000	
100	4900	63.1	0.01479	3	7600	7400	4.0	0.00093	93
200	4800	62.7	0.01470	9	7700	7300	7.9	0.00186	93
300	4700	62.1	0.01455	15	7800	7200	11.8	0.00278	92
400	4600	61.3	0.01435	20	7900	7100	15.7	0.00368	90
500	4500	60.2	0.01409	26	8000	7000	19.5	0.00457	89
600	4400	58.8	0.01377	32	8100	6900	23.3	0.00545	88
700	4300	57.2	0.01340	37	8200	6800	26.9	0.00631	86
800	4200	55.4	0.01298	42	8300	6700	30.5	0.00715	84
900	4100	53.4	0.01251	47	8400	6600	33.9	0.00795	80
1000	4000	41.2	0.01199	52	8500	6500	37.2	0.00871	76
1100	3900	48.7	0.01142	57	8600	6400	40.3	0.00944	73
1200	3800	46.1	0.01080	62	8700	6300	43.3	0.01014	70
1300	3700	43.3	0.01014	66	8800	6200	46.1	0.01080	66
1400	3600	40.3	0.00944	70	8900	6100	48.7	0.01142	62
1500	3500	37.2	0.00871	73	9000	6000	51.2	0.01199	57
1600	3400	33.9	0.00795	76	9100	5900	53.4	0.01251	52
1700	3300	30.5	0.00715	80	9200	5800	55.4	0.01298	47
1800	3200	26.9	0.00631	84	9300	5700	57.2	0.01340	42
1900	3100	23.3	0.00545	86	9400	5600	58.8	0.01377	37
2000	3000	19.5	0.00457	88	9500	5500	60.2	0.01409	32
2100	2900	15.7	0.00368	89	9600	5400	61.3	0.01435	26
2200	2800	11.8	0.00278	90	9700	5300	62.1	0.01455	20
2300	2700	7.9	0.00186	92	9800	5200	62.7	0.01470	15
2400	2600	4.0	0.00093	93	9900	5100	63.1	0.01479	9
2500	2500	0.0	0.00000	93	0	5000	63.2	0.01482	3

The Number X has the Sign − in the firſt Column of the Argument, and + in the ſecond; it has therefore a different Sign from its Argument.

The Number X is only uſed with the Table of the Semiduration, and then the Correction in this Table is not uſed.

TABLE XVIII. Second Part of the Reduction, which depends on the Sum of the Arguments H and L; with the Numbers H, I, K, and L, the Sum of which is the Argument of the Half-Duration of Jupiter's *Second* Satellite.

Arg. H + L		Red. H + L sec.	Number H	Diff.	Number I	Number K	Number L	Diff.
7500	7500	0.0	0.3627	11	0.0026	0.0116	0.1658	2
7600	7400	0.0	0.3638	33	0.0026	0.0116	0.1656	5
7700	7300	0.1	0.3671	53	0.0026	0.0116	0.1651	8
7800	7200	0.2	0.3724	75	0.0026	0.0115	0.1643	11
7900	7100	0.4	0.3799	96	0.0025	0.0114	0.1632	15
8000	7000	0.7	0.3895	117	0.0025	0.0113	0.1617	18
8100	6900	1.0	0.4012	136	0.0025	0.0112	0.1599	20
8200	6800	1.4	0.4148	156	0.0025	0.0111	0.1579	24
8300	6700	1.8	0.4304	175	0.0024	0.0109	0.1555	26
8400	6600	2.2	0.4479	193	0.0024	0.0107	0.1529	30
8500	6500	2.7	0.4672	211	0.0023	0.0105	0.1499	31
8600	6400	3.3	0.4883	227	0.0023	0.0103	0.1468	35
8700	6300	3.8	0.5110	244	0.0022	0.0100	0.1433	37
8800	6200	4.5	0.5354	258	0.0022	0.0098	0.1396	39
8900	6100	5.2	0.5612	271	0.0021	0.0095	0.1357	41
9000	6000	5.9	0.5883	285	0.0021	0.0092	0.1316	43
9100	5900	6.6	0.6168	295	0.0020	0.0089	0.1273	45
9200	5800	7.4	0.6463	307	0.0019	0.0086	0.1228	46
9300	5700	8.2	0.6770	315	0.0018	0.0083	0.1182	48
9400	5600	9.0	0.7085	324	0.0018	0.0079	0.1134	49
9500	5500	9.8	0.7409	330	0.0017	0.0076	0.1085	50
9600	5400	10.7	0.7739	336	0.0016	0.0072	0.1035	50
9700	5300	11.6	0.8075	339	0.0015	0.0069	0.0985	52
9800	5200	12.4	0.8414	342	0.0015	0.0065	0.0933	52
9900	5100	13.3	0.8756	344	0.0014	0.0062	0.0881	52
0	5000	14.2	0.9100	344	0.0013	0.0058	0.0829	52
100	4900	15.1	0.9444	342	0.0012	0.0054	0.0777	52
200	4800	16.0	0.9786	339	0.0011	0.0051	0.0725	52
300	4700	16.8	1.0125	336	0.0011	0.0047	0.0673	50
400	4600	17.7	1.0461	330	0.0010	0.0044	0.0623	50
500	4500	18.6	1.0791	324	0.0009	0.0040	0.0573	49
600	4400	19.4	1.1115	315	0.0008	0.0037	0.0524	48
700	4300	20.2	1.1430	307	0.0008	0.0033	0.0476	46
800	4200	21.0	1.1737	295	0.0007	0.0030	0.0430	45
900	4100	21.8	1.2032	285	0.0006	0.0027	0.0385	43
1000	4000	22.5	1.2317	271	0.0005	0.0024	0.0342	41
1100	3900	23.2	1.2588	258	0.0005	0.0021	0.0301	39
1200	3800	23.9	1.2846	244	0.0004	0.0018	0.0262	37
1300	3700	24.6	1.3090	227	0.0004	0.0016	0.0225	35
1400	3600	25.1	1.3317	211	0.0003	0.0013	0.0190	31
1500	3500	25.7	1.3528	193	0.0003	0.0011	0.0159	30
1600	3400	26.2	1.3721	175	0.0002	0.0009	0.0129	26
1700	3300	26.6	1.3896	156	0.0002	0.0006	0.0103	24
1800	3200	27.0	1.4052	136	0.0001	0.0004	0.0079	20
1900	3100	27.4	1.4188	117	0.0001	0.0003	0.0059	18
2000	3000	27.7	1.4305	96	0.0001	0.0002	0.0041	15
2100	2900	28.0	1.4401	75	0.0001	0.0001	0.0026	11
2200	2800	28.2	1.4476	53	0.0000	0.0000	0.0015	8
2300	2700	28.3	1.4529	33	0.0000	0.0000	0.0007	5
2400	2600	28.4	1.4562	11	0.0000	0.0000	0.0002	2
2500	2500	28.4	1.4573		0.0000	0.0000	0.0000	

Table XIX. Reduction H + K of Jupiter's *Third* Satellite.

Arg. H + K		Red. H + K	Diff.	Arg. H + K		Red. H + K	Diff.	Arg. H + K		Red. H + K	Diff.
		sec.	sec.			sec.	sec.			sec.	sec.
7500	7500	0.0	0.1	9200	5800	6.2	0.7	900	4100	18.4	0.6
7600	7400	0.1	0.0	9300	5700	6.9	0.7	1000	4000	19.0	0.6
7700	7300	0.1	0.1	9400	5600	7.6	0.7	1100	3900	19.6	0.6
7800	7200	0.2	0.2	9500	5500	8.3	0.7	1200	3800	20.2	0.5
7900	7100	0.4	0.2	9600	5400	9.0	0.7	1300	3700	20.7	0.5
8000	7000	0.6	0.3	9700	5300	9.7	0.8	1400	3600	21.2	0.5
8100	6900	0.9	0.3	9800	5200	10.5	0.7	1500	3500	21.7	0.4
8200	6800	1.2	0.3	9900	5100	11.2	0.8	1600	3400	22.1	0.4
8300	6700	1.5	0.4	0	5000	12.0	0.8	1700	3300	22.5	0.3
8400	6600	1.9	0.4	100	4900	12.8	0.7	1800	3200	22.8	0.3
8500	6500	2.3	0.5	200	4800	13.5	0.8	1900	3100	23.1	0.3
8600	6400	2.8	0.5	300	4700	14.3	0.7	2000	3000	23.4	0.2
8700	6300	3.3	0.5	400	4600	15.0	0.7	2100	2900	23.6	0.2
8800	6200	3.8	0.6	500	4500	15.7	0.7	2200	2800	23.8	0.1
8900	6100	4.4	0.6	600	4400	16.4	0.7	2300	2700	23.9	0.0
9000	6000	5.0	0.6	700	4300	17.1	0.7	2400	2600	23.9	0.1
9100	5900	5.6	0.6	800	4200	17.8	0.6	2500	2500	24.0	
9200	5800	6.2		900	4100	18.4					

Table XX. The Numbers H, I, K, and L, of Jupiter's *Third* Satellite; of which the Sum M is the Argument of the Semiduration.

Arguments H, I, K, L.		Number H	Diff.	Number I	Diff.	Number K	Diff.	Number L	Diff.
7500	7500	0.05818	171	0.02222	2	0.11650	12	0.00000	1
7600	7400	0.05989	512	0.02220	7	0.11638	34	0.00001	3
7700	7300	0.06501	853	0.02213	11	0.11604	58	0.00004	5
7800	7200	0.07354	1188	0.02202	15	0.11546	79	0.00009	7
7900	7100	0.08542	1520	0.02187	19	0.11467	102	0.00016	9
8000	7000	0.10062	1846	0.02168	23	0.11365	225	0.00025	11
8100	6900	0.11908	2204	0.02145	29	0.11240	145	0.00036	13
8200	6800	0.14112	2433	0.02116	32	0.11095	166	0.00049	15
8300	6700	0.16545	2774	0.02084	35	0.10929	186	0.00064	17
8400	6600	0.19319	3062	0.02049	39	0.10743	206	0.00081	18
8500	6500	0.22381	3339	0.02010	43	0.10537	224	0.00099	20
8600	6400	0.25720	3603	0.01967	46	0.10313	242	0.00119	22
8700	6300	0.29323	3853	0.01921	49	0.10071	259	0.00141	23
8800	6200	0.33176		0.01872		0.09812		0.00164	

TABLE XX.—*continued.* The Numbers H, I, K, and L, of Jupiter's *Third* Satellite; of which the Sum M is the Argument of the Semiduration.

Arguments H, I, K, L.		Number H	Diff.	Number I	Diff.	Number K	Diff.	Number L	Diff.
8800	6200	0.33176	4087	0.01872	53	0.09812	274	0.00164	24
8900	6100	0.37263	4305	0.01819	55	0.09538	289	0.00188	26
9000	6000	0.41568	4506	0.01764	58	0.09249	303	0.00214	27
9100	5900	0.46074	4690	0.01706	60	0.08946	315	0.00241	28
9200	5800	0.50764	4854	0.01646	62	0.08631	326	0.00269	29
9300	5700	0.55618	5001	0.01584	64	0.08305	336	0.00298	30
9400	5600	0.60619	5126	0.01520	66	0.07969	344	0.00328	31
9500	5500	0.65745	5232	0.01454	67	0.07625	352	0.00359	31
9600	5400	0.70977	5317	0.01387	68	0.07273	356	0.00390	32
9700	5300	0.76294	5381	0.01319	69	0.06917	362	0.00422	32
9800	5200	0.81675	5424	0.01250	69	0.06555	364	0.00454	32
9900	5100	0.87099	5446	0.01181	70	0.06191	366	0.00486	33
0	5000	0.92545	5446	0.01111	70	0.05825	366	0.00519	33
100	4900	0.97991	5424	0.01041	69	0.05459	364	0.00552	32
200	4800	1.03415	5381	0.00972	69	0.05095	362	0.00584	32
300	4700	1.08796	5317	0.00903	68	0.04733	356	0.00616	32
400	4600	1.14113	5232	0.00835	67	0.04377	352	0.00648	31
500	4500	1.19345	5126	0.00768	66	0.04025	344	0.00679	31
600	4400	1.24471	5001	0.00702	64	0.03681	336	0.00710	30
700	4300	1.29472	4854	0.00638	62	0.03345	326	0.00740	29
800	4200	1.34326	4690	0.00576	60	0.03019	315	0.00769	28
900	4100	1.39016	4506	0.00516	58	0.02704	303	0.00797	27
1000	4000	1.43522	4305	0.00458	55	0.02401	289	0.00824	26
1100	3900	1.47827	4087	0.00403	53	0.02112	274	0.00850	24
1200	3800	1.51914	3853	0.00350	49	0.01838	259	0.00874	23
1300	3700	1.55767	3603	0.00301	46	0.01579	242	0.00897	22
1400	3600	1.59370	3339	0.00255	43	0.01337	224	0.00919	20
1500	3500	1.62709	3062	0.00212	39	0.01113	206	0.00939	18
1600	3400	1.65771	2774	0.00173	35	0.00907	186	0.00957	17
1700	3300	1.68545	2433	0.00138	32	0.00721	166	0.00974	15
1800	3200	1.70978	2204	0.00106	29	0.00555	145	0.00989	13
1900	3100	1.73182	1846	0.00077	23	0.00410	125	0.01002	11
2000	3000	1.75028	1520	0.00054	19	0.00285	102	0.01013	9
2100	2900	1.76548	1188	0.00035	15	0.00183	79	0.01022	7
2200	2800	1.77736	853	0.00020	11	0.00104	58	0.01029	5
2300	2700	1.78589	512	0.00009	7	0.00046	34	0.01034	3
2400	2600	1.79101	171	0.00002	2	0.00012	12	0.01037	1
2500	2500	1.79272		0.00000		0.00000		0.01038	

The Number H is taken with the Argument H; and the ſame for the other Numbers, which are taken with their reſpective Arguments.

TABLE XXI. Reductions H + I and H + K of Jupiter's *Fourth* Satellite.

Arg. (H + I)	Arg. (H + K)	Red. H + I	Red. H + K	Arg. (H + I)	Arg. (H + K)	Red. H + I	Red. H + K
		SEC.	SEC.			SEC.	SEC.
0	5000	31.0	4.6	7500	7500	0.0	9.2
100	4900	33.0	4.3	7600	7400	0.1	9.1
200	4800	34.9	4.0	7700	7300	0.2	9.1
300	4700	36.8	3.7	7800	7200	0.6	9.1
400	4600	38.7	3.5	7900	7100	1.0	9.0
500	4500	40.6	3.2	8000	7000	1.5	8.9
600	4400	42.4	2.9	8100	6900	2.2	8.8
700	4300	44.2	2.7	8200	6800	3.0	8.7
800	4200	45.9	2.4	8300	6700	3.8	8.6
900	4100	47.7	2.2	8400	6600	4.8	8.5
1000	4000	49.2	1.9	8500	6500	5.9	8.3
1100	3900	50.8	1.7	8600	6400	7.1	8.1
1200	3800	52.2	1.5	8700	6300	8.4	7.9
1300	3700	53.6	1.3	8800	6200	9.8	7.7
1400	3600	54.9	1.1	8900	6100	11.2	7.5
1500	3500	56.1	0.9	9000	6000	12.8	7.3
1600	3400	57.2	0.7	9100	5900	14.4	7.0
1700	3300	58.2	0.6	9200	5800	16.1	6.8
1800	3200	59.0	0.5	9300	5700	17.8	6.5
1900	3100	59.8	0.4	9400	5600	19.6	6.3
2000	3000	60.5	0.3	9500	5500	21.4	6.0
2100	2900	61.0	0.2	9600	5400	23.3	5.7
2200	2800	61.4	0.1	9700	5300	25.2	5.5
2300	2700	61.8	0.1	9800	5200	27.1	5.2
2400	2600	61.9	0.1	9900	5100	29.0	4.9
2500	2500	62.0	0.0	0	5000	31.0	4.6

TABLE XXII. The Numbers H, I, and K, of Jupiter's *Fourth* Satellite; of which the Sum M is the Argument of the Semiduration.

Arguments H, I, K.		Number H	Diff.	Number I	Diff.	Number K	Diff.
0	5000	1.85582	8502	0.12571	789	0.01847	116
100	4900	1.94084	8468	0.11782	786	0.01963	116
200	4800	2.02552	8401	0.10996	781	0.02079	114
300	4700	2.10953	8301	0.10215	769	0.02193	113
400	4600	2.19254	8168	0.09446	760	0.02306	112
500	4500	2.27422	8003	0.08686	743	0.02418	109
600	4400	2.35425	7806	0.07943	724	0.02527	106
700	4300	2.43231	7579	0.07219	704	0.02633	104
800	4200	2.50810	7321	0.06515	680	0.02737	100
900	4100	2.58131	7035	0.05835	653	0.02837	95
1000	4000	2.65166	6721	0.05182	624	0.02932	92
1100	3900	2.71887	6381	0.04558	592	0.03024	87
1200	3800	2.78268	6014	0.03966	559	0.03111	82
1300	3700	2.84282	5625	0.03407	522	0.03193	78
1400	3600	2.89907	5214	0.02885	484	0.03271	70
1500	3500	2.95121	4781	0.02401	444	0.03341	66
1600	3400	2.99902	4329	0.01957	402	0.03407	59
1700	3300	3.04231	3862	0.01555	358	0.03466	52
1800	3200	3.08093	3378	0.01197	314	0.03518	46
1900	3100	3.11471	2881	0.00883	268	0.03564	40
2000	3000	3.14352	2373	0.00615	220	0.03604	32
2100	2900	3.16725	1856	0.00395	172	0.03636	25
2200	2800	3.18581	1331	0.00223	124	0.03661	19
2300	2700	3.19912	800	0.00099	74	0.03680	10
2400	2600	3.20712	267	0.00025	25	0.03690	4
2500	2500	3.20979		0.00000		0.03694	
7500	7500	0.50185	267	0.25142	25	0.00000	4
7600	7400	0.50452	800	0.25117	74	0.00004	10
7700	7300	0.51252	1331	0.25043	124	0.00014	19
7800	7200	0.52583	1856	0.24919	172	0.00033	25
7900	7100	0.54439	2373	0.24747	220	0.00058	32
8000	7000	0.56812	2881	0.24527	268	0.00090	40
8100	6900	0.59693	3378	0.24259	314	0.00130	46
8200	6800	0.63071	3862	0.23945	358	0.00176	52
8300	6700	0.66933	4329	0.23587	402	0.00228	59
8400	6600	0.71262	4781	0.23185	444	0.00287	66
8500	6500	0.76043	5214	0.22741	484	0.00353	70
8600	6400	0.81257	5625	0.22257	522	0.00423	78
8700	6300	0.86882	6014	0.21735	559	0.00501	82
8800	6200	0.92896	6381	0.21176	592	0.00583	87
8900	6100	0.99277	6721	0.20584	624	0.00670	92
9000	6000	1.05998	7035	0.19960	653	0.00762	95
9100	5900	1.13033	7321	0.19307	680	0.00857	100
9200	5800	1.20354	7579	0.18627	704	0.00957	104
9300	5700	1.27933	7806	0.17923	724	0.01061	106
9400	5600	1.35739	8003	0.17199	743	0.01167	109
9500	5500	1.43742	8168	0.16456	760	0.01276	112
9600	5400	1.51910	8301	0.15696	769	0.01388	113
9700	5300	1.60211	8401	0.14927	781	0.01501	114
9800	5200	1.68612	8468	0.14146	786	0.01615	116
9900	5100	1.77080	8502	0.13360	789	0.01731	116
0	5000	1.85582		0.12571		0.01847	

The Number H is taken with Argument H; the Number I, with Argument I; and the Number K, with Argument K. Alſo, H + I + K = M.

TABLE XXIII. Another Table of the Semidurations, to be uſed near the Limits.

Arg. Q.	Semidurations.		Diff.	Arg. Q.	Semidurations.		Diff.
	M.	S.	SEC.		M.	S.	SEC.
0.0000	0	0	86	0.0230	21	43	28
0.0001	1	26	35	0.0240	22	11	27
0.0002	2	1	28	0.0250	22	38	27
0.0003	2	29	23	0.0260	23	5	27
0.0004	2	52	20	0.0270	23	32	25
0.0005	3	12	18	0.0280	23	57	26
0.0006	3	30	17	0.0290	24	23	25
0.0007	3	47	16	0.0300	24	48	24
0.0008	4	3	15	0.0310	25	12	25
0.0009	4	18	14	0.0320	25	37	23
0.0010	4	32	12	0.0330	26	0	24
0.0020	6	24	86	0.0340	26	24	23
0.0030	7	50	73	0.0350	26	47	23
0.0040	9	3	64	0.0360	27	10	22
0.0050	10	7	58	0.0370	27	32	22
0.0060	11	5	54	0.0380	27	54	22
0.0070	11	59	49	0.0390	28	16	22
0.0080	12	48	47	0.0400	28	38	21
0.0090	13	35	44	0.0410	28	59	21
0.0100	14	19	42	0.0420	29	20	21
0.0110	15	1	40	0.0430	29	41	21
0.0120	15	41	38	0.0440	30	2	20
0.0130	16	19	37	0.0450	30	22	20
0.0140	16	56	36	0.0460	30	42	20
0.0150	17	32	34	0.0470	31	2	20
0.0160	18	6	34	0.0480	31	22	19
0.0170	18	40	32	0.0490	31	41	20
0.0180	19	12	32	0.0500	32	1	19
0.0190	19	44	31	0.0510	32	20	19
0.0200	20	15	29	0.0520	32	39	18
0.0210	20	44	30	0.0530	32	57	19
0.0220	21	14	29	0.0540	33	16	19
0.0230	21	43		0.0550	33	35	

Explanation of the Tables for computing the Eclipſes of Jupiter's Satellites.

Theſe tables were originally computed by M. de Lambre from the theory of the mutual attractions of the ſatellites, given by M. de la Place in the Memoire de l'Academie for 1784 and 1788: the forms of the equations were there given, but their values were found from obſervation. Hence there are no empyric equations, as were in the tables of Wargentin. In order to bring theſe tables within the compaſs preſcribed by the nature of our work, we have omitted the years preceding 1800, and have in many places put four tables into one, by omitting ſome columns of *differences*, which were not eſſential, as well as ſome intermediate lines, that were fractional parts of the year, and which therefore may be calculated by the uſe of firſt and ſecond differences, when neceſſary. By theſe means we have been able to reduce the fifty-one tables, as they originally ſtood, into twenty-three, without affecting their accuracy; and have moreover rendered one ſet of precepts, for computing an eclipſe, general for all the four ſatellites, which before were diſtinct for each. To theſe precepts we have annexed an example for each ſatellite, adapted to the year 1815, which will ſufficiently illuſtrate their uſe, as well as prove their accuracy.

Profeſſor Vince adapted M. de Lambre's Tables, as publiſhed by Lalande, to the longitude of Greenwich; and theſe are the tables that we have condenſed for our purpoſe, in which, however, we detected ſome typographical errors, which it was incumbent on us to correct. The epochs in Table VIII. are all *diminiſhed* by the ſum of the maxima of the ſubtractive equations, while the equations themſelves are *increaſed* by their like maxima reſpectively, which arrangement renders all the equations and reductions *additive;* and the mean conjunctions are ſuch as they would be, after the aberration of light is deducted.

The Arguments A, S, B, &c. to be taken out with Tables VIII and IX, are not the ſame, either in their number or properties, with all the ſatellites, and may therefore require ſome explanation, before we proceed to the precepts for the uſe of them, in working the calculations.

The Argument A is the ſame with all the ſatellites, and is the mean anomaly of Jupiter, expreſſed by hundredth parts of a degree, ſo that the whole circle contains 36000 equal parts. In this argument regard is had to Jupiter's great inequality of motion, ariſing from the excentricity of his orbit.

The Argument S is always the mean anomaly of the ſun, and in it the circle is ſuppoſed to be divided into 10000 equal parts.

The Argument B is always the mean longitude of the ſun, diminiſhed by the mean heliocentric longitude of Jupiter; by the ſum of all the perturbations for the inſtant of the firſt mean conjunction of the year; by the greateſt equation of the centre of Jupiter; and by the greateſt equation of the ſun's centre: therefore, if to this value of B be added the great equations of the ſun's and of Jupiter's centre, and if the equation of their orbits be applied, the difference will be had between the true longitude of the ſun and the true heliocentric longitude of Jupiter, the circle being divided into 10000 equal parts.

The Argument C, uſed with the firſt ſatellite, is the difference of the mean longitudes of the firſt and ſecond ſatellites, as ſeen from Jupiter: when uſed with the ſecond and third ſatellites, it is the difference of the mean longitudes of the ſecond and third ſatellites; with the firſt and ſecond ſatellites the circle is divided into 10000 parts, but with the third into 1000 only; and in all of them the numbers C are diminiſhed by half the greateſt equation of the centre of Jupiter. But with the fourth ſatellite the argument C is its own mean anomaly, the circle being divided into 10000.

The Argument c, peculiar to the third ſatellite, is the difference of the longitudes of the third and fourth ſatellites; the circle being divided into 1000.

The Argument D is not uſed with the firſt ſatellite; with the ſecond ſatellite, it is its diſtance from the apſide of the third; with the third ſatellite, it is its own mean anomaly; and with the fourth ſatellite, it is its diſtance from the apſide of the third.

The Argument E alſo is not uſed with the firſt ſatellite; with the ſecond ſatellite, it is the diſtance of the ſecond from the apſide of the third; with the third ſatellite, it is its diſtance from the apſide of the fourth; and with the fourth ſatellite, it is (like c with the third) the difference of the longitudes of the third and fourth.

The Argument F, with the firſt and ſecond ſatellites, is the mean longitude of the firſt ſatellite, diminiſhed by ***twice*** the longitude of the ſecond, and increaſed by the longitude of the apſide of the third; with the third ſatellite it differs from the two former by nearly a ſemicircle; and with the fourth ſatellite it is not uſed.

The Argument G is the ſame as Argument F in all reſpects, except that in it the apſide of the fourth is ſubſtituted for that of the third; neither is it uſed with the fourth ſatellite.

The Argument H, with each ſatellite, is the true diſtance of Jupiter from the node of that ſatellite, and ſerves for finding the firſt reduction of each ſatellite's orbit to that of Jupiter; which, with the firſt ſatellite, is all that is neceſſary.

The Arguments I, K, and L, which are not wanted for the firſt ſatellite, and the laſt of which is not wanted for the fourth, are uſed in addition to Argument H, with reference to the latitudes of the ſatellites, the ſemidiameters of the ſhadow of Jupiter, and his flatneſs, in order to determine certain numbers, the ſum of which conſtitutes the Argument M, to be ſubſtituted for H, as uſed for the firſt ſatellite, in determining the ſemidurations reſpectively of the ſecond, third, and fourth ſatellites, and alſo in finding the number N°, on which the correction of the ſemidurations ariſing from perturbation depends.

The equations depending on the preceding arguments are converted into mean ſynodic time of the ſatellites, and, as we have ſaid, are all made *additive;* the greateſt equation of Jupiter's centre being taken as it was in 1750, and the mean equation of light, for Jupiter's radius vector, at 42′ 56″, that of the ſun being 8′ 13″.2, and his aberration 20″.255.

It may be proper to notice further, that the Arguments B, C, and H, contain alſo the perturbations of Jupiter, which may alter the annual motions two or three parts of the circle; likewiſe, that when B is leſs than 5000, the eclipſe is *before* oppoſition, and therefore indicates that an *immerſion* only is viſible of the firſt and ſecond ſatellites; but that when B exceeds 5000, the eclipſe will be *after* oppoſition, and the *emerſion* only will be viſible. The time calculated from the tables being mean, may be turned into *apparent* time by the Nautical Almanac, or Solar Tables.

Precepts for computing an Eclipſe of any of Jupiter's Satellites.

1. From Table VIII, denominated *Epochs*, &c. take out the days, hours, minutes, and ſeconds, together with the

numbers ſtanding under the various Arguments A, S, B, &c. and arrange them in ſo many correſponding columns along one horizontal line, as ſeen in the ſubjoined examples.

2. From Table IX, denominated *Revolutions for Months*, take out, in the ſame manner, the time and arguments correſponding to the given day, or, if that be not given, the neareſt preceding day, and arrange them under the firſt line in their own reſpective columns.

3. Add up the numbers of Arguments A and S, rejecting 36000 in A, and 10000 in S, when they amount to more than theſe numbers.

4. From Table I, and with Argument A thus determined, and found in the left-hand vertical column under A, take out the corrections under B, H, and C, with the firſt, ſecond, and third ſatellites, but under B and H only with the fourth, and place them, as before, under the laſt line in their reſpective columns, taking care always to add or ſubtract the *proportional parts* of the numbers ſo found under the arguments, accordingly as the Argument A exceeds or falls ſhort of the neareſt tabular number: which attention muſt be paid to all the other arguments hereafter mentioned, when not exactly found in the tables. The correction of H is alſo the correction of I, K, L, with the ſecond and third ſatellites; and of C, I, K, with the fourth; all which columns muſt be filled up with the ſame reſpective corrections; alſo $\frac{1}{10}$th of the correction of H is the correction of D and E with the ſecond ſatellite, as well as with the third, and of D with the fourth; which columns may next be filled up with ſuch tenths reſpectively; and likewiſe $\frac{1}{20}$th of the ſame correction of H is the correction c of the third ſatellite; but correction E of the fourth ſatellite is equal to $1\frac{3}{10}$ths of correction D of the ſame; which numbers muſt alſo be put to their reſpective columns; when columns F and G will have only each two lines of figures, but the reſt each three.

5. With Argument S, already found, take out a fourth correction of B from Table II, and then column B will have four lines of figures.

6. Add up all the remaining columns now, and reject 10000 or 1000, as the caſe may be, when neceſſary; that is, when the numbers exceed thoſe given in the reſpective tables.

7. From Table III. take out the decimal part of the year anſwering to the day of the month given, and annex it to the year, under the month written in the firſt column, as in the examples hereafter put down.

8. From Table X. take out the equation for the year, together with the fractional part, aſcertained by proportional differences, and inſert the ſum into the ſecond column, or column of *time*.

9. With Arg. A enter Table XI, and take out the equation into the laſt-mentioned column of time; as alſo the ſubſequent equations.

10. With Arguments B, A, enter Table V, and take out the equation.

11. With Arguments B, S, enter Table VI, and take out the equation.

12. With Arg. B enter Table VII, and take out the equation.

13. With Arg. C enter Table XII, and take out the equation. Alſo, with Arg. c, for the third ſatellite only, enter Table XIII, and take out the equation.

14. Enter Table XIV. with Arguments F and G for the firſt ſatellite, with D, E, F, and G for the ſecond and third, and with D and E for the fourth; and take out the reſpective equations.

15. With Arg. H enter Table XV, and take out one part of the reduction, which, for the firſt ſatellite, is the whole reduction, and concludes the ſums to be added for it. Alſo, with I, for the fourth ſatellite, take out the ſecond part of the reduction.

16. Second ſatellite. With Argument H + L enter Table XVIII, and take out the other part of the reduction.

Third ſatellite. With Argument H + K enter Table XIX, and take out the other part of the reduction.

Fourth ſatellite. With Argument H + I enter Table XXI, and take out the third part of the reduction; and with Arg. H + K enter the ſame table, and take out the fourth part of the reduction.

17. Add up the whole column of time, which will now give the *mean* time of the *middle* of the eclipſe.

18. Firſt ſatellite. With Arg. H enter Table XVI, and take out the ſemiduration, and alſo the number N.

Second ſatellite, and Third ſatellite. With the Arguments H, I, K, L enter Table XVIII. for the ſecond ſatellite, and XX. for the third, and take out the correſponding numbers, the ſum of which, M, muſt be ſubſtituted for H, to enter Table XVI. for the ſemiduration, and alſo for number N, reſpectively.

Fourth ſatellite. The Arg. L is omitted in this ſatellite, otherwiſe the ſame precept will apply to it in Table XXII, as to the ſecond and third above.

19. Firſt ſatellite, and Second ſatellite. With the Arguments C, N, enter Table XVII, and take out the correction to apply to the ſemiduration, of which it has always the ſame ſign, for the correct ſemidurations.

Third ſatellite. With the Arguments C, D, E, enter Table XVII, and take out the three correſponding numbers with their ſigns, the ſum of which, regarding their ſigns, is called x, the product of which, with number N, is the correction to be applied to the ſemiduration.

Fourth ſatellite. With the Argument C enter Table XVII, and take out the equation + or −, accordingly as the argument is + or −; then this equation, multiplied by number N, regard being had to the ſigns, will be the correction to be applied to the ſemiduration.

20. The correct ſemiduration added to, or ſubtracted from, the mean time of the middle of the eclipſe, accordingly as B is more or leſs than 5000, will give the mean time of emerſion, or of immerſion, as the caſe may be, which, by the equation of time, may be converted into *apparent* time.

Exemplification of the Precepts.

1ſt Example. To calculate the Time of the Emerſion of the *Firſt* Satellite, June 27, 1815.

	D. H. M. S.	A	S	B	C	F	G	H
Epoch 1815 - -	1 7 34 24.4	34625	5026	2652	2766	935	206	6041
June - - - -	25 23 39 54.5	1470	4846	4437	2022	367	365	409
1815.49 - - -	4 22.4			156	75			150
Equation A - -	1 14 49.4	36095		57				
Equation B, A - -	0.3	− 36000						
Equation B, S - -	8.8							
Equation B - -	7 59.3	95	9872	7302	4863	1302	571	6600
Equation C - -	4 14.3					− 1000		
Equation F - -	0.6							
Equation G - -	5.3					302		
Reduction H - -	2.2							
								H. M. S.
Time of middle -	27 8 46 1.1	Semiduration H gives - - - -						1 4 34.4
Semiduration - -	+ 1 4 37.4	N = 86 with C correction - - -						3
Mean time of emerſion -	27 9 50 38.9	Corrected ſemiduration - - - - =						1 4 37.4
By Nautical Almanac -	27 9 50 39							

2d Example. To calculate the Time of the Emerſion of the *Second* Satellite, July 13, 1815.

	D. H. M. S.	A	S	B	C	D	E	F	G	H	I	K	L
Epoch 1815 -	2 6 51 7.1	34636	5048	2656	0277	618	347	937	208	6043	8061	4804	3631
July - - -	10 22 6 21.4	1595	5254	4811	2193	40	43	398	395	443	453	482	618
1815.53 - -	8 42.1			159	74	15	15			147	147	147	147
Equation A -	1 51 45.7	36231	10302	43									
Equation B, A -	0.5	− 36000	− 10000										
Equation B, S -	10.7												
Equation B -	9 50.7	231	302	7669	2544	673	405	335	603	6633	8661	5433	4396
Equation C -	16 28.2												
Equation D -	3.3										H =		6633
Equation E -	24.2												
Equation F -	1 27.4										H + L =		1029
Equation G -	9.5												
Equation H -	5.4			H. M. S.			N = 585						Numb.
Reduction H + L	22.7	Semiduration M gives		1 14 0.6						Arg. H gives			0.4421
		Correction C N -		1 16.7						Arg. I -			24
Mean time of middle	13 7 26 58.9									Arg. K -			73
Semiduration -	1 15 17.3	Corrected ſemiduration		1 15 17.3						Arg. L -			522
Mean time of emerſion	13 8 42 16.2									Arg. M -			0.5040
By Nautical Almanac	13 8 42 14												

Exemplification of the Precepts.

3d Example. To calculate the Time of an Eclipſe of the *Third* Satellite, July 22, 1815.

	D. H. M. S.	A	S	B	c	C	D	E	F	G	H	I	K	L
Epoch 1815 -	2 11 33 52.9	34638	5052	2660	947	055	618	347	445	701	6042	8062	4804	3631
July - -	19 15 48 43.1	1667	5494	5031	023	459	42	45	416	413	463	473	504	646
1815.55 -	17 25			161	7	72	14	14			145	145	145	145
Equation A -	3 6 42.3			36										
Equation B, A	0.6													
Equation B, S	11.8	305	546	7888	977	586	674	406	861	114	6650	8680	5453	4422
Equation B -	10 53.3													
Equation c -	45.3										H =		6650	
Equation C -	1 3.0													
Equation D -	29.7										H + K =		2103	
Equation E -	3 48.8													
Equation F -	3.4													
Equation G -	14.6													
Reduction H -	11.0													
Reduc. H + K	23.6													
Mean time of middle	22 7 4 48.4													
Semiduration	∓ 1 14 17.8													
Mean time of immerſion	22 5 50 30.6													
Mean time of emerſion	22 8 19 6.2													

	H. M. S.
Semiduration M	1 14 17.1
Correction *x* N =	+ 0.7
Semiduration corrected	1 14 17.8

By Nautical Almanac.

$22^d\ 5^h\ 50^m\ 58^s$

22 8 19 32

Arg. C Equat.	— 4″.5
Arg. D Equat.	— 4.0
Arg. E Equat.	— 4.0
x -	— 12.5
N -	— 0.053
x N =	— 0.6625

	Numb.
Arg. H gives	0.17932
Arg. I -	0.01933
Arg. K -	0.07460
Arg. L -	0.00703
Arg. M -	0.28028

4th Example. To calculate an Eclipſe of the *Fourth* Satellite, Feb. 4, 1815.

	D. H. M. S.	A	S	B	C	D	E	H	I	K	
Epoch 1815 -	1 12 45 52.4	34632	5037	2664	3502	618	881	6040	8060	4802	
February - -	2 12 10 14.1	278	917	840	76	7	676	77	79	84	
1815.1 - -	41 39.5			125	181	18	23	181	181	181	
Equation A -	7 52 0.7			84							
Equation B, A -	1.2										
Equation B, S -	12.2	34910	5954	3713	3759	643	580	6298	8320	5067	
Equation B -	3 1.0										
Equation C -	1 36 42.6							H =	6298	6298	
Equation D -	16.0										
Equation E -	11.4							H + I =	4618	1365	= H + K
Reduction H -	0.2										
Reduction I -	2.6										
Reduction H + I	38.4										
Reduction H + K	1.2										
Mean time of middle	4 11 10 53.5										
Semiduration -	∓ 1 9 33.5										
Mean time of immer.	4 10 1 20.0										
Mean time of emer.	4 12 20 27.0										

	H. M. S.
Semiduration -	1 8 43.
Correction -	+ 50.5
Semiduration corrected	1 9 33.5

By Nautical Almanac.

$4^d\ 10^h\ 1^m\ 20^s$

4 12 20 27

	Numb.
Arg. H gives -	0.87002
Arg. I - -	0.23506
Arg. K - -	0.01769
Arg. M = - -	1.12277

N = — 1.123

Arg. C — 45″

Correction 50.535 Product.

In this laſt example the fourth ſatellite approaches the limits, where an eclipſe will ceaſe to take place; and if M had exceeded 2.98, or been leſs than 1.02, the method here uſed would not have been ſufficiently exact for finding the true ſemiduration. When this happens, the laſt Table XXIII. muſt be uſed inſtead of Table XVI. thus;

Let $V = 3 - M$ in the firſt caſe, and $= M - 1$ in the ſecond; and take in Table XVII. the number X, and make $Q = X + 2V - V^2$; and with Q enter Table XXIII. and you have the ſemiduration without an error of more than half a ſecond. But if you wiſh to correct this error, let D = the ſemiduration found by the number Q; and the true ſemiduration $= D - XD$. The number X has a different ſign from its argument. When Q is poſitive there will be an eclipſe, but when Q is negative there will be no eclipſe.

Example.—Let $M = 2.998$, or 1.002, V being the ſame in each, and $C = 2400$.

Then $V = 3 - M = M - 1 = -0.002$; alſo $X = -0.00093$, the argument $C = 2400$ being +; hence

$$\begin{aligned} X &= -0.00093 \\ 2V &= +0.004 \\ -V^2 &= -0.000004 \\ \hline Q &= +0.003066 \end{aligned}$$

With this value of Q enter Table XXIII. and you get the duration

$$\begin{aligned} D &= 7' 55'' \\ -XD &= +0.4 \\ \hline \text{Correct ſemiduration} &= 7\ 55.4 \end{aligned}$$

If C had been 100, then X would have been $= -0.01479$, and $Q = -0.010794$, a negative quantity, which ſhews that there would have been no eclipſe under theſe circumſtances.

SATELLITES *of Saturn*, are ſeven little ſtars revolving about Saturn, and affording ſome light during the abſence of the ſun.

One of theſe ſatellites, *viz.* the fourth, was diſcovered by M. Huygens, anno 1655, 25th of March, by means of a teleſcope twelve feet long; and he publiſhed a table of its mean motion in 1659; the other four were diſcovered at different times, by M. Caſſini; *viz.* the firſt and ſecond in March, 1684, by help of Campani's glaſſes of one hundred and one hundred and thirty-ſix feet; the third in December 1672, by a teleſcope of Campani's, of thirty-five feet; and the fifth in October 1671, by a teleſcope of ſeventeen feet. He afterwards publiſhed tables of their motions. He called them "Sidera Lodoicea," in honour of Louis le Grand, in whoſe reign, and obſervatory, they were diſcovered; but Dr. Halley having found by his own obſervations in 1682, that Huygens's tables were about fifteen degrees in twenty years too forward, compoſed new tables from more correct elements. He alſo reformed M. Caſſini's tables of the mean motions; and about the year 1720, publiſhed them a ſecond time, corrected from Mr. Pound's obſervations. He obſerves, that the four innermoſt ſatellites deſcribe orbits very nearly in the plane of the ring, which, as he ſays, is, as to the ſenſe, parallel to the equator; and that the orbit of the fifth is a little inclined to them. The following table contains the periodic times of the five ſatellites, and their diſtances in ſemidiameters of the ring, as determined by Mr. Pound, with a micrometer fitted to the teleſcope given by Huygens to the Royal Society. Mr. Pound firſt meaſured the diſtance of the fourth, and then deduced the reſt from the proportion between the ſquares of the periodic times and cubes of their diſtances, and theſe are found to agree with obſervations.

Satellites.	Periodic Times by Pound.	Diſtance in ſemid. of Ring by Pound.	Diſtance in ſemid. of Saturn by Pound.	Diſt. in ſemid. of Ring by Caſſini.	Diſt. at the mean diſtance of Saturn.
I.	$1^d\ 21^h\ 18'\ 27''$	2.097	4.893	$1\frac{14}{15}$	$0'\ 43''.5$
II.	2 17 41 22	2.686	6.286	$2\frac{1}{2}$	0 56
III.	4 12 25 12	3.752	8.754	$3\frac{1}{2}$	1 18
IV.	15 22 41 12	8.698	20.295	8	3 0
V.	79 7 49 0	25.348	59.154	23	8 42.5

The laſt column is from Caſſini; but Dr. Herſchel makes the diſtance of the fifth to be 8′ 31″.97, which is probably more exact. In this table the ſatellites are numbered from Saturn as they were before the diſcovery of the other two.

On the 9th of June, 1749, at 10^h Mr. Pound found the diſtance of the fourth ſatellite to be 3′ 7″ with a teleſcope of one hundred and twenty-three feet, and an excellent micrometer fixed to it; and the ſatellite was at that time very near its greateſt eaſtern digreſſion. Hence, at the mean diſtance of the earth from Saturn, that diſtance becomes 2′ 58″.21; ſir I. Newton makes it 3′ 4″.

The periodic times are found as for the ſatellites of Jupiter. To determine theſe, M. Caſſini choſe the time when the ſemi-minor axes of the ellipſes which they deſcribe were the greateſt, as Saturn was then ninety degrees from their node, becauſe the place of the ſatellite in its orbit is then the ſame as upon the orbit of Saturn; whereas in every other caſe, it would be neceſſary to apply the reduction in order to get the place in its orbit.

As it is difficult to ſee Saturn and the ſatellites at the ſame time in the field of view of a teleſcope, their diſtances have ſometimes been meaſured, by obſerving the time of the paſſage of the body of Saturn over a wire adjuſted as an hour-circle in the field of the teleſcope, and the interval between the times when Saturn and the ſatellite paſſed. From comparing the periodic times and diſtances, M. Caſſini obſerved, that Kepler's rule agreed very well with obſervations.

By comparing the places of the ſatellites with the ring in different points of their orbits, and the greateſt minor axes of the ellipſes which they appear to deſcribe, compared with the major axes, the planes of the orbits of the firſt four are found to be very nearly in the plane of the ring, and therefore are inclined to the orbit of Saturn about thirty degrees; but the orbit of the fifth, according to M. Caſſini the ſon, makes an angle with the ring of about fifteen degrees.

M. Caſſini places the node of the ring, and conſequently the nodes of the four firſt ſatellites, in $5^s\ 22°$ upon the orbit of Saturn, and $5^s\ 21°$ upon the ecliptic. M. Huygens had determined it to be in $5^s\ 20°\ 30'$. M. Maraldi, in 1716, determined the longitude of the node of the ring upon the orbit of Saturn to be $5^s\ 19°\ 48'\ 30''$; and upon the ecliptic to be $5^s\ 16°\ 20'$. The node of the fifth ſatellite is placed by M. Caſſini in $5^s\ 5°$ upon the orbit of Saturn. M. de la Lande makes it $5^s\ 0°\ 27'$. From the obſervation of M. Bernard at Marſeilles, in 1787, it appears that the node of this ſatellite is retrograde.

Dr. Halley diſcovered, that the orbit of the fourth ſatellite was excentric; for, having found its mean motion, he diſcovered that its place by obſervation was at one time three degrees forwarder than by his calculations, and at other obſervations it was 2° 30′ behind; this indicated an excentricity; and he placed the line of the apſides in $10^{s}\ 22^{\circ}$. Phil. Tranſ. N° 145.

The ſatellites of Saturn move in orbits that may be called *vertical* with reſpect to our view of them, whereas thoſe of Jupiter's ſatellites are *horizontal;* conſequently the latter bodies paſs through Jupiter's ſhadow, and are eclipſed, but the former can never be ſo circumſtanced as to be eclipſed, as they never come near Saturn's ſhadow, except perhaps when the ring looks edgeways to the earth by means of its paralleliſm, which will happen twice in every 29 years, but revolve round *him* in circles that ſtand at nearly right angles to the ſhadow, and conſequently do not vary their *diſtance* from the ſun, as thoſe of Jupiter do in every revolution.

M. Caſſini obſerved, that the fifth ſatellite diſappeared regularly for about half its revolution, when it was to the eaſt of Saturn; from which he concluded, that it revolved about its axis; he afterwards, however, doubted of this. But ſir I. Newton (in his Principia, lib. iii. prop. 17.) concludes from hence, that it revolves about its axis, and in the ſame time that it revolves about Saturn; and that the variable appearance ariſes from ſome parts of the ſatellite not reflecting ſo much light as others. Dr. Herſchel has confirmed this, by tracing regularly the periodical change of light through more than ten revolutions, which he found, in all appearances, to be contemporary with the return of the ſatellite to the ſame ſituation in its orbit. This is further confirmed by ſome obſervations of M. Bernard, at Marſeilles, in 1787; and is a remarkable inſtance of analogy among the ſecondary planets.

The ſixth and ſeventh ſatellites were diſcovered by Dr. Herſchel, with his forty-feet reflector: the ſixth was firſt obſerved the 19th of Auguſt, 1787, and aſcertained to be a ſatellite of Saturn the 28th of Auguſt, 1789, and interior to all the others; and the ſeventh was diſcovered the 17th of September, 1789, interior to the ſixth. (See Phil. Tranſ. for 1789.) In a paper upon Saturn and its ring (Phil. Tranſ. for 1790, vol. lxxx.) he has given an account of the diſcovery, with ſome of the elements of their motions. He afterwards added tables of their motions. With his twenty-feet teleſcope he apprehended that he ſaw a ſixth ſatellite; but as ſoon as he had finiſhed his teleſcope of forty-feet focal length, he directed it to Saturn, and was preſented with a view of ſix of its ſatellites, in ſuch a ſituation and ſo bright, as rendered it impoſſible to miſtake them, or not to ſee them. The retrograde motion of Saturn amounted at the time to nearly 4½ minutes *per* day, and this circumſtance made it very eaſy to aſcertain whether the ſtars, which he took to be ſatellites, were ſo; and in about 2½ hours he had the pleaſure of finding, that the planet had viſibly carried them all away from their places. He continued his obſervations, and diſcovered, as we have already ſaid, the ſeventh ſatellite. Theſe two ſatellites lie within the orbits of the other five. Their diſtances from the centre of Saturn are $36''.7889$ and $28''.6689$; and their periodic times are $1^{d}\ 8^{h}\ 53'\ 8''.9$ and $22^{h}\ 37'\ 22''.9$. The planes of the orbits of theſe ſatellites lie ſo near to the plane of the ring, that the difference cannot be perceived. All the ſatellites of Saturn are ſo ſmall, and ſo remote from the earth, that very good teleſcopes are neceſſary for obſerving them. Wargentin ſaw the five old ſatellites with an achromatic teleſcope of ten feet; and on the 19th of December 1793, Dr. Herſchel ſaw them diſtinctly with a power of ſixty applied to his ten-feet reflector. Phil. Tranſ. for 1794, vol. lxxxiv. p. 56.

Of all the ſeven ſatellites, the ſixth and ſeventh, *viz.* thoſe diſcovered by Dr. Herſchel, and neareſt the planet, are the ſmalleſt; the firſt and ſecond are the next in ſize; the third is greater than the firſt and ſecond; and the fourth is the largeſt of all: the fifth exceeds all of them but the fourth in brightneſs, when it is at its weſtern elongation from Saturn, but at other times it is extremely ſmall, and at its eaſtern elongation entirely diſappears. This phenomenon, firſt obſerved by Caſſini, ſeems to ariſe from one part of the ſatellite being leſs luminous than the reſt. By its rotation on its axis, which this phenomenon ſeems to eſtabliſh, this obſcure part of its diſc is turned, like the earth's, when it is in the part of its orbit eaſt of Saturn; and the luminous part of its ſurface becomes viſible while it enters into the weſtern part of its orbit. Dr. Herſchel obſerved this ſatellite, nor ever loſt ſight of it with his twenty-feet teleſcope, through all the variations of its light, and hence concluded, that it revolved round its axis in the ſame time that it performed its rotation round the primary planet.

The *firſt* ſatellite of Saturn revolves at the diſtance of 4.893 ſemidiameters of the planet, in $1^{d}\ 21^{h}\ 18'\ 26''$; the *ſecond* at 6.268 ſemidiameters of Saturn, in $2^{d}\ 17^{h}\ 44'\ 51''$; the *third* at 8.754 ſemidiameters of Saturn, in $4^{d}\ 12^{h}\ 25'\ 11''$; the *fourth* at 20.297 ſemidiameters of Saturn, in $15^{d}\ 22^{h}\ 41'\ 11''.092$ by La Lande; the *fifth* at 59.154 ſemidiameters of Saturn, in $79^{d}\ 7^{h}\ 53'\ 43''$; the *ſixth* at 3.080 ſemidiameters of the planet, in $22^{h}\ 37'\ 23''$; and the *ſeventh* at 3.952 ſemidiameters of Saturn, in $1^{d}\ 8^{h}\ 53'\ 9''$. The following table ſhews the ſeveral particulars that are known concerning the ſatellites of Saturn.

	Seventh Satel.	Sixth Satellite.	Firſt Satellite.	Second Satellite.	Third Satellite.	Fourth Satellite.	Fifth Satellite.
Periodical revolution,	$1^d\ 8^h\ 53'\ 9''$	$22^h\ 37'\ 23''$	$1^h\ 21^d\ 18'\ 26''.2$	$2^d\ 17^h\ 44'\ 51''.2$	$4^d\ 12^h\ 25'\ 11''.1$	$15^d\ 22^h\ 41'\ 13''.1$	$79^d\ 7^h\ 53'\ 42''.8$
Synodical revolution,	1 8 53 24	22 37 30	1 21 18 54.8	2 17 45 51.0	4 12 27 55.2	15 23 15 20.2	79 22 3 12.9
Periodical revolution, in days and decim.	D. 0.04271	D. 1.37024	D. 1.88780	D. 2.73948	D. 4.51749	D. 15.9453	D. 79.3295
Do. in ſeconds,	81443″	118389″	163106″	236991″	390311	1377973	6854023
Longitude 1ſt January 1788,			$10^s\ 27°\ 53'$	$10^s\ 7°\ 45'$	$5^s\ 25°\ 25'$	$5^s\ 12°\ 20'$	$4^s\ 20°\ 22'$
Daily motion,			6 10 41 53″	4 11 32 6″	2 19 41 24″	0 22 34 38″	0 4 32 17″
Motion for 365 days,			4 4 44 42	4 10 15 19	9 16 57 5	10 20 40 41	7 6 23 87
Diſtance in diameters of the rings, according to Bradley,			1.0485	1.344	1.876	4.349	12.674
In diameters of Saturn,	1.540	1.976	2.5465	3.134	4.377	10.1475	29.577
In min. and ſec.	36″.79	28″.669	43″.5	56″	1″18	3″10	8′ 42″.5
In French leagues,	44053	56390	65149	83377	116458	270048	884152
Inclination of orbit,	30°	30°	30°	30°	50°	30°	24° 45′
Place of node, according to Lalande,	$5^s\ 17°\ 5'$	$5^s\ 17°\ 5'$	$5^s\ 17°\ 5'$	$5^s\ 17°\ 6'$	$5^s\ 17°\ 5'$	$5^s\ 17°\ 5'$	$4^s\ 25°\ 5'$
According to Caſſini,	5 22	5 22	5 22	5 22	5 22	5 22	4 5
According to Maraldi,	5 16 20	5 16 20	5 16 20	5 16 20	5 16 20	5 16 20	
According to Huygens,	5 20 30	5 16 30	5 20 30	5 20 30	5 20 30	5 20 30	

The poſition of the ſatellites of Saturn may be eaſily found for any particular time, by tables of their motions, calculated by Caſſini, and given in the Tables de Berlin; from tables calculated by Dr. Herſchel, and publiſhed in the Philoſophical Tranſactions for 1790; and from Dr. Maſkelyne's Tables, given in vol. i. of Vince's Aſtronomy. They may alſo be found by a very ſimple inſtrument called a Saturnilabe, which is deſcribed in La Lande's Aſtr. vol. iii. p. 203.

The elements of the ſatellites of this planet are leſs perfect than thoſe of the ſatellites of Jupiter. The difficulty of meaſuring their elongations from Saturn, have prevented aſtronomers from determining, with their uſual preciſion, the mean diſtances, and the revolutions of theſe ſecondary planets. In the poſition of their orbits, however, there is ſomething very remarkable. While the orbits of the ſix inner ſatellites, that is the firſt, ſecond, third, fourth, ſixth, and ſeventh, all lie in the plane of Saturn's ring, the orbit of the fifth deviates conſiderably from this plane. La Place imagines that the accumulation of matter at Saturn's equatorial parts retains the orbits of the ſix firſt ſatellites in the plane of the equator, in the ſame manner as it maintains the ring in that plane. The action of the ſun, indeed, tends to draw them from the plane; but the effect of this action becomes ſenſible only on the orbit of the fifth or outer ſatellite, which ſufficiently accounts for the deviation of its path from the general plane in which Saturn conſtrains the other ſatellites to move. The orbits of the ſatellites of Saturn move, like thoſe of the moon, and the ſatellites of Jupiter, upon fixed planes, which paſs conſtantly by the nodes of the equator and the orbit of Saturn, between their two laſt planes. Their orbits preſerve their inclination almoſt invariable, and their nodes have a retrograde motion nearly uniform. See Mecanique Celeſte, tom. iv. cited by Dr. Brewſter in the ſecond volume of his edition of Ferguſon's Aſtronomy. See alſo Vince's Elements of Aſtronomy. See PLANET and SATURN.

The great diſtance between the fourth and fifth ſatellite, gave occaſion to Huygens to ſuſpect that there might be ſome intermediate one; or elſe, that the fifth might have ſome other ſatellite moving round it, as its centre.

SATELLITES *of the Georgium Sidus.* Two of theſe ſatellites were diſcovered by Dr. Herſchel, January the 11th, 1787; and they were aſcertained to be ſuch in the courſe of the enſuing month. Of this diſcovery an account was given in the Philoſophical Tranſactions for 1787, vol. lxxvii. p. 125, &c. In the Philoſophical Tranſactions for 1788, vol. lxxviii. part 2, he publiſhed a further account of this diſcovery, comprehending their periods and diſtances, and the poſitions of their orbits, as far as he was then able to aſcertain them. In order to ſettle their periods, he availed himſelf of the ſynodic revolutions, and the mean of ſeveral reſults gave that of the firſt ſatellite $8^d\ 17^h\ 1'\ 19''.3$, and that of the ſecond $13^d\ 11^h\ 5'\ 1''.5$. For the diſtances, he found one by obſervation, and then the other from the periodic times. In attempting to diſcover the diſtance of the ſecond, the orbit was apparently elliptical. On March 18th, 1787, at $8^h\ 2'\ 50''$, he found the elongation to be 46″.46, which was the greateſt of all the meaſures he had taken. Hence, at the mean diſtance of the Georgian from the earth, this elongation will be 44″.23. Admitting then for the preſent, ſays Dr. Herſchel, that the ſatellites move in circular orbits, we may take 44″.23 for the true diſtance, without much error: hence, the ſquares of the periodic times being as the cubes of the diſtances, the diſtance of the firſt ſatellite comes out 33″.09. Here were uſed the ſynodic revolutions, inſtead of the ſidereal, which aſſumption makes but a ſmall error. In determining the inclinations of the orbits, and the places of their nodes, our author met with a difficulty; for at the time of his firſt obſervation, it could not be aſcertained which part of the orbit inclined to the earth, and which declined from it. Dr. Herſchel, therefore, computed, on theſe two ſuppoſitions, the inclinations of the orbits, and the places of the nodes, and found them as follows; the orbit of the ſecond ſatellite is inclined to the ecliptic 99° 43′ 53″.3, or 81° 6′ 4″.4; its aſcending node upon the ecliptic is in 18° of Virgo, or 6° of Sagittarius; and when the planet paſſes the meridian, being in the node of this ſatellite, or about the year 1818, the northern part of its orbit will be turned towards the $\left\{\begin{array}{l}\text{eaſt}\\ \text{weſt}\end{array}\right\}$. M. de Lambre makes the aſcending node in $5^s\ 21°$, or $8^s\ 9°$, from Dr. Herſchel's obſervations. The ſituation of the orbit of the firſt ſatellite does not materially differ from that of the ſecond. The light of the ſatellites is extremely faint: the ſecond is the brighteſt of the two, but the difference is inconſiderable. This faintneſs of luſtre is evidently owing to their great diſtance. Theſe ſatellites are probably not leſs than thoſe of Jupiter. In the year 1818 we ſhall have eclipſes of theſe ſatellites, when they will appear to aſcend through the ſhadow of the planet, almoſt in a direction perpendicular to the ecliptic. Dr. Herſchel has ſince diſcovered four more ſatellites of the Georgian, and found that their motions are all retrograde. We have an arrangement of the ſix ſatellites in the Philoſophical Tranſactions for 1798, vol. lxxxviii. part 1. which is as follows:

Firſt ſatellite, the interior one of January 18, 1790.
Second ſatellite, the neareſt old one of January 11, 1787.
Third ſatellite, the intermediate one of March 26, 1794.
Fourth ſatellite, the fartheſt old one of January 11, 1787.
Fifth ſatellite, the exterior one of February 9, 1790.
Sixth ſatellite, the moſt diſtant one of February 28, 1794.

The firſt of the new ſatellites will hardly ever be ſeen otherwiſe than about its greateſt elongation, but cannot be much inferior in brightneſs to the other two; and if any more interior ſatellites ſhould exiſt, we ſhall probably, as our author conceives, not obtain a ſight of them, for the ſame reaſon that the inhabitants of the Georgian planet perhaps never can diſcover the exiſtence of our Earth, Venus, and Mercury. The ſecond new or intermediate ſatellite is conſiderably ſmaller than the firſt and ſecond old ſatellites. The two exterior, or fifth and ſixth ſatellites, are the ſmalleſt of all, and muſt chiefly be looked for in their greateſt elongations. Although the diſtances of theſe ſatellites cannot be accurately aſcertained, without a greater number of obſervations, Dr. Herſchel thinks that we may admit the diſtance of the interior ſatellite to be $25''.5$, as his calculation of the eſtimation of March 5, 1794, gives it; and hence we may compute that its periodical revolution will be $5^{d}\ 21^{h}\ 25'$. If we place the intermediate ſatellite at an equal diſtance between the two old ones, or at $38''.57$, its period will be $10^{d}\ 23^{h}\ 4'$. The diſtance of the neareſt exterior ſatellite ſeems to be about double the diſtance of the fartheſt old one: hence its periodical time is found to be $38^{d}\ 1^{h}\ 49'$. The moſt diſtant ſatellite, according to the calculation of the obſervation of February 28, 1794, is full four times as far from the planet as the old ſecond ſatellite: it will therefore take at leaſt $107^{d}\ 16^{h}\ 40'$ to complete one revolution. For other particulars relating to theſe ſatellites, ſee GEORGIAN *Planet*. No other aſtronomer beſides Dr. Herſchel has ſeen theſe ſatellites, nor do the French aſtronomers believe that there are any belonging to this planet: we admit them, however, for the preſent on the authority of this excellent obſerver.

SATELLITIAN, or SATELLITE-*Machine*, in *Aſtronomy*, is a machine by which the motions of the ſatellites, or ſecondary planets, are produced by the aid of wheel-work, in the ſame way that the motions of the primary planets are effected by a planetarium. As the ſecondary planets, with the exception of our moon, were not diſcovered till after the invention of teleſcopes took place, a machine for exhibiting their motions is not of ſuch ancient date, as ſome of the machines which were firſt contrived to repreſent the Ptolemaic and other ſyſtems of the primary planets, and which we have deſcribed under our article PLANETARY *Machines*. The ſatellites of Jupiter being nearer to the earth than thoſe of Saturn or Georgium, were diſcovered by Simon Marius and Galileo in the years 1609 and 1610, as we have above ſtated; and in 1679 we find Roemer preſenting a machine for exhibiting their apparent places to Mr. Flamſteed, which was only four years after the Royal Obſervatory of Greenwich was founded. An account of this machine was firſt publiſhed by Dr. Derham in his "Artificial Clock-maker," and was thence copied by Mr. John Harris into his "Lexicon Technicum." We propoſe to deſcribe the ſatellite-machines in the order of their invention, as we have before done the *orreries* and *planetaria*.

Roemer's.—In *fig.* 1. of *Plate* XII. of *Planetary Machines*, we have given a ſection of Roemer's ſatellite-machine, in which A B C D is an oblong frame or box, containing the wheel-work neceſſary for giving the requiſite motions to the four ſmall balls, carried by as many bent arms round the central ball, that repreſents Jupiter. The numerals attached to each wheel indicate the reſpective numbers of teeth in each wheel, and the arbor which carries the *week-hand*, under the box, is aſſumed as revolving in an exact week, in order to indicate the ſeven days, when the machine was in uſe, it muſt therefore have been placed in a vertical poſition, to ſhew the graduations of the day ſpaces, which were probably ſubdivided into hours on the face of indication, as there does not appear to have been a day-hand revolving in 24 hours. The four wheels denoted by the numbers 28, 42, 63, and 87, were all fixed faſt on the common arbor of ſeven days, and conſequently all revolved alike in this period of aſſumed time: their fellow-wheels, 67, 43, 32, and 22, having each a tube of different bore and length, to carry the four arms reſpectively, revolved conſequently in different times, agreeably to the periods of the four ſatellites that they were calculated to exhibit, and each pair of wheels were ſo many fractions of the aſſumed period of ſeven days, *viz.* $\frac{28}{67}$, $\frac{42}{43}$, $\frac{63}{32}$, and $\frac{87}{22}$, the values and errors of which we have already given under our hiſtory of PLANETARY *Machines*, together with ſuch other remarks on the original contrivances, as ſuperſede the neceſſity of a more minute deſcription in this place. We may add, however, that Mr. Ferguſon added an annual wheel to Roemer's conſtruction, for the ſake of indicating the days and months, and that he changed the wheels $\frac{63}{32}$ for $\frac{65}{33}$, which gave a period of $3^{d}\ 13^{h}\ 17^{m}\ 32^{s}.3$, which is more accurate than that given by the original numbers by $1^{m}\ 34^{s}.3$. B. Martin alſo added wheel-work for giving Jupiter's ſatellites their motions in his orrery, but theſe were calculated for periodic, not ſynodic, revolutions, and the only numbers that have been publiſhed are $\frac{11163}{43}$, from which the wheels of the fourth ſatellite were derived.

Satellitian of the Rev. W. Pearſon.—We are not aware that any further alteration was made in the original conſtruction of the ſatellite-machine, as a ſimple machine, till the year 1798, when Mr. Pearſon (now the Rev. Dr. Pearſon,) not knowing of the exiſtence of Roemer's machine, contrived one very ſimilar in its powers and properties, which is deſcribed in Mr. Nicholſon's Journal of that year; vol. ii. 4to. edit. p. 122, et ſeq. The principal difference, between this and Roemer's machine, conſiſts in the time aſſumed for the common arbor to revolve in, it being the inventor's intention to give motion to the ſatellites by a clock, that would at any inſtant exhibit the exiſting relative ſituations of the four ſatellites at any hour and minute of each ſucceſſive day, while the motions of the four little repreſentative balls kept pace with thoſe of the ſatellites themſelves, as viewed at any time with a teleſcope. The ſection of the box and wheel-work of this ſimple machine,

chine, together with the various hands and arms, may be ſeen in *fig.* 2. of the laſt-mentioned plate, where all the dimenſions correſpond with thoſe of the machine itſelf, and in which the action of all the wheels is eaſily intelligible. A B C D is here alſo an oblong box, made to contain the wheel-work; and the communication of motion is from a ſingle endleſs ſcrew, cut on an arbor that revolves by the clock-work in 24 hours, or that may be actuated by a handle inſerted thereon: this ſcrew acting at E, with a wheel of 73 teeth, makes this wheel move forwards the ſpace of one tooth in each day, and the *month-hand* is carried by its prolonged arbor through a quintuple ſpiral in five revolutions, *viz.* in 73 × 5 or 365 days, the months and day ſpaces being ſo divided, from the outer to the inner end of the quintuple ſpiral, as to contain an appropriate ſpace for each day in the year; but leſt any miſtake ſhould ariſe, or doubt occur, as to which line of the ſpiral the index muſt be conſidered as pointing at any given time, a *week-hand* is ſuperadded, to ſhew whether the day indicated is a *Monday*, *Tueſday*, *Wedneſday*, &c.; the arbor carrying this hand receives its motion from the wheel of 73, by means of a pinion of 7, one tooth of which is actuated in each ſucceſſive day, and therefore its arbor revolves in a week exactly. From the weekly arbor the motion is transferred to the daily arbor, and an *hour-hand* is carried by it, by the interpoſition of the wheel 56, that drives the pinion of 8 on the common arbor, on which are alſo made faſt the wheels 18, 27, and 39; which therefore all revolve together in the ſpace of a natural day: theſe wheels actuate reſpectively the larger wheels 134, 129, 96, and 69, in the reſpective periods of the ſatellites, and their tubes, moving one within another, bear the arms and planetary balls as repreſented in the figure. The reſpective values and errors of theſe four pairs of ſimple wheel-work, if accurately calculated, will be found to be thoſe contained in the ſubjoined little table; *viz.*

Sat.	Wheels.	Periods.	Errors in 24h.
1.	$\frac{39}{69}$ of 24^h	1^d 18^h 27^m 41^s	— 0′ 30″.7
2.	$\frac{27}{96}$ of ditto	3 13 20 0	+ 0 36.9
3.	$\frac{18}{129}$ of ditto	7 4 0 0	+ 0 3.4
4.	$\frac{8}{134}$ of ditto	16 18 0 0	— 0 18

The diſtances of the four ſatellites from Jupiter are uſually meaſured in diameters of this planet, and in the inſtrument before us the length of each arm, or radius vector, is, of the firſt ſatellite $2\frac{5}{6}$ diameters of Jupiter, of the ſecond $4\frac{1}{2}$, of the third $7\frac{1}{6}$, and of the fourth $12\frac{2}{3}$. When the machine is detached from the clock, and turned by a handle, a ſcreen of paper is uſed to receive the ſhadows of the four little balls, as well as of Jupiter, while a candle or lamp is placed at about four feet diſtance on the oppoſite ſide of the machine, on a ſtand that has an arm revolving by adjuſtment round the central ſtem: this arm, which carries the candle or lamp, is placed, by means of a ſmall graduated ecliptic circle, in ſuch a ſituation, that the ſhadow of Jupiter may be to the right or left of the mean place, accordingly as the immerſions or emerſions are viſible, that is, accordingly as Jupiter, the Earth, and Sun, are reſpectively ſituated before or after oppoſition. In *fig.* 3. the middle circle repreſents the ſhadow coincident with Jupiter, which is the appearance when Jupiter and the Earth are either in conjunction or oppoſition; and the two double circles exhibit the relative ſituations of Jupiter and his ſhadow, when the Earth and he are about three ſigns from each other before and after oppoſition. In one of theſe ſituations the ſatellites come to the ſhadow before they come to the planet, and then the immerſions only of the firſt ſatellite are ſeen; but in the other ſituation, when they come to Jupiter firſt, its emerſions only are viſible: the other ſatellites, by reaſon of their greater diſtance, have, however, in this ſituation, both their immerſions and emerſions ſucceſſively viſible in the ſame revolution, unleſs indeed the latitude of the fourth be conſiderable, in which caſe the ſmall ſection of the ſhadow, at a great diſtance from Jupiter, will not be entered into; which ſhadow is conical, on account of the ſuperior magnitude of the ſun over that of Jupiter. The ſmall concentric circles drawn in the light circles, are intended to repreſent the ſections of the ſatellites at their different diſtances; the firſt having the largeſt ſection, and the fourth ſcarcely any exceeding a point. When the dark circle, repreſenting Jupiter, is drawn on the ſcreen, the candleſtick muſt be ſo adjuſted that the ſhadow of the planet will fall at the proper diſtance to the right or left of him, as the caſe may be, when the ſun's place is compared with Jupiter's geocentric longitude. In the laſt page of each month in the Nautical Almanac, the configurations of Jupiter's ſatellites are put down ſo accurately, that a compariſon of the appearance there given, with that on the ſcreen, as produced by the machine, and alſo with that ſeen through a good teleſcope in the heavens, will be a pleaſing amuſement to any one who has ſuch a machine, and will aſſiſt in the adjuſtment of the places of the different ſatellites. The configuration in *fig.* 4. anſwers to that given for ten o'clock at night on the 1ſt of April 1815.

In one of the ſatellitians, the inventor gave a motion to Jupiter's axis in 9^h 55^m $51\frac{3}{4}^s$, by the wheels $\frac{24}{58}$, but ſuch addition may be diſpenſed with, as not neceſſary for any material illuſtration.

Janvier's Jovilabe.—When we deſcribed the ORRERY by Antide Janvier of Paris, we mentioned that his work, intitled "Des Revolutions des Corps celeſtes," &c. publiſhed in 1812, had juſt been received, and in it we find an account of a *jovilabe*, or machine for repreſenting the motions of Jupiter and his ſatellites, which he profeſſes to have conſtructed, as a portion of his *moving ſphere*, in the year 1789, and which he ſays is deſcribed by Berthoud, in his "Hiſtoire de la Meſure du Tems." We have turned to Berthoud's account, but find that the motions of the ſatellites produced in the ſphere require twenty wheels and pinions for the motions of the four ſatellites only, whereas thoſe recently publiſhed amount to only four ſimple pairs; and, as the reader will ſee, are artfully copied from Dr. Pearſon's ſatellitian, which we have juſt deſcribed, as invented in the year 1798. We will firſt deſcribe the machine itſelf, a ſection of which is given in *fig.* 3. of *Plate* XII. and then ſee how far this ingenious Frenchman, who complains of the plagiariſm of his own citizens, may be conſidered as the inventor of the conſtruction which he has finally adopted. In deſcribing Janvier's machine, we propoſe to retain the letters of reference, as well as the entire figure numbered 3 in his plate vi. in order that we may do juſtice to the author's arrangement; but we do not conceive it neceſſary to give figures 1 and 2 of the ſame plate, as they would occupy too much ſpace, and as they relate only to the graduations and calliper, which may be apprehended from our detail of the wheel-work, and the other parts ſeen in our figure. T T conſtitute the box that contains the mechaniſm, and R R two of the feet on which it ſtands; a handle is inſerted at *q*, on the arbor of the contrate wheel *p*, which is the firſt mover, aſſumed to revolve in twenty-four hours of ſolar time; the driving-wheels and pinions marked 1, 2, 3, 4, fixed on one common arbor, and their correſponding driven wheels *d*, *e*, *b*, *a*, with each a ſeparate tube to carry the four planetary balls, are $\frac{39}{69}$, $\frac{27}{96}$, $\frac{18}{129}$, and $\frac{8}{134}$, exactly as in the ſatellitian before deſcribed, as may be ſeen by a compariſon of the figures 2 and 5 in our plate; but inſtead of uſing the candleſtick, with an arm to carry the ſocket round an ecliptic plate for adjuſtment of the place of Jupiter's ſhadow at any time, the author before us has added ſeveral wheels for giving an annual motion to the ecliptic plate, and for giving Júpiter's periodic and ſynodic periods, in order that the place of the ſhadow may have a ſelf-adjuſtment; which additions we allow to be Janvier's own invention, as applied to his complex trains in the ſphere, agreeably to Berthoud's deſcription. Many of theſe wheels, however, lie ſo behind one another, that they are not attempted to be exhibited to view in the figure, but we will endeavour to explain their ſituations and uſes, together with a table of the numbers originally uſed, and of others ſince propoſed by the author to be ſubſtituted in ſome future conſtruction, where great accuracy may be preferred to ſimplicity. The contrate wheel *p*, actuating the wheel 3, of 27 teeth, muſt itſelf neceſſarily have a ſimilar number, in order to make the common arbor, that takes the *hour-hand*, revolve in a natural day, though it is not explained ſo in the original account; but it is ſaid that the pinion of 8 leaves, marked 1, drives a wheel, C, behind it, which is not ſhewn, and which revolves in ſeven days, that its arbor may take the *week-hand;* this muſt therefore have fifty-ſix teeth, as in the ſatellitian: again, a pinion on the arbor of this wheel C drives a wheel D, alſo unſeen, while a ſecond pinion on its arbor drives the wheel E once round in a year; but as the numbers of teeth of thoſe wheels are not given, we cannot be certain whether the year conſiſts of 365 or $365\frac{1}{4}$ days. This wheel E, which is ſeen concentric with the four tubed wheels, above the fixed plate or bridge A B, has a tube, that ſurrounds the canon or tube of the ſaid bridge; and thus moves, like the minute-hand of a watch, free from the friction of the interior tubes. Again, the annual wheel E impels a wheel F, not ſhewn, diametrically oppoſite the former wheel D, which therefore muſt be conceived to be placed to the left of the ſaid wheel E, behind the arbor of the piece *t t*; then a pinion *e*, on the lower end of the arbor of the wheel F, alſo unſeen, drives the wheel G round once in Jupiter's ſynodic period, which is ſtated in Janvier's work to be $398^d\ 19^h\ 12^m\ 54^s$, though he has not given the data for making the computation. Berthoud, however, informs us, that this train is $\frac{158}{61}\times\frac{132}{6}$, which information enables us to infer that wheel E has 61 teeth, wheel F 158, pinion *e* 6, and wheel G 132; but in the calliper aſſigned to this train the numbers could not by any means be ſo high, and yet as the pinion 6 could not well be ſmaller, the wheels would not admit of diminution otherwiſe than by ſubſtitution of a ſmaller number than 61 for wheel E, which however is of the ſame diameter as the wheel under it of 134 teeth. It appears, therefore, pretty clearly, that the machine before us is only a *project*, that was never realized, except in the inventor's imagination; and one of his expreſſions, which we ſhall preſently notice, convinces us that this is the caſe, though he has publiſhed a deſcription of it as being actually conſtructed. Above wheel G, and on its arbor, is faſtened the pinion H, that actuates the wheel I on a parallel arbor, at the upper end of which is pinion *k* driving the indented ring M M, that reſts on the box T T, and is probably kept in its place by fixed rollers. It is this ring, M M, indented on the inner edge, that carries the ecliptic circle attached to it, and the circle of months, ſubdivided into day ſpaces, all which revolve with the velocity of Jupiter's periodic motion; ſo that a hand, reaching from the centre and moving with the annual wheel, ſhews the angular diſtance from Jupiter to the ſun at any time upon this ecliptic circle. In the circular plate *t t*, carried by the arbor of Jupiter's ſynodic period, is a round ſteel pin, aſcending to take hold of a ſlit made in a frame, *v v*, that is moveable round the centre, in order to give the ſaid frame a vibratory motion in each ſynodic period, the quantity of which motion is indicated by a pointer at the remote end of the frame to the right; then a thread, *x x*, ſtretched acroſs the middle of this oblong frame, repreſents the place of Jupiter's ſhadow, and conſtitutes the ſelf-adjuſtment, of which we before took notice. Neither Janvier nor Berthoud has informed us what the numbers of teeth are in wheels H, I, K, and ring M M, which convert a ſynodical into a periodical revolution of Jupiter, but they may be eaſily obtained by our directions given under Numbers *Planetary*.

We come now to examine an aſſertion of Janvier, which we have already alluded to, and which we will quote in his own words; thus, "On voit que, dans la diſpoſition de ce rouage, il n'y a qu'une ſeule roue avec ſa motrice pour exprimer chacune des révolutions des ſatellites. On y peut employer les nombres ſuivans, qui (à l'exception de 39 et 69) ne ſont que des multiples des nombres employés par Roemer (Petri Horrebowii Op. tom. iii. p. 116.)"

On this quotation we have to remark, firſt, that the author ſpeaks of having but one pair of wheels to each ſatellite, which wheels he had previouſly deſcribed by figures and letters of reference only, *as wheels exiſting* in his machine; he then ſays, *one may* (on y peut) employ the following numbers, which are thoſe we have already given, and left the adoption of them ſhould be traced from the ſatellitian, he adds, that they are only multiples of Roemer's numbers, and refers for his authority to the works of Horrebow, which are not very commonly met with, making however an exception of the numbers 39 and 69, as though they were calculated and added by *himſelf!*

Table of the original Trains, as given by Berthoud, in his Deſcription of Janvier's moving Sphere.

Sat.	Trains.	Periods produced.				
1.	$\frac{4}{3}\times\frac{76}{31}\times\frac{181}{98}$ of 24^h	1^d	18^h	28^m	35^s	$37'''$
2.	$\frac{11}{6}\times\frac{13}{6}\times\frac{19}{17}$ of ditto	3	13	17	53	41
3.	$\frac{63}{19}\times\frac{67}{31}$ of ditto	7	3	59	35	33
4.	$\frac{61}{4}\times\frac{78}{71}$ of ditto	16	18	5	4	13

Table of Trains, calculated and recommended by Janvier for an accurate Machine, where ſimplicity is diſregarded.

Sat.	Trains.	Periods produced.				
1.	$\frac{35}{19} \times \frac{49}{51}$ of 24^h	1^d	18^h	28^m	36^s	$22'''$
2.	$\frac{41}{19} \times \frac{56}{34}$ of ditto	3	13	18	1	6
3.	$\frac{63}{19} \times \frac{67}{31}$ of ditto	7	3	59	35	33
4.	$\frac{51}{9} \times \frac{68}{23}$ of ditto	16	18	5	13	$\frac{1}{28}$

The periods that theſe trains are calculated to produce are not ſo accurate as thoſe in the preceding table, but as there are four wheels and pinions fewer, they are more ſimple. The train of the third ſatellite is the ſame in both, and why that of the fourth is not alſo made the ſame, it being more accurate than the one in this table, does not appear, except that 4 is a number too ſmall for a pinion, and the double of it would require the 61 to be 122, which perhaps might be conſidered too large, as compared with the reſt of the wheels that are propoſed for adoption.

Large Satellite-Machine, by the Rev. W. Pearſon.—When we deſcribed *the new orrery for equated motions* in three parts, by the Rev. W. Pearſon, under our article Orrery, we referred the reader for the deſcription of the *third portion,* which conſtitutes an accurate and complete ſatellite-machine by itſelf, to our preſent title; which, therefore, we now proceed to deſcribe, after having detailed the particulars of thoſe contrivances that preceded it. In this machine the motions of the earth, of Jupiter, and of his four ſatellites, are all given with a degree of exactitude that is ſurpriſing, and that leaves nothing further to be wiſhed for in the mechanical repreſentation of the Jovian ſyſtem, as viewed from the earth in motion. A lateral view of the external aſpect of this machine is exhibited in *fig.* 1. of *Plate* XIII. of *Planetary Machines*, but without the feet by which it is ſupported, in order to ſave room in the plate. In this figure, the ſeveral parts, denoted by the letters A, B, C, to I incluſive, are the ſame as are given in *Plate* V., and deſcribed under the head Orrery, which we will therefore juſt enumerate here, without repeating what we have before more minutely explained, and then proceed to deſcribe the parts, peculiar to the Jovian ſyſtem, that have been ſuperadded. A B is the circular top of an inlaid mahogany table, two feet and ſix inches in diameter, carrying a ſilvered plate that contains the large ecliptic, and other divided circles, uſed with the orrery and planetarium, together with a quadruple ſpiral for the months, and day ſpaces, &c. which are of no uſe in the preſent inſtrument, except ſo far as the ecliptic is concerned. C D is the annual bar, in the orrery, that carries the earth and moon, but is here the radius vector of Jupiter, and has a ſlow motion performed on the ſame roller, in the time of his tropical period, as will be further explained preſently. At E, the contrate wheel, 62, of paralleliſm, is made faſt by a thumb-ſcrew to the fixed ſtem, round which the bar, C D, revolves; and the pinion K, receiving motion from this wheel, gives it unaltered to the ſimilar wheel 62, with its teeth pointing upwards, at the remote end of the long horizontal arbor, in order to make the motion retrograde. This laſt wheel is made faſt to a tube, that carries on its ſuperior end the ſmall ecliptic ring I I, that is ſcrewed faſt to the bearing piece of braſs L, which is clamped to the tube in ſuch a way as to admit a wheel to be received by the upper end of an inner tube; which tube, in the orrery, revolves once in a ſolar day, and gives motion to the earth's axis, but is here uſed for another purpoſe. The wheels 73 and 43, held by the cocks F and G, and alſo the pinion 13, belong to the moon's train in the orrery, and are here ſuperfluous; but are ſuffered to remain on the bar C D, to avoid trouble in converting the orrery into a ſatellite-machine. The diurnal train, $\frac{10}{269} \times \frac{10}{26} \times \frac{18}{94}$, which conſtitute an exact ratio between a ſolar day and a ſolar year of $365^d\ 5^h\ 48^m\ 48^s$, is, however, retained, to give motion to the radius vector C D; but as the large central wheel of 269 teeth is made excentric, to produce the earth's equation of the centre in the orrery, a ſimilar wheel as to the number of teeth and dimenſions, but made more excentric to ſuit Jupiter's grand equation, is here ſubſtituted, and converts his mean into the true or equated motion; there being 143 teeth in one ſemicircle, and only 126 in the other. M is a circular box, that contains all the trains employed in producing the motions of the four ſatellites, according to their reſpective velocities; while the paper ſcreen N, attached to the remote ſide of the box, receives the ſhadows of the four little balls, and alſo of Jupiter, as they are projected by a lamp O, that is carried round the ſun, S, in a ſolar year, by means of a train which is not yet deſcribed. This train, which converts Jupiter's tropical period into a ſolar year, is $\frac{22}{111} \times \frac{40}{94}$, and acts above the fixed wheel of paralleliſm thus: the wheel 111, after being ſlided down the ſun's ſtem, which enters its central hole, reſts on three equidiſtant pillars of braſs, that are ſcrewed into the face of the bar C D, and is made faſt to them, in a horizontal poſition, by three ſmall ſcrews, which penetrate the rim. P Q is an arm of braſs, clamped faſt at P to the ſun's ſtem, and having a piece of tube inſerted faſt into its remote end at Q, through which tube the common arbor of pinion 22 and wheel 94 paſſes without ſhake, but ſo as to admit of the arbor's revolution, when the wheel 111 actuates the pinion 22, during the revolving motion of the bar C D, to which wheel 111 is made faſt; then the wheel 94 actuates the laſt pinion 40, together with its ſocket, to which is clamped the arm, or annual bar, that bears the lamp, in place of a ſmall terreſtrial globe. But it has been ſaid that C D, Jupiter's radius vector, moves not according to *mean* but *equated* motion, thereby experiencing alternate accelerations and retardations of angular velocity in each revolution; it was, therefore, neceſſary that ſome contrivance ſhould be introduced to prevent the lamp, or earth's repreſentative, from participating of thoſe irregularities of motion, which otherwiſe would render the ſolar years unequal among themſelves. This effect is obviated by making the wheel 111 an equated wheel, with unequal teeth, of which 59 are in one ſemicircle, and only 52 in the other, to ſuit the excentricity of Jupiter's orbit; but the poſition is the reverſe of Jupiter's excentric wheel of 269 teeth, in order that when one wheel retards, the other may accelerate in the ſame proportion, and *vice verſâ;* by which means the lamp moves with uniform velocity, and might be made to have the earth's equated motion, if the pinion of 40 were large enough to admit of having its teeth *equated, i. e.* rendered gradually *unequal* through each half of the circle; but as the earth's equation is ſmall, the ſynodic period of Jupiter will not be ſenſibly affected by the uniformity of the lamp's motion.

In *fig.* 2. we have given an enlarged ſection of the trains contained in the box, as though the arbors were arranged in a ſtraight line, that we might the better exhibit all the wheels to view; but *fig.* 3, which repreſents a portion of the lid, or cover, will explain the calliper, and at the ſame time ſhew the hands and faces that indicate hours, days, and months. The letters *a b c d*, in *fig.* 2, ſhew the box of nearly its full ſize, into one ſide of which the handle *e* enters, and receives the ſquared arbor of pinion 11, that is aſſumed to have a revolution in 24 ſolar hours. This pinion drives the crown or contrate wheel 47, which at preſent we ſhall no otherwiſe notice than as it tranſmits the ſame motion to the ſecond pinion of 11, that has a vertical arbor bearing the hour-hand on its upper pivot. From this vertical diurnal arbor an annual motion, by the train $\frac{50}{16} \times \frac{69}{7} \times \frac{83}{7}$, is given to the yearly hand in $365^{d}\ 5^{h}\ 48^{m}\ 57^{s}$, which period is accurate enough for the purpoſe of indicating the months only; and the figure explains ſufficiently how two fixed ſtems, inſerted into the under face of the lid, are ſubſtituted for revolving arbors for the wheels 50 and 69, and their attached pinions, which move in pairs looſely round the ſaid ſtems, and come off with the lid. In the next place, we muſt conceive the arbor, bearing the week-hand, to be brought round the centre of the box, ſo near to the diurnal arbor, that the pinion 11, on the latter, may reach and actuate the wheel 77 at the inferior end of the former; which connection will make the weekly arbor to revolve in $\frac{77}{11}$, or 7 days. To this weekly arbor are made faſt the four driving wheels, 57, 29, 29, and 83. Theſe, however, do not act immediately with the four tubed wheels, as in the former ſimple machines, but have each a pair of intermediate wheels made faſt together, and revolving in ſeparate pairs round one common fixed ſtem *f g*, in ſuch a way that the under wheel, in each detached pair, receives the motion from its own wheel on the weekly arbor, and the upper one communicates it in a modified way to its tubed or laſt moving wheel; and in this way the following trains, calculated 19th April 1805, are employed to produce the reſpective ſynodic periods, as given in the ſubjoined table: *viz.*

Sat.	Trains.	Synodic Periods.
1.	$\frac{49}{57} \times \frac{25}{85}$ of 7^{d}	$1^{d}\ 18^{h}\ 28^{m}\ 36^{s}.4086$
2.	$\frac{61}{29} \times \frac{21}{87}$ of ditto	3 13 17 54.4352
3.	$\frac{139}{29} \times \frac{22}{103}$ of ditto	7 3 59 35.8955
4.	$\frac{75}{83} \times \frac{98}{37}$ of ditto	16 18 5 2

The periods here produced approach ſo nearly to thoſe given in the beſt tables, as the reſult of a multiplicity of obſervations, that the errors may be conſidered as nothing.

We proceed now to explain how the annual bar, C D, is converted into Jupiter's radius vector. We have already ſeen that the annual train of the orrery is equal to an exact ſolar year of $365^{d}\ 5^{h}\ 48^{m}\ 48^{s}$, without a remainder; and we have alſo ſeen, under a former article, that the train $\frac{111}{40} \times \frac{94}{22}$, when the motion is taken immediately from a ſolar year, will produce Jupiter's tropical revolution in $4330^{d}\ 14^{h}\ 39^{m}\ 5^{s}$, which is very nearly Jupiter's true period, according to the tables. When this train, therefore, or its equivalent, is connected immediately with the laſt pinion of the annual train, ſo as to render the motion ſlower, its laſt pinion will be that on the arbor of which the handle muſt be inſerted, to actuate the bar C D, now moving with the ſlow motion of Jupiter's tropical period above determined; and the motion will be tranſmitted from this handle, ſo placed on the new daily arbor, through the medium of all the wheels and pinions now united into one train, *viz.* $\frac{111}{40} \times \frac{94}{22} \times \frac{94}{18} \times \frac{26}{10} \times \frac{269}{10}$; but, as in the orrery, the large contrate wheel 269 is fixed by ſcrews to the plane of the table, and therefore does not revolve, but gives motion to the bar on which the train is carried, by means of its reſiſtance to the acting teeth of the laſt pinion 10. It was, however, found convenient to ſubſtitute for $\frac{94}{22}$, its equivalent $\frac{47}{11}$, to prevent the box from being unneceſſarily enlarged. The manner in which the two trains were united, to act in the machine, may be thus explained: the large wheel of 111 teeth, ſeen under the box in *fig.* 1, and alſo under the frame in *fig.* 2, is firſt clamped faſt to the ſuperior end of the ſmall tube, which, in the orrery, revolves in a ſolar day, by means of the pinion 8, fixed at its lower end; then from this wheel, ſuppoſing the handle placed at the annual bar C D, as in the orrery, motion will be communicated to the pinion 40, ſeen alſo in contact with it in both figures; but the arbor of pinion 40 aſcends into the box, and carries on its upper end the crown wheel 47, which is cut and rounded into teeth at the edge alſo, in order that it may impel two pinions of 11 leaves each, one on an horizontal, and the other on a vertical arbor, as repreſented in *fig.* 2. Remove now the handle from the bar C D, where it was employed to produce an annual motion, and inſert it at *e*, on the ſquared end of the horizontal arbor of pinion 11, and aſſume the time of its revolution to be 24 ſolar hours; and then the ſaid bar will perform its revolution in Jupiter's tropical period, agreeably to our calculation above ſtated. Under theſe new circumſtances, the pinion 11 of the vertical arbor, being connected with the ſame wheel 47, will alſo revolve in a natural day; and the wheel 77, which ſtands in *fig.* 2, at a diſtance from it, but which in the box is near enough to act with it, revolves in $\frac{77}{11}$, or 7 days, and carries the *week-hand*. Again: pinion 16, made faſt to the vertical daily arbor that carries the hour-hand, drives, under the lid of the box, the wheel 50 round a ſtud, fixed in the under face of the lid, while its attached pinion 7 drives a ſecond wheel 69 round a ſimilar ſtud, together with its pinion 7, which, in its turn, drives the laſt wheel of the train 83, in a year; and the pivot of this laſt wheel receives the annual hand, which indicates the month in every year, while the day of the week is pointed out by the weekly hand in its own proper circle; the lower end of the laſt wheel's arbor reſts in a pivot-hole, made on a potance in the box.

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5. Their greateſt elongations will be a little before quadrature, when weſt; and after, when eaſt of Jupiter.
6. Hence it will appear, that the ſuperior portion of each orbit is greater than the inferior.
7. Whether to the eaſt or weſt of Jupiter, their motions will be direct in the ſuperior, and retrograde in the inferior parts of their orbits.
8. When paſſing between Jupiter and the earth (lamp), they will tranſit him.
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12. The ſolar ſhadow will appear to alter its ſituation to the right and left of Jupiter, as he approaches to, or recedes from, conjunction or oppoſition.
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15. If a lamp be placed in each ſocket, of different heights, there will be two rows of ſhadows on the ſcreen above one another; one of which will repreſent the heliocentric, and the other the geocentric places of the ſatellites.
16. Hence it will appear, that an eclipſe ſeen from the earth is an occultation ſeen from the ſun.
17. That an eclipſe is never viſible at the ſun.
18. And that the ſhadow of a ſatellite, as ſeen from the earth, falls on Jupiter ſometimes before, ſometimes after, and ſometimes at, its tranſit, according to the relative ſituations of Jupiter, the ſun, and earth.
19. If the ſun's lamp only be ſuffered to remain, and the little balls themſelves be viewed in an oblique direction, the reaſon will be apparent why the ſatellites are ſeen lunated from Jupiter:
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Theſe, and perhaps other phenomena not ſpecified here, will be illuſtrated by the machine in ſo diſtinct a manner, as to convey to a ſpectator, who may compare the apparent motions of the ſhadows to the real motions of the little balls, a clear conception of the relation that the apparent motions of Jupiter's ſatellites, as viewed from the earth with a teleſcope, have to their true circular motions, as viewed by the inhabitants of Jupiter. But though a clear conception may thus be formed by a ſpectator of the true and apparent motions of the ſatellites, as they regard Jupiter himſelf; yet he muſt be informed, that the real track in which they move round the ſun along with Jupiter, the progreſſive centre of their detached ſyſtem, is neither circular nor elliptical, but in a line which croſſes Jupiter's track in a ſinuoſe manner, more or leſs frequently, as their periods are ſhorter or longer. As the velocity of the firſt and ſecond ſatellites exceeds the velocity of Jupiter, they are not only apparently, but really, retrograde in ſome part of every revolution; on which account, their tracks form loops, which are alternately concave, except at their ſtationary points, which project and divide the concave ſpaces. Theſe tracks will eaſily be comprehended, if, while the ſatellites are in motion, Jupiter himſelf be alſo conceived to have a direct motion ſlower than the two firſt, but quicker than the two laſt.

As we think it not improbable that this accurate and comprehenſive machine may be deemed a proper model for the inſtrument-makers to copy, we ſhall conclude our account by ſubjoining a table of dimenſions of the wheel-work, from which the calliper may be determined, and from which the workman may derive all the further information he can want, to enable him to conſtruct a ſimilar machine, ſo far as relates to the contents of the box; and the reſt of the dimenſions may be had under our article ORRERY, where other arrangements of numbers may be ſeen to anſwer the ſame purpoſe in a ſimpler manner, but not with the ſame degree of accuracy.

Wheels.		Diameter in Inches.	Teeth per Inch.
Jupiter	111	3.01	12
	40	1.12	12
	47	1.31	12
	11	0.35	12
	77	1.95	12
Firſt Satellite	57	1.68	11.2
	49	1.46	11.2
	85	2.38	11.6
	25	0.74	11.6
Second ſatellite	29	1.05	9.5
	61	2.11	9.5
	87	2.48	11.4
	21	0.65	11.4
Third Satellite	29	0.59	18.3
	139	2.49	18.3
	103	2.53	14.2
	22	0.57	14.2
Fourth Satellite	83	1.63	16.8
	75	1.46	16.8
	37	0.87	14.3
	98	2.23	14.3
Annual train	16	0.39	15
	50	1.11	15
	7	0.2	15
	69	1.51	15
	7	0.15	15
	83	1.81	15

In this table, allowance is made for the length of the teeth in each wheel, beyond the proportional diameters.

Should any inſtrument-maker wiſh to conſtruct this ſatellite-machine without any connection with the orrery, and conſequently with fewer wheels than are contained in the preceding table, the contriver of it has ſuggeſted the ſubſtitution of the following train, inſtead of a combination of the annual with Jupiter's train, *viz.* $\frac{60}{1} \times \frac{19}{41} \times \frac{356}{16}$ of 7^d, where the machine is large; but where it is ſmall, $\frac{60}{1} \times \frac{19}{41} \times \frac{178}{8}$ of 7^d, the value of which is $4330^d\ 14^h\ 38^m\ 3^s$. He propoſes to have a ſingle ſcrew on the vertical arbor of 7^d, to impel the wheel of 60 on a horizontal arbor; then its pinion 41 will impel the pinion 19 on one end of the long horizontal arbor, while the other pinion 16 takes into the *fixed* central wheel 356, (or the 8 into 178,) at the inner end of the ſaid long arbor; but in all other reſpects, the ſame trains and mechaniſm may be retained that have been explained, and the rejection of four wheels and pinions, which form a part of the orrery, will thus ſimplify the trains, and the communication of motion will be from the arbor of 7^d, inſtead of being taken immediately from the diurnal arbor. Should the large wheel of 356 teeth be made 12 inches in diameter, the hole, into which the arbor of the cutting-machine muſt be inſerted, may be made 0.57 of an inch out of the centre, and then the teeth will be cut with regular variations in their ſize, ſo as to produce Jupiter's equation of the centre; and there will be 189 teeth in one ſemicircle, counted from IX ſigns of anomaly forwards, and only 167 in the other, counted from III; while, notwithſtanding, the ſemicircles on each ſide of the apſide will have equal numbers of teeth, as is now the caſe with the large wheel 269.

On the Rectification.—When the ſatellite-machine is to be uſed for any given time, it will be neceſſary to put it into a ſtate of rectification, or adjuſtment, for that time. Previouſly to doing this, care muſt be taken that the large wheel be clamped down by the ſcrew under the table, which takes hold of the central ſtem beneath, in ſuch ſituation that the *ſmalleſt* teeth are in contact with its pinion, when the index points to Jupiter's *aphelion;* otherwiſe the grand equation, produced in Jupiter's motion by this wheel, correſponding to the principal argument A in the tables, will not be properly applied, and conſequently will do more harm than good. After the ſituation of this wheel is examined, raiſe the pinion from the large wheel by the thumb-ſcrew over it, and turn Jupiter's radius vector, now at

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23. And, laſtly, why the ſatellites, as ſeen from the earth, do not eclipſe one another.

Theſe, and perhaps other phenomena not ſpecified here, will be illuſtrated by the machine in ſo diſtinct a manner, as to convey to a ſpectator, who may compare the apparent motions of the ſhadows to the real motions of the little balls, a clear conception of the relation that the apparent motions of Jupiter's ſatellites, as viewed from the earth with a teleſcope, have to their true circular motions, as viewed by the inhabitants of Jupiter. But though a clear conception may thus be formed by a ſpectator of the true and apparent motions of the ſatellites, as they regard Jupiter himſelf; yet he muſt be informed, that the real track in which they move round the ſun along with Jupiter, the progreſſive centre of their detached ſyſtem, is neither circular nor elliptical, but in a line which croſſes Jupiter's track in a ſinuoſe manner, more or leſs frequently, as their periods are ſhorter or longer. As the velocity of the firſt and ſecond ſatellites exceeds the velocity of Jupiter, they are not only apparently, but really, retrograde in ſome part of every revolution; on which account, their tracks form loops, which are alternately concave, except at their ſtationary points, which project and divide the concave ſpaces. Theſe tracks will eaſily be comprehended, if, while the ſatellites are in motion, Jupiter himſelf be alſo conceived to have a direct motion ſlower than the two firſt, but quicker than the two laſt.

As we think it not improbable that this accurate and comprehenſive machine may be deemed a proper model for the inſtrument-makers to copy, we ſhall conclude our account by ſubjoining a table of dimenſions of the wheel-work, from which the calliper may be determined, and from which the workman may derive all the further information he can want, to enable him to conſtruct a ſimilar machine, ſo far as relates to the contents of the box; and the reſt of the dimenſions may be had under our article Orrery, where other arrangements of numbers may be ſeen to anſwer the ſame purpoſe in a ſimpler manner, but not with the ſame degree of accuracy.

Wheels.		Diameter in Inches.	Teeth per Inch.
Jupiter	111	3.01	12
	40	1.12	12
	47	1.31	12
	11	0.35	12
	77	1.95	12
Firſt Satellite	57	1.68	11.2
	49	1.46	11.2
	85	2.38	11.6
	25	0.74	11.6
Second ſatellite	29	1.05	9.5
	61	2.11	9.5
	87	2.48	11.4
	21	0.65	11.4
Third Satellite	29	0.59	18.3
	139	2.49	18.3
	103	2.53	14.2
	22	0.57	14.2
Fourth Satellite	83	1.63	16.8
	75	1.46	16.8
	37	0.87	14.3
	98	2.23	14.3
Annual train	16	0.39	15
	50	1.11	15
	7	0.2	15
	69	1.51	15
	7	0.15	15
	83	1.81	15

In this table, allowance is made for the length of the teeth in each wheel, beyond the proportional diameters.

Should any inſtrument-maker wiſh to conſtruct this ſatellite-machine without any connection with the orrery, and conſequently with fewer wheels than are contained in the preceding table, the contriver of it has ſuggeſted the ſubſtitution of the following train, inſtead of a combination of the annual with Jupiter's train, *viz.* $\frac{60}{1} \times \frac{19}{41} \times \frac{356}{16}$ of 7^d, where the machine is large; but where it is ſmall, $\frac{60}{1} \times \frac{19}{41} \times \frac{178}{8}$ of 7^d, the value of which is $4330^d\ 14^h\ 38^m\ 3^s$. He propoſes to have a ſingle ſcrew on the vertical arbor of 7^d, to impel the wheel of 60 on a horizontal arbor; then its pinion 41 will impel the pinion 19 on one end of the long horizontal arbor, while the other pinion 16 takes into the *fixed* central wheel 356, (or the 8 into 178,) at the inner end of the ſaid long arbor; but in all other reſpects, the ſame trains and mechaniſm may be retained that have been explained, and the rejection of four wheels and pinions, which form a part of the orrery, will thus ſimplify the trains, and the communication of motion will be from the arbor of 7^d, inſtead of being taken immediately from the diurnal arbor. Should the large wheel of 356 teeth be made 12 inches in diameter, the hole, into which the arbor of the cutting-machine muſt be inſerted, may be made 0.57 of an inch out of the centre, and then the teeth will be cut with regular variations in their ſize, ſo as to produce Jupiter's equation of the centre; and there will be 189 teeth in one ſemicircle, counted from IX ſigns of anomaly forwards, and only 167 in the other, counted from III; while, notwithſtanding, the ſemicircles on each ſide of the apſide will have equal numbers of teeth, as is now the caſe with the large wheel 269.

On the Rectification.—When the ſatellite-machine is to be uſed for any given time, it will be neceſſary to put it into a ſtate of rectification, or adjuſtment, for that time. Previouſly to doing this, care muſt be taken that the large wheel be clamped down by the ſcrew under the table, which takes hold of the central ſtem beneath, in ſuch ſituation that the *ſmalleſt* teeth are in contact with its pinion, when the index points to Jupiter's *aphelion;* otherwiſe the grand equation, produced in Jupiter's motion by this wheel, correſponding to the principal argument A in the tables, will not be properly applied, and conſequently will do more harm than good. After the ſituation of this wheel is examined, raiſe the pinion from the large wheel by the thumbſcrew over it, and turn Jupiter's radius vector, now at liberty, till the index points to its heliocentric place in the large ecliptic circle, and then lower the pinion again into action. In this ſituation Jupiter will be rectified. In the next place, raiſe the pinion 40, with its tube and attached annual bar, from its place of action; and having examined that the *large* teeth of wheel 111 point towards the ſame diſtant object, when it is made faſt, that the *ſmall* teeth of the large wheel do, turn the annual bar and earth, or lamp, till it points to that degree of the large ecliptic circle, which is juſt oppoſite the ſun's place for the given day, and then lower the pinion again into action with the wheel 94, and the earth's place will be adjuſted for mean motion; when the lamp may be lighted, and ſcrewed into the hole of the annual bar near the ſun, in order that the geocentric places of the ſhadows may be properly rectified; after which, the little earth may be ſcrewed on the remote end of the ſaid annual bar, where the eye of the obſerver muſt always be ſuppoſed to be ſtationed, to view the appearances that will take place when the machine is uſed. The braſs ball, or ſecond lamp, may be ſcrewed on the central ſtem, to repreſent the ſun, according to circumſtances. The next adjuſtment is of the ſmall ecliptic plate I I, under the box, which muſt be clamped to the top of the tube of parallelism, in ſuch a ſituation, that a thread ſtretched from the ſun to Jupiter will ſhew Jupiter's heliocentric place, as indicated on the large ecliptic; in which poſition the thread, again ſtretched from the earth to Jupiter, will alſo ſhew his geocentric place. When the ſmall ecliptic plate is thus clamped, it will turn with the velocity of Jupiter in his tropical revolution, but in a retrograde direction; and will, therefore, preſerve its paralleliſm to its original poſition, during its whole revolution, along with Jupiter, round the ſun. The hands for the month, day, and hour, muſt next be put to the time of an eclipſe of the firſt ſatellite next preceding the given day, and the arm of this ſatellite clamped, ſo that the little ball may be hid in the notch of the conical ſhadow; then turn forwards the handle to the time of an eclipſe of the ſecond ſatellite, and do the ſame with its ball; and alſo with thoſe of the third and fourth ſatellites, as they may occur, when they will be rectified; and the handle being turned back a little beyond the time given, and then forwards to the exact time, to avoid the effect of a little unavoidable ſhake in the teeth, the configurations on the ſcreen will be truly repreſented, and a continued ſucceſſion of turns will produce all the changes of phenomena which we have above deſcribed. Should a Nautical Almanac not be at hand for ſhewing the exact times of emerſions or immerſions, the tables which we have given may be conſulted either for the *eclipſes* or *configurations*, as the rectification or nature of the problem to be illuſtrated may require.

SATER, in *Geography*, a town of Sweden, in the province of Dalecarlia, near which are ſome rich copper mines; 45 miles S.W. of Geffle.

SATERAM, a town of Hindooſtan, in Myſore; 15 miles S. of Seringapatam.

SATGONG, or SATAGONG, a village of Bengal, on the river Hoogly, formerly a conſiderable city with great trade; 4 miles N.W. of Hoogly.

SATI, in *Hindoo Mythology*. See SUTTEE.

SATILE', in *Geography*, a town of Africa, in Bambara; 160 miles W.N.W. of Sego.

SATILLA, *Great* and *Little*, two rivers of America, in the ſtate of Georgia, which fall into the ocean in Camden county, between the Alatamcha and St. Mary's river, N. lat. 31° 5'. W. long. 81° 36'.

SATILLIEU, a town of France, in the department of the Ardeche, and chief place of a canton, in the diſtrict of Tournon; 12 miles N.N.W. of Tournon. The place contains 2024, and the canton 8554 inhabitants, on a territory of 185 kiliometres, in 10 communes.

SATILPOUR, a town of Hindooſtan, in Guzerat; 45 miles N.W. of Radunpour.

SATIO, in *Ancient Geography*, a town of Macedonia, on the banks of the lake Lychnidus, according to Polybius.

SATIRE, in *Literature*, a term which ſignifies all manner of diſcourſe, in which any perſon is reprehended; but more particularly a poem, in which men's follies and vices are wittily expoſed, in order to their reformation.

SATIRE, *Proper*, is diſtinguiſhed by the generality of the reflections from a lampoon, which is aimed at a particular perſon; but they are frequently confounded.

The origin of the word has been the occaſion of conſiderable diſpute among the critics. The common opinion, ſupported by Scaliger, Heinſius, and Voſſius, deduces it from the Greek Σατυροι, *Satyrs*, a ſort of ſylvan deities, by the Romans called *Fauni*, to whoſe petulancy and wantonneſs this ſort of compoſition is ſuppoſed to bear ſome reſemblance. On which ground ſatire is conſidered as a poem of a wanton and licentious nature, which, like the Satyrs, turns things upſide down to find occaſion for cenſure and ridicule.

Caſaubon, on the contrary, followed by Spanheim and Dacier, derives the Roman ſatyr from the Latin *ſatur*, uſed for *plenum*, *full*, a thing to which nothing is wanting; whence came *ſatura*, written alſo *ſatira*, which, being an adjective, refers to a ſubſtantive underſtood, *viz. lanx*; *ſatura lanx* being the name of a baſon filled with all manner of fruits, which the Romans offered yearly to Ceres and Bacchus as their firſt-fruits.

The word *ſatura* was afterwards applied to other mixtures, and at length transferred to works of genius; thus *leges ſaturæ* denoted laws conſiſting of many heads or titles. Upon the whole, it is inferred, that the ſatirical pieces of the poets were ſo called, as being various and miſcellaneous compoſitions: on this principle it is urged, that the word ſhould be written in Latin with an *u* or *i*, and in Engliſh only with an *i*; whereas thoſe who write it with a *y*, do it on the ſuppoſition that the ſylvan Satyri gave name to this compoſition, which Caſaubon endeavours to diſprove, by ſhewing, that from *ſatyrus* muſt be formed *ſatyrica*, and not *ſatyra*, and by explaining the great difference between the Greek *ſatyric* poems and the Roman ſatire.

However, ſatirical poetry, according to Scaliger, may be naturally enough deduced from the wantonneſs of the ſatyrs; and this opinion is confirmed by conſidering that Σατυριϛης is rendered in ancient gloſſes by *ludio*, and *ſatirical* by *ludicrous*, *ſportive*, &c. Thus Seneca's ſatire is called *ludus*, and Horace and Perſius uſe *ludere* for *ſcribere ſatyras*.

Satire bears a near affinity to raillery, ridicule, lampoon, libel, &c. and ſtands oppoſed to panegyric. The reaſon why ſatires generally pleaſe, and panegyrics tire the readers, ſeems to be, becauſe the former are commonly true, and the latter falſe.

Critics have not agreed concerning the origin of ſatire. It ſeems at firſt, ſays Dr. Blair, to have been a relic of the ancient comedy, written partly in proſe, partly in verſe, and abounding with ſcurrility. Ennius and Lucilius corrected its groſſneſs; and at laſt Horace brought it into that form, which now gives the denomination to ſatirical writing. As the manners and characters which occur in ordinary life are the ſubjects of ſatires, as well as epiſtles, they require to be treated with ſomewhat of the eaſe and freedom of converſation, or in a more familiar ſtyle than ſolemn philoſophical poetry; hence it is commonly the "Muſa pedeſtris" which reigns in ſuch compoſitions.

The end which ſatirical writing profeſſes to have in view is reformation of manners; and in accompliſhing this end, it aſſumes the liberty of boldly cenſuring vice, and vicious characters. Accordingly it has been purſued in three different modes, by the three great ancient ſatiriſts, Horace, Juvenal, and Perſius. Horace's ſtyle has not much elevation. He calls his two books of Satires, indifferently either *ſermones* or *ſatyræ*, two words which, at firſt ſight, preſent very different ideas. He ſeems not to have intended riſing much higher than proſe put into numbers. His manner is eaſy and graceful. They are rather the follies and weakneſſes of mankind, than their enormous vices, which he chooſes for the object of his ſatire. He reproves with a ſmiling aſpect; and while, ſays Dr. Blair, he moralizes like a ſound philoſopher, he diſcovers, at the ſame time, the politeneſs of a courtier. Juvenal is much more ſerious and declamatory. He has more ſtrength and fire, and more elevation of ſtyle, than Horace; but is greatly inferior to him in gracefulneſs and eaſe. His ſatire is more zealous, more ſharp and pointed, as being generally directed againſt more flagitious characters. As Scaliger ſays of him, "ardet, inſtat, jugulat;" whereas Horace's character is "admiſſus circum præcordia ludit." Thus alſo Dryden, in his "Origin and Progreſs of Satire," diſtinguiſhes between Juvenal and Horace. Vice, he ſays, is the quarry of the former; folly of the latter. Perſius has a greater reſemblance of the force and fire of Juvenal, than of the politeneſs of Horace. He is diſtinguiſhed for ſentiments of noble and ſublime morality. He is a nervous and lively writer; but withal, often harſh and obſcure.

Among the modern ſatiriſts we may reckon Regnier and Boileau in French; and Dryden, Oldham, Rocheſter, Buckingham, Wycherley, Pope, Young, &c. in Engliſh.

A ſatire ought to be lively, pleaſant, moral, and full of variety; in theſe reſpects Juvenal and Horace excelled, though their ſatires ought not to be read without caution. Among the qualifications requiſite in a ſatiriſt, one of the moſt eſſential is good-nature, all the ſentiments which are beautiful in this way of writing muſt proceed from that quality in the author. Good-nature produces that diſdain of all baſeneſs, vice, and folly, which prompts the poet to expreſs himſelf with ſmartneſs againſt the errors of men, but without any bitterneſs towards their perſons. It is this quality which keeps the mind in equanimity, and never lets an offence unſeaſonably throw a man out of his character.

In all the writings of Horace and Juvenal, there is not one ill-natured expreſſion; not one ſentence of ſeverity, which does not apparently proceed from the contrary diſpoſition. Tatler, N° 242.

Satire may be divided, with regard to the meaſure and kind of verſe, as well as the manner of the poem, and the character, into narrative, dramatic, mixed, &c.

Narrative, is a ſimple narration or recital of abuſes in the poet's own perſon. Such is the firſt of Juvenal.

Dramatic, is that in which ſeveral perſons diſcourſe together, whether they be nameleſs, as in the firſt of Perſius, or have names, as of Catius and Damaſippus.

Mixt, is a compound of both the former; as that fine one of Horace, *Ibam forte via ſacra*.

Grave, and animated, which inveigh with warmth and earneſtneſs againſt corruption, and vice in every ſhape; as thoſe of Juvenal and Perſius.

Sportive, and lighter, which ſeem to play with men's follies, but in playing omit no opportunity of making them feel the laſh. Such are thoſe of Horace, which are hence ſaid to be *ſermoni propiora*.

The *grave* ſort brandiſhes a naked ſword; the *ſportive* preſents a thyrſus, like that of the ancient Satyrs, ſurrounded with vine leaves, with which it ſtabs unawares. The heat of the former ſometimes degenerates into fury and indignation; and the calmneſs of the latter ſometimes ſinks into mere raillery; but between the two extremes are many intermediate ſpecies and degrees. The former, eſpecially when dictated by paſſion, is much the eaſieſt; nothing is more difficult than to make people of taſte laugh, even at the expence of others. The attainment of this muſt be the fruit of genius and talents rather than of rules; perhaps it may be unneceſſary to explain either, ſince vanity, ſelf-love, and even malice, are maſters, more than ſufficient for a poet who wants not wit and judgment. Thus Juvenal, *ſi natura negat, facit indignatio verſum;* and Boileau, *La colère ſuffit et vaut un Apollon.*

In peruſing the writings of the two leaders of the two ſorts of ſatire laſt-mentioned, it may not be unneceſſary to conſider, that they lived in very different times; Horace was intimate with a prince of the greateſt goodneſs and humanity, and his court was formed after his example; and, therefore, the faults which the poet notices, were little inconſiſtencies in behaviour, falſe pretences to politeneſs, or impertinent affectations of what men were not fit for; vices of a coarſer ſort could not come under his conſideration, or enter the palace of Auguſtus.

Juvenal, on the other hand, lived under Domitian, in whoſe reign every thing great and noble was baniſhed from the habitations of men in power; therefore he attacks vice as it paſſes by in triumph, not as it breaks into converſation. The fall of empire, contempt of glory, and a general degeneracy of manners, are before his eyes in all his writings. In the days of Auguſtus, to have talked like Juvenal had been madneſs, or in thoſe of Domitian like Horace. Morality and virtue are every where recommended in Horace, as became a man in a polite court, from the beauty, propriety, and convenience of purſuing them; vice and corruption are attacked by Juvenal in a ſtyle which denotes that he fears he ſhall not be heard, unleſs he calls to them in their own language, with a barefaced mention of the villanies and obſcenities of his contemporaries. Tatler, N° 242.

The Italians divide ſatire into *ſerious*, as that in common uſe; and *jocoſe*, *giocoſa*, which they alſo call *berneſca*, and we *burleſque*.

Their chief ſatiriſts in the ſerious way are Dante (whom they particularly call *principe ſitirico*), Arioſto, Aretine, Ercole Bentivoglio, Luigi Alamanni, Jacobo Soldani, Lorenzo Azzolino, Salvator Roſa, Lun. Adimari, and Benedetto Menzini. Thoſe who have excelled in the jocoſe kind are, Franceſco Berni (the inventor of it), Mauro, Firenzuola, Caſa, Coppetta Varchi Laſca, Caporali, &c.

Satire is divided into *general*, which is levelled at common abuſes, in which numbers are equally intereſted; and *perſonal*, which points out and expoſes particular characters, more properly called *lampoon*. This laſt, as it affects men's reputation, on which their intereſt greatly depends, is ſcarcely diſtinguiſhable from defamation and ſcandal.

To this laſt claſs belong moſt of thoſe which bear the title of *anti;* as the Anti-Baillet of Menage, with which M. Baillet was ſo ſtung, that he compoſed a treatiſe expreſs on perſonal ſatires, which bear the title *anti;* to ſhew the immorality and unlawfulneſs of them, and their contrariety to the precepts of the Goſpel.

It is farther objected to this kind of ſatire, that a public detection, far from producing the effect it is deſigned for, reformation, is apt to drive men to deſperation, and harden them in their courſe. The excellent author of the "Treatiſe of the Government of the Tongue," ſpeaking of uncharitable truths, ſays, a diſcovery of this kind ſerves not to reclaim, but only to enrage the offender, and precipitate him into farther degrees of ill. Modeſty, and fear of ſhame, is one of thoſe natural reſtraints which the wiſdom of heaven has put on mankind; and he who once ſtumbles, may yet, by a check of that bridle, recover himſelf again. But when, by a public detection, he is fallen under that infamy he feared, he will be then apt to diſcard all caution, and to think he owes himſelf the utmoſt pleaſures of vice at the price of his reputation. Nay, perhaps, he advances farther, and ſets up for a reverſed ſort of fame, by being eminently wicked; thus he, who before was but a clandeſtine diſciple, becomes a doctor of impiety. Doubtleſs it was this ſort of reaſoning that induced our wiſe legiſlators to repeal the law which put the brand of infamy in the face of felons. In effect, where crimes are enormous, the delinquent deſerves little pity, yet the reporter may deſerve leſs. Vide Tatler, N° 74—76.

SATIRE, *Greek.* Caſaubon makes a diſtinction between the ſatirical poetry of the Greeks, and the ſatire of the Romans, which he maintains was peculiar to themſelves; in which alſo he ſeems to be juſtified by Quintilian. Inſt. Or. lib. x. cap. 1.

For a like reaſon Horace, Sat. i. lib. 2. v. 62. calls ſatire, *Græcis intactum carmen,* a ſort of poetry unknown to the Greeks. Spanheim, in his fine preface to the Cæſars of the emperor Julian, has ſhewn five or ſix eſſential differences between thoſe two poems. The Greeks chiefly reprehended vice, &c. in their dramas, though they had alſo a ſort of narrative poems called *ſilli,* like the Roman and our ſatires. Theſe ſilli were cutting or ſarcaſtic poems, as may be eaſily ſeen by the fragments of Timon's ſilli, with this difference, that the Greek ſilli were parodies from one end to the other, which cannot be ſaid of the Roman ſatire; or, if we find ſometimes a parody in them, it is what the poet did not deſign, and conſequently the parody does not make the eſſence of ſatire, as it does that of the ſilli.

Scaliger, notwithſtanding all this, followed by ſome of the lateſt and beſt critics, ſcruples not to derive the ſatirical poetry of the Latins from that of the Greeks. According to theſe authors, ſatire, in its origin, was a ſort of interlude in tragedy, in which goat-footed ſatyrs were introduced to alleviate the diſtreſs, and with their jeers and humour diverſify the ſolemnity of the tragic ſcene; much like the mimes in comedy, and the feſcennines in the Atellan ſports.

At firſt, it was only in the tragedies exhibited in the feaſts of Bacchus, that ſatyrs, the ſuppoſed companions and prieſts of that god, were introduced, but afterwards they made a part in the ſolemnities of the other deities. So that ſatire, in its firſt inſtitution, was wholly dramatic. Vide Scalig. Poet. lib. i. cap. 11 and 12.

SATIRE, *Roman.* Dacier, after Caſaubon, traces the inſtitution of the Roman ſatire very minutely, and diſtinguiſhes three ſpecies or ſtates of it; the firſt *dramatic,* the ſecond *narrative,* the third that which was called the *Varronian,* or *Menippean* ſatire.

The ancient Romans had been without any ſcenical entertainments for almoſt four hundred years, till chance and merriment, in one of their feſtivals, gave riſe to the Saturnine and Feſcennine verſes, which, for ſome years, ſupplied the place of theatrical performances. Theſe verſes were rude, and without any meaſure, being extemporary, and the productions of a ſavage people, who had no other inſtructors than the fumes of wine. Accordingly they were ſtuffed with groſs railleries, and accompanied with various geſticulations and dances. An idea of them may be formed by conceiving a knot of country fellows dancing in an hobbling manner, toſſing about their home-ſpun jokes, and expoſing each other's failings. Thus Horace, Epiſt. I. lib. ii.

> " Feſcennina per hunc inventa licentia morem
> Verſibus alternis opprobria ruſtica fudit."

The ancient Roman ſatires, therefore, were a ſort of innocent farces, where the ſpectators and actors were indifferently rallied. And thus they continued till the time of Livius Andronicus, who firſt attempted to write plays in imitation of the Greeks. This new entertainment, appearing more noble and perfect, drew crowds of ſpectators, which occaſioned the ſatires to be neglected for ſome time, but they were afterwards reſumed, and tacked to the ends of comedies, much like the modern farces. They were annexed more peculiarly to the Atellan pieces, and, on this occaſion, they changed their name ſatires for that of *exodia,* which they ever after retained.

After Livius Andronicus, Ennius, having obſerved the eagerneſs of the Romans for ſatire, imagined that poems not accommodated to the theatre, but retaining the gall, raillery, and pleaſantry, of the theatrical ſatire, would not fail of ſucceſs. Accordingly, he wrote diſcourſes under the title of ſatires, in which he took the liberty of mixing ſeveral ſorts of verſe together, as hexameters with iambic trimeters, and trochaic tetrameters. In theſe pieces were found the ſame variety, raillery, alluſions, fables, and even dialogue, in a word, every thing that conſtituted the character and beauty of the firſt ſatires, except the dancing and muſic. Pacuvius ſucceeded, who alſo wrote ſatires in imitation of his uncle, or, grandfather Ennius. When Pacuvius was in his prime, Lucilius was born, who alſo compoſed ſatires, ſomewhat of a new turn, endeavouring to imitate that character of the ancient Greek comedy, of which the Romans had but an imperfect image in their own ſatires. This ſeems to be what Horace meant, when he ſaid, Satir. I. lib. ii.

> " ———— Quid? cum eſt Lucilius auſus
> Primus in hunc operis componere carmina morem."

He could not mean, that the Romans had no ſatires before Lucilius, ſince that poet was preceded by Ennius and Pacuvius, whom he imitated. Horace's deſign was only to hint, that Lucilius's manner and turn were new; that he had embelliſhed this poem, inſomuch that he might be looked upon as its firſt author. But, in fact, Lucilius only added to it a little more politeneſs and ſalt, without any other alteration. And though, like Ennius, he did not mix together ſeveral ſorts of verſe in the ſame piece, yet he compoſed different poems, ſome of which were entirely hexameter, others iambic, and others trochaic, as appears from his fragments.

The third kind of ſatire was the *Varronian* or *Menippean,* ſo called from its author Varro, the moſt learned of the Romans, and becauſe in this he imitated the manner of Menippus the Gadarenian, a Cynic philoſopher.

This ſatire was not only a miſcellany of different ſorts of verſe, but was alſo interlarded with proſe, and mixed up Greek and Latin. Seneca's poem on the death of Claudius, Petronius's Satyricon, Lucian's Dialogues, the Golden Aſs of Apuleius, and the Cæſars of the emperor Julian, are ſo many ſatires in the Varronian taſte. To the ſame head may alſo be referred the Catholicon of Spain, the Moriæ Encomium of Eraſmus, the Don Quixote of Cervantes, the Advertiſements from Parnaſſus of Boccalini, the Tale of a Tub by Dr. S. &c. V. Dacier Diſcours ſur la Satire, in Mem. de Liter. de l'Acad. R. des Inſcr. tom. iii. p. 246, ſeq. And in the preface to his verſion of Horace's Satires. V. Rapin Reflex. ſur la Poet. en Partic. § 28. Œuv. Diverſ. tom. ii. p. 205, ſeq.

SATIRIC Fountain. See Fountain.

SATIRICAL, ſomething relating to, or that partakes of, the nature of ſatire.

We have ſatirical poets; ſatirical preachers, as South; ſatirical hiſtorians, as Burnet and Mezeray; ſatirical philoſophers, as Apuleius and Montaigne. In the Heathen theology, we find a ſatirical god, *viz.* Momus: Homer, in his Therſites, gives the character of a ſatirical courtier. The Dutch have been often charged with ſatirical prints and medals, which have ſometimes coſt them dear. Satirical poetry had its origin at Athens, though its perfection be owing to the Romans. According to father Mourgues, and Bianchini, it was at firſt a ſort of tragedy acted at the feaſt of Bacchus, wherein ſatires were introduced converſing with heroes. Burette rather takes it for a ſort of paſtoral farce tacked to the ends of tragedies. One of the chief ornaments of it was a wild, groteſque ſort of dance performed by ſatyrs, and called *ſicinnis*. See Dancing.

The ſatirical ſhows of the Greeks were abſolute maſquerades; the actors herein were diſguiſed variouſly, ſome in the habits of Satyrs, Sileni, Centaurs, Mænades, and other of Bacchus's crew: while others perſonated giants, cyclopes, monſters, and even beaſts; the whole making a medley more romantic and extravagant than any thing on the modern ſtage, unleſs perhaps ſome of our late groteſque pantomime entertainments. The only piece of the kind now extant is the ΚΥΚΛΩΨ of Euripides.

SATIRIST, a writer of *ſatire*; which ſee.

SATIRORUM Promontorium, the *point of Camboja*, in *Ancient Geography*, an Indian promontory in the country of the Sines, according to Ptolemy: it bounded the "Sinus Magnus" on the eaſtern ſide.

SATIROVA, in *Geography*, a town of Ruſſia, in the government of Perm; 24 miles N. of Solikamſk.

SATISANAGARA, a town of Hindooſtan, in Marawar; 7 miles W. of Tripatore.

SATISDATO, or Stipulatio, in the *Roman Law*, anſwers to our *bail above*, and was mutually given by each litigant party to the other; by the plaintiff, that he would proſecute his ſuit, and pay the coſts if he loſt his cauſe, in like manner as our law ſtill requires nominal pledges of proſecution from the plaintiff; and by the defendant, that he would continue in court and abide the ſentence of the judge, much like our ſpecial bail, with this difference, that the fide juſſores were there abſolutely bound, judicatum ſolvere, to ſee coſts and condemnation paid at all events; as our ſpecial bail may be diſcharged by ſurrendering the defendant into cuſtody, within the time ordered by law; for which purpoſe they are at all times intitled to a warrant to apprehend him.

SATISFACIENDUM, Capias ad. See Capias.

SATISFACTION, in *Law*, is uſed for the giving of recompence for an injury done; or the payment of money due on bond, judgment, &c. In which laſt it muſt be entered on record.

Satisfaction, in *Theology*, is defined to be, that which being done or ſuffered either by an offending creature himſelf, or by another perſon for him, ſhall ſecure the honour of the divine government, in beſtowing upon the offender pardon and happineſs. This ſenſe of the word ſatisfaction is agreeable to the uſe of the word in the Roman law, where it ſignifies to content a perſon aggrieved, and is put for ſome valuable conſideration, ſubſtituted inſtead of what is a proper payment, and conſiſtent with a remiſſion of that debt or offence, for which ſuch ſuppoſed ſatisfaction is made. In this ſenſe Chriſt is ſaid by many divines to have made ſatisfaction for the ſins of the penitent and ſincerely obedient.

Thus the learned Dr. Clarke (Serm. 137. Works, vol. ii. p. 135, fol.) explains ſatisfaction. The death of Chriſt, he ſays, was truly and properly an expiatory ſacrifice, and in the fulleſt ſenſe a perfect and ſufficient ſatisfaction for the ſins of the whole world:—ſatisfaction, not as an equivalent, without which God would not and with which he could not but pardon ſin; for the ſcripture no where ſpeaks of ſatisfaction in that ſenſe, as ſome have erroneouſly conceived; but as an atonement which the wiſdom and goodneſs of God were pleaſed freely to appoint and freely to accept, as ſupreme governor of the univerſe.

Mr. Emlyn (ſee his "Tracts") argues, that the term ſatisfaction in a legal ſenſe is wholly unſcriptural. Divine juſtice, ſays this writer, does not require an equivalent ſatisfaction in order to pardon ſin; neither do the threatenings of the law require it, nor the ends of divine government, *i. e.* the honour of God and a regard to his laws, which are provided for without it, by limiting the condition of free pardon and ſalvation, ſo that none can partake of it but thoſe who repent and forſake their wickedneſs, and ſincerely ſubmit to his laws, while the reſt are doomed to periſh. Moreover it is alleged, that Chriſt did not make ſuch ſatisfaction; for he did not ſuffer proper puniſhment, and what he ſuffered was not a full equivalent to ſtrict juſtice: and ſuppoſing an equivalent puniſhment to be requiſite, it would not thence follow that it muſt be infinite, becauſe ſin, though exceeding evil, is not infinite, and infinite ſatisfaction cannot be made by infinite puniſhment.

Grotius, Stillingfleet, and other learned men, ſays Ben Mordecai (Letter V.) have defended the two following propoſitions, as the fundamental doctrines of Chriſtianity; both which are contrary to the Old Teſtament, and abſolutely *falſe*. Firſt, they aſſert; "that there is a neceſſity of God's vindicating his honour to the world, upon the breach of his laws; if not by the ſuffering of the offenders themſelves, yet by the ſuffering of the Son of God, as a ſacrifice for the expiation of ſin; by undergoing the puniſhment of *our* iniquities:" which appears to me (ſays Mordecai) to be the ſame thing as to aſſert, that God is not able to forgive ſins δωρεὰν, *freely*.

Secondly, that a perſon, notwithſtanding his innocency, may oblige himſelf, by an act of his own will, to undergo that puniſhment, which *otherwiſe* he did not deſerve; which puniſhment in that caſe will be juſt, and agreeable to reaſon. Shall we dare to aſſert, ſays the author, that a juſt and a good God actually *puniſhes* the *innocent*; and yet is not able without, not only the *conſent*, but the *actual ſufferings* of another perſon, to *forgive* the *penitent*? Can forgiving a *penitent* be leſs agreeable to rectitude, than puniſhing the *innocent*? Yet we are confidently told, with great zeal for the honour of God, by theſe moſt learned and reſpectable divines, that God has no ſuch power; except the ſon of God ſhall ſuffer as a ſacrifice for the expiation of ſin, by undergoing the puniſhment of our iniquities. For there is a *neceſſity* of God's vindicating his honour to the world, upon the breach of his laws. Dr. Clarke uſes the word *ſuffered* and not *puniſhed*: he tells us, "when the honour of God's laws had been diminiſhed by ſin, it was reaſonable and neceſſary (notwithſtanding God's power and abſolute right of forgiving; yet in reſpect of his wiſdom in governing the world, it was reaſonable and neceſſary) there ſhould be a vindication of the authority of his laws; and therefore, in that ſenſe of neceſſity, it was *neceſſary*, either that the ſinner ſhould periſh, or ſome other ſatisfaction ſhould be made in his ſtead;" which amounts to an aſſertion, that puniſhment of ſin is *always* neceſſary in the government of the world. But this is not *true;* for it may, for aught we know, be more agreeable in many inſtances to the wiſdom of God in his governing the world to *forgive*, than to *puniſh;* and in all ſuch inſtances puniſhment will not be neceſſary. But this neceſſity is found neither in the nature of things, nor in ſcripture; and therefore there can be no ſuch thing.

Dr. Richie (Peculiar Doctrines of Revelation) conſiders the oblation of burnt-offerings under the patriarchal diſpenſation of religion as inſtituted with a penal view, and that theſe burnt-offerings were the mulcts or fines which were exacted from and levied upon penitent ſinners, for the particular ſins which they had committed, and on account of the culpable part of their moral character or behaviour. This alſo is the idea of piacular ſacrifices, which is exhibited in the Levitical law and other places of the Old Teſtament. They made atonement for penitent ſinners in the ſenſe of conſtituting an union or relation between them and the Deity, and likewiſe in the ſenſe of reſtoring this union or relation after it was diſſolved and interrupted. And they likewiſe preſerved and ſupported an union of relation between the Deity and them, after it was made or reſtored. Moreover, the ſame effects are aſcribed to the death of Chriſt, which are attributed to piacular ſacrifices in the writings of the Old Teſtament. Atonement is an effect aſcribed to piacular ſacrifices in the Old Teſtament, and atonement being aſſigned as the effect of the death of Chriſt in the New Teſtament, atonement muſt be made by this ſacrifice in the ſame ſenſe in which it was made by the legal ſacrifices. Conſequently, this ſacrifice is the means by which an union or relation is *conſtituted*, *reſtored*, and *preſerved* between the Deity and ſuch penitent ſinners as believe in Jeſus Chriſt. The author afterwards proceeds to examine ſeveral notions about the nature of the efficacy of the death of Chriſt, in producing thoſe effects that are aſcribed to it. The firſt ſcheme of redemption which he examines is that which proceeds upon the ſuppoſition of a transfer of ſin and puniſhment from the ſinner to Chriſt, and of a transfer of righteouſneſs from Chriſt to the ſinner. Chriſt, as the ſinner's ſubſtitute, is ſuppoſed to have the ſin of the ſinner transferred or imputed to him, and to ſuffer the puniſhment of that ſin in his ſtead; and, on account of this vicarious puniſhment, the ſinner is ſuppoſed to be pardoned, or diſcharged from all puniſhment. And, on the other hand, the perfect obedience or righteouſneſs of Chriſt is ſuppoſed to be transferred to the ſinner, and imputed to him for his righteouſneſs, as if it had been performed by him, and was his own righteouſneſs: and, on account of this perfect righteouſneſs, thus transferred and imputed, the ſinner is accepted and treated by God as if he was without ſin, and a perfectly righteous perſon. Dr. Richie remarks, that no part of this ſcheme has any ſufficient ſupport from the holy ſcriptures. As to the imputation of the ſins of believers to Chriſt, this, in his opinion, is no where expreſsly affirmed in ſcripture. He examines the two paſſages that are alleged in ſupport of this doctrine. The firſt is 2 Cor. v. 21. "God hath made him to be ſin for us, who knew no ſin," &c. In theſe words, the apoſtle only affirms, that "God made Chriſt ſin for us," but he doth not ſay that he imputed our ſins to him, nor can it be ſo underſtood; becauſe ſin is a perſonal thing, and Chriſt could not be made a ſinner. The true ſenſe, as he conceives, is, that "God made Chriſt a ſin-offering for us," and a ſin-offering doth not imply the imputation of the ſin of the offender to the ſacrifice. The ſecond paſſage is, Iſaiah, liii. 6. "The Lord hath laid on him (the Meſſiah) the iniquity of us all." Theſe words are to be underſtood in the ſacrificial ſenſe; and if the tranſlation be admitted, the meaning is, that "God laid on Chriſt the iniquity of us all," in the ſame ſenſe in which the Jewiſh high-prieſt "put all the iniquities of the children of Iſrael upon the head of the ſcape-goat," Lev. xvi. 21; not in the ſenſe of imputing them to the ſcape-goat, but only in a figurative ſenſe, in order to ſignify that they were "borne," or "carried away," by it, "into a land not inhabited," v. 22. *i. e.* he laid our ſins on Chriſt, that he might take, or carry them away, by obtaining the pardon of them by the ſacrifice of himſelf; or, in other words, laid our ſins upon him, in the ſenſe of appointing his death to be the means by which atonement was made for them, and the remiſſion of them obtained, which ſenſe of the words does not imply that our ſins were imputed to Chriſt. But becauſe the Hebrew verb, הִפְגִּיעַ, has the ſignification of *laid on* in no other place, but commonly ſignifies *to meet*, or to *ruſh in upon*, it ought to have been ſo rendered in this paſſage: "The Lord hath made the iniquity of us all to meet him, or to ruſh in upon him;" and the manner in which the Lord did this is clearly explained in the context, v. 10, by "making his ſoul an offering for ſin." As to the transfer of puniſhment of our ſins to Chriſt, and his ſuffering that puniſhment in our ſtead, there is nothing in ſcripture, ſays our author, that gives any real ſupport or countenance to this way of thinking. Vicarious puniſhment is not eſſential to the idea or nature of piacular ſacrifice, for no piacular ſacrifice made atonement for ſin in the ſenſe of ſuffering the puniſhment of it in the offender's ſtead. Chriſt bore our ſins, in the ſacrificial ſenſe, *viz.* not by ſuffering puniſhment in our ſtead, but by making atonement for them by the ſacrifice of himſelf, and thereby bearing, or carrying and taking away, the puniſhment of them. Moreover, the paſſages of ſcripture, which are ſuppoſed to prove that the perfect obedience or righteouſneſs of Chriſt is imputed to thoſe who believe in him for their righteouſneſs, do not amount, in our author's judgment, to any proof of this point. He adds, that this ſcheme of redemption is, in all its parts, a contradiction to reaſon and common ſenſe, as implying that things are done which are ſelf-contradictory, and naturally impoſſible to be done by any power whatſoever. It ſuppoſes the poſſibility of transferring the actions of one perſon to another; it proceeds upon the ſuppoſition of a transfer of puniſhment from the guilty to the innocent, whereas puniſhment, like guilt, is a perſonal thing; it does not furniſh us with the idea of a piacular ſacrifice; and it is abſolutely inconſiſtent with the rectitude of the divine government.

Another ſcheme of redemption ſuppoſes, that the blood or ſacrifice which Chriſt offered, was the perfect obedience or goodneſs of his life;—that the ſacrifice of Chriſt, conſidered as a moral means, has a natural and ſtrong tendency to render men who are corrupt and wicked, penitent and obedient; and that becauſe the blood or ſacrifice of Chriſt has this tendency, it is a reaſon for granting to the penitent the pardon of their ſins and eternal life. But this ſcheme, as our author apprehends, doth not conſiſt with the idea of ſacrifice of any kind, euchariſtical or piacular.

The author then goes on to ſhew, that the death of Chriſt is exhibited in the New Teſtament, as a true and proper ſin-offering or piacular ſacrifice; and that in the caſe of all penitent ſinners, who believe in Chriſt, his death is a natural and fit mean for anſwering the end and deſign of a piacular ſacrifice; particularly in the production of all thoſe effects which are aſcribed to it in the writings of the New Teſtament. Piacular ſacrifices were mulcts, demanded from penitent ſinners by the Deity, for ſins committed and faultineſs of moral character. They were, therefore, penal to the offerers of them: and by the pain which the loſs they ſuſtained by the oblation of them gave them, theſe ſacrifices produced all their effects. For, by thus affecting the mind of the offerers, they ſerved to make and keep up a proper difference between the treatment of penitent ſinners and that of other moral characters, even then when they were diſcharged from the puniſhment of the impenitent, and had reward, ſuitable to the meaſures of their obedience, conferred on them: and, for this reaſon, piacular ſacrifices became, by the appointment of the Deity, the means of conſtituting, reſtoring, and preſerving a federal union or relation between him and penitent ſinners, in a perfect conſiſtency with the rectitude of his own moral government.

Our author next conſiders, whether the death of Chriſt be a natural and proper mean for exciting and preſerving pain in the minds of thoſe penitent ſinners who believe in him; and, particularly, in his death, as the piacular ſacrifice which was offered for their ſins. And this, ſays our author, can ſcarcely be called in queſtion by any perſon who conſiders the high dignity of Chriſt's perſon, the innocency and tranſcendent piety and virtue of his life, how much he has merited of mankind by what he hath done and ſuffered for their ſalvation and happineſs, and the way and manner in which human minds are naturally touched and affected, when they reflect upon the great ſufferings of perſons of eminency, worth, and innocency; eſpecially, if theſe perſons have been their own particular friends and benefactors, and have voluntarily ſubmitted to the great ſufferings which have befallen them for their good and benefit.

A late ingenious writer (Dr. Pye Smith) ſtrenuouſly and argumentatively maintains, that the ſacrifice of Chriſt is a full and perfect ſatisfaction to the honour and juſtice of the divine government in pardoning and ſaving ſinners. No injury, ſays this writer, is done to the illuſtrious ſufferer by his ſtupendous act of benevolence and generoſity to guilty man,—infinite good accrues to the general intereſts of the univerſe,—there is ſuch an intercommunity of relation between the Saviour and his redeemed, as forms a juſt reaſon for regarding them as *one*, in a federal and legal ſenſe,—and the fact of this union, when reduced to practical and perſonal application, ſecures the exiſtence of genuine holineſs and every virtue.

Where ſuch conditions as theſe exiſt, though in a degree very low and imperfect, the idea of imputation and ſubſtitution, as to moral and political merit or demerit, is agreeable to the common underſtanding, feelings, and practice of mankind.

For the diſcharge of the momentous office which our Saviour undertook, he poſſeſſes, ſays Dr. Smith, a perfect fitneſs, on account of the union of the human and the divine nature in his myſterious perſon.

Being to act on the behalf of men, he is a real and proper man.—If alſo he performs the work which belongs to God alone, he muſt have the nature of God.—But though only the pure and perfect human nature of the Meſſiah could ſuffer, it is obvious that all the acts and ſufferings of that human nature, by reaſon of its union with the divine, come under a *relative conſideration* very different from that which ſimilar acts and ſufferings could have in any *mere* man. The value of the expiatory ſacrifice of Chriſt is not to be eſtimated from the divine appointment alone; nor merely from the kind or intenſity of ſufferings which our bleſſed Saviour endured; but from his true and eſſential Deity. For various reaſons which our author has adduced, he thinks himſelf warranted in attributing to the holy ſacrifice of Chriſt, a value properly *infinite*, on account of the divine nature of him who offered it, and accordingly he conceives that there is a cloſe and important connection between the two leading doctrines of the Chriſtian ſyſtem, the Deity and the atonement of Chriſt. They yield mutual illuſtration and ſupport; and neither can be conſiſtently held without the other.

The term *ſatisfaction* has been, as our author imagines, too often miſconceived; and to this miſconception he attributes the groſs prejudices that have been entertained againſt this doctrine. The ſenſe in which he uſes the term, upon the authority of thoſe who in his opinion may be claſſed among the moſt accurate divines, *viz.* Stapfer, Stein, Wyttenbach, Canzius, &c. is as follows. By ſatisfaction, in a theological ſenſe, we mean, "ſuch act or acts as ſhall accompliſh all the moral purpoſes, which to the infinite wiſdom of God appear fit and neceſſary under a ſyſtem of rectoral holineſs, and which muſt otherwiſe have been accompliſhed, by the exerciſe of retributive juſtice upon tranſgreſſors in their own perſons."

Dr. Thomas Burnet (on "Redemption") ſtates the doctrine of the ſatisfaction in a manner ſomewhat peculiar. He ſays, that the death of Chriſt has not itſelf ſatisfied divine juſtice, but only put us into the capacity of doing it, by confeſſing our ſins, and applying to God for pardon, with an humble dependence upon Chriſt's death; which, he thinks, ſo neceſſary a condition of ſalvation, that no man can obtain it without ſubmitting to it; he thinks this to be the language of an attendance upon the Lord's ſupper, upon which he lays a very great ſtreſs, ſo as to think, that no man has a covenant claim to the mercy of God in Chriſt, if he does not by engaging in this ordinance declare his truſt in Chriſt's ſacrifice, and to atone the divine diſpleaſure. See ATONEMENT, EXPIATION, PROPITIATION, and SACRIFICE.

SATISFACTION, in a *Popiſh ſenſe*. See PENANCE, and POPERY.

SATKA, in *Geography*, a town of Bohemia, in the circle of Konigingratz; 18 miles S.W. of Biezow.

SATNIOES, or SAPHINIOES, in *Ancient Geography*, a river of Aſia Minor, which watered the town of Pedaſus, according to Homer and Strabo.

SATOGA, or MONTREAL, in *Geography*, a river of Canada, which runs into the St. Lawrence, 10 miles above Montreal.

SATRA, in *Ancient Geography*, called alſo *Eleutherna*, a town of the iſland of Crete.

SATRACUS, a mountain and river of the iſland of Cyprus.

SATRAPA, or SATRAPES, in *Antiquity*, a governor of a province among the ancient Perſians.

King Darius uſually walked attended by his principal lords and ſatrapæ. (Q. Curtius.) The kingdom of Perſia was divided into ſatrapes, or juriſdictions of ſatrapæ.

The word is originally Perſian, ſignifying ſtrictly, admiral, or commander of a naval army; but it was afterwards applied indifferently to all governors of provinces. In which ſenſe it was alſo borrowed by the Greeks, who uſed the word σατραπης in the ſame ſignification.

We alſo meet with the word in ſome ancient Engliſh charters of king Ethelred, where the lords, who ſign and neceſſary (notwithſtanding God's power and abſolute right of forgiving; yet in reſpect of his wiſdom in governing the world, it was reaſonable and neceſſary) there ſhould be a vindication of the authority of his laws; and therefore, in that ſenſe of neceſſity, it was *neceſſary*, either that the ſinner ſhould periſh, or ſome other ſatisfaction ſhould be made in his ſtead;" which amounts to an aſſertion, that puniſhment of ſin is *always* neceſſary in the government of the world. But this is not *true;* for it may, for aught we know, be more agreeable in many inſtances to the wiſdom of God in his governing the world to *forgive*, than to *puniſh;* and in all ſuch inſtances puniſhment will not be neceſſary. But this neceſſity is found neither in the nature of things, nor in ſcripture; and therefore there can be no ſuch thing.

Dr. Richie (Peculiar Doctrines of Revelation) conſiders the oblation of burnt-offerings under the patriarchal diſpenſation of religion as inſtituted with a penal view, and that theſe burnt-offerings were the mulcts or fines which were exacted from and levied upon penitent ſinners, for the particular ſins which they had committed, and on account of the culpable part of their moral character or behaviour. This alſo is the idea of piacular ſacrifices, which is exhibited in the Levitical law and other places of the Old Teſtament. They made atonement for penitent ſinners in the ſenſe of conſtituting an union or relation between them and the Deity, and likewiſe in the ſenſe of reſtoring this union or relation after it was diſſolved and interrupted. And they likewiſe preſerved and ſupported an union of relation between the Deity and them, after it was made or reſtored. Moreover, the ſame effects are aſcribed to the death of Chriſt, which are attributed to piacular ſacrifices in the writings of the Old Teſtament. Atonement is an effect aſcribed to piacular ſacrifices in the Old Teſtament, and atonement being aſſigned as the effect of the death of Chriſt in the New Teſtament, atonement muſt be made by this ſacrifice in the ſame ſenſe in which it was made by the legal ſacrifices. Conſequently, this ſacrifice is the means by which an union or relation is *conſtituted*, *reſtored*, and *preſerved* between the Deity and ſuch penitent ſinners as believe in Jeſus Chriſt. The author afterwards proceeds to examine ſeveral notions about the nature of the efficacy of the death of Chriſt, in producing thoſe effects that are aſcribed to it. The firſt ſcheme of redemption which he examines is that which proceeds upon the ſuppoſition of a transfer of ſin and puniſhment from the ſinner to Chriſt, and of a transfer of righteouſneſs from Chriſt to the ſinner. Chriſt, as the ſinner's ſubſtitute, is ſuppoſed to have the ſin of the ſinner transferred or imputed to him, and to ſuffer the puniſhment of that ſin in his ſtead; and, on account of this vicarious puniſhment, the ſinner is ſuppoſed to be pardoned, or diſcharged from all puniſhment. And, on the other hand, the perfect obedience or righteouſneſs of Chriſt is ſuppoſed to be transferred to the ſinner, and imputed to him for his righteouſneſs, as if it had been performed by him, and was his own righteouſneſs: and, on account of this perfect righteouſneſs, thus transferred and imputed, the ſinner is accepted and treated by God as if he was without ſin, and a perfectly righteous perſon. Dr. Richie remarks, that no part of this ſcheme has any ſufficient ſupport from the holy ſcriptures. As to the imputation of the ſins of believers to Chriſt, this, in his opinion, is no where expreſsly affirmed in ſcripture. He examines the two paſſages that are alleged in ſupport of this doctrine. The firſt is 2 Cor. v. 21. "God hath made him to be ſin for us, who knew no ſin," &c. In theſe words, the apoſtle only affirms, that "God made Chriſt ſin for us," but he doth not ſay that he imputed our ſins to him, nor can it be ſo underſtood; becauſe ſin is a perſonal thing, and Chriſt could not be made a ſinner. The true ſenſe, as he conceives, is, that "God made Chriſt a ſin-offering for us," and a ſin-offering doth not imply the imputation of the ſin of the offender to the ſacrifice. The ſecond paſſage is, Iſaiah, liii. 6. "The Lord hath laid on him (the Meſſiah) the iniquity of us all." Theſe words are to be underſtood in the ſacrificial ſenſe; and if the tranſlation be admitted, the meaning is, that "God laid on Chriſt the iniquity of us all," in the ſame ſenſe in which the Jewiſh high-prieſt "put all the iniquities of the children of Iſrael upon the head of the ſcape-goat," Lev. xvi. 21; not in the ſenſe of imputing them to the ſcape-goat, but only in a figurative ſenſe, in order to ſignify that they were "borne," or "carried away," by it, "into a land not inhabited," v. 22. *i. e.* he laid our ſins on Chriſt, that he might take, or carry them away, by obtaining the pardon of them by the ſacrifice of himſelf; or, in other words, laid our ſins upon him, in the ſenſe of appointing his death to be the means by which atonement was made for them, and the remiſſion of them obtained, which ſenſe of the words does not imply that our ſins were imputed to Chriſt. But becauſe the Hebrew verb, הפּגיע, has the ſignification of *laid on* in no other place, but commonly ſignifies *to meet*, or to *ruſh in upon*, it ought to have been ſo rendered in this paſſage: "The Lord hath made the iniquity of us all to meet him, or to ruſh in upon him;" and the manner in which the Lord did this is clearly explained in the context, v. 10, by "making his ſoul an offering for ſin." As to the transfer of puniſhment of our ſins to Chriſt, and his ſuffering that puniſhment in our ſtead, there is nothing in ſcripture, ſays our author, that gives any real ſupport or countenance to this way of thinking. Vicarious puniſhment is not eſſential to the idea or nature of piacular ſacrifice, for no piacular ſacrifice made atonement for ſin in the ſenſe of ſuffering the puniſhment of it in the offender's ſtead. Chriſt bore our ſins, in the ſacrificial ſenſe, *viz.* not by ſuffering puniſhment in our ſtead, but by making atonement for them by the ſacrifice of himſelf, and thereby bearing, or carrying and taking away, the puniſhment of them. Moreover, the paſſages of ſcripture, which are ſuppoſed to prove that the perfect obedience or righteouſneſs of Chriſt is imputed to thoſe who believe in him for their righteouſneſs, do not amount, in our author's judgment, to any proof of this point. He adds, that this ſcheme of redemption is, in all its parts, a contradiction to reaſon and common ſenſe, as implying that things are done which are ſelf-contradictory, and naturally impoſſible to be done by any power whatſoever. It ſuppoſes the poſſibility of transferring the actions of one perſon to another; it proceeds upon the ſuppoſition of a transfer of puniſhment from the guilty to the innocent, whereas puniſhment, like guilt, is a perſonal thing; it does not furniſh us with the idea of a piacular ſacrifice; and it is abſolutely inconſiſtent with the rectitude of the divine government.

Another ſcheme of redemption ſuppoſes, that the blood or ſacrifice which Chriſt offered, was the perfect obedience or goodneſs of his life;—that the ſacrifice of Chriſt, conſidered as a moral means, has a natural and ſtrong tendency to render men who are corrupt and wicked, penitent and obedient; and that becauſe the blood or ſacrifice of Chriſt has this tendency, it is a reaſon for granting to the penitent the pardon of their ſins and eternal life. But this ſcheme, as our author apprehends, doth not conſiſt with the idea of ſacrifice of any kind, euchariſtical or piacular.

The author then goes on to ſhew, that the death of Chriſt is exhibited in the New Teſtament, as a true and proper ſin-offering or piacular ſacrifice; and that in the caſe of all penitent ſinners, who believe in Chriſt, his death is a natural and fit mean for anſwering the end and deſign of a piacular ſacrifice; particularly in the production of all thoſe effects which are aſcribed to it in the writings of the New Teſtament. Piacular ſacrifices were mulcts, demanded from penitent ſinners by the Deity, for ſins committed and faultineſs of moral character. They were, therefore, penal to the offerers of them: and by the pain which the loſs they ſuſtained by the oblation of them gave them, theſe ſacrifices produced all their effects. For, by thus affecting the mind of the offerers, they ſerved to make and keep up a proper difference between the treatment of penitent ſinners and that of other moral characters, even then when they were diſcharged from the puniſhment of the impenitent, and had reward, ſuitable to the meaſures of their obedience, conferred on them: and, for this reaſon, piacular ſacrifices became, by the appointment of the Deity, the means of conſtituting, reſtoring, and preſerving a federal union or relation between him and penitent ſinners, in a perfect conſiſtency with the rectitude of his own moral government.

Our author next conſiders, whether the death of Chriſt be a natural and proper mean for exciting and preſerving pain in the minds of thoſe penitent ſinners who believe in him; and, particularly, in his death, as the piacular ſacrifice which was offered for their ſins. And this, ſays our author, can ſcarcely be called in queſtion by any perſon who conſiders the high dignity of Chriſt's perſon, the innocency and tranſcendent piety and virtue of his life, how much he has merited of mankind by what he hath done and ſuffered for their ſalvation and happineſs, and the way and manner in which human minds are naturally touched and affected, when they reflect upon the great ſufferings of perſons of eminency, worth, and innocency; eſpecially, if theſe perſons have been their own particular friends and benefactors, and have voluntarily ſubmitted to the great ſufferings which have befallen them for their good and benefit.

A late ingenious writer (Dr. Pye Smith) ſtrenuouſly and argumentatively maintains, that the ſacrifice of Chriſt is a full and perfect ſatisfaction to the honour and juſtice of the divine government in pardoning and ſaving ſinners. No injury, ſays this writer, is done to the illuſtrious ſufferer by his ſtupendous act of benevolence and generoſity to guilty man,—infinite good accrues to the general intereſts of the univerſe,—there is ſuch an intercommunity of relation between the Saviour and his redeemed, as forms a juſt reaſon for regarding them as *one*, in a federal and legal ſenſe,—and the fact of this union, when reduced to practical and perſonal application, ſecures the exiſtence of genuine holineſs and every virtue.

Where ſuch conditions as theſe exiſt, though in a degree very low and imperfect, the idea of imputation and ſubſtitution, as to moral and political merit or demerit, is agreeable to the common underſtanding, feelings, and practice of mankind.

For the diſcharge of the momentous office which our Saviour undertook, he poſſeſſes, ſays Dr. Smith, a perfect fitneſs, on account of the union of the human and the divine nature in his myſterious perſon.

Being to act on the behalf of men, he is a real and proper man.—If alſo he performs the work which belongs to God alone, he muſt have the nature of God.—But though only the pure and perfect human nature of the Meſſiah could ſuffer, it is obvious that all the acts and ſufferings of that human nature, by reaſon of its union with the divine, come under a *relative conſideration* very different from that which ſimilar acts and ſufferings could have in any *mere* man. The value of the expiatory ſacrifice of Chriſt is not to be eſtimated from the divine appointment alone; nor merely from the kind or intenſity of ſufferings which our bleſſed Saviour endured; but from his true and eſſential Deity. For various reaſons which our author has adduced, he thinks himſelf warranted in attributing to the holy ſacrifice of Chriſt, a value properly *infinite*, on account of the divine nature of him who offered it, and accordingly he conceives that there is a cloſe and important connection between the two leading doctrines of the Chriſtian ſyſtem, the Deity and the atonement of Chriſt. They yield mutual illuſtration and ſupport; and neither can be conſiſtently held without the other.

The term *ſatisfaction* has been, as our author imagines, too often miſconceived; and to this miſconception he attributes the groſs prejudices that have been entertained againſt this doctrine. The ſenſe in which he uſes the term, upon the authority of thoſe who in his opinion may be claſſed among the moſt accurate divines, *viz.* Stapfer, Stein, Wyttenbach, Canzius, &c. is as follows. By ſatisfaction, in a theological ſenſe, we mean, "ſuch act or acts as ſhall accompliſh all the moral purpoſes, which to the infinite wiſdom of God appear fit and neceſſary under a ſyſtem of rectoral holineſs, and which muſt otherwiſe have been accompliſhed, by the exerciſe of retributive juſtice upon tranſgreſſors in their own perſons."

Dr. Thomas Burnet (on "Redemption") ſtates the doctrine of the ſatisfaction in a manner ſomewhat peculiar. He ſays, that the death of Chriſt has not itſelf ſatisfied divine juſtice, but only put us into the capacity of doing it, by confeſſing our ſins, and applying to God for pardon, with an humble dependence upon Chriſt's death; which, he thinks, ſo neceſſary a condition of ſalvation, that no man can obtain it without ſubmitting to it; he thinks this to be the language of an attendance upon the Lord's ſupper, upon which he lays a very great ſtreſs, ſo as to think, that no man has a covenant claim to the mercy of God in Chriſt, if he does not by engaging in this ordinance declare his truſt in Chriſt's ſacrifice, and to atone the divine diſpleaſure. See Atonement, Expiation, Propitiation, and Sacrifice.

Satisfaction, in a *Popiſh ſenſe*. See Penance, and Popery.

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We alſo meet with the word in ſome ancient Engliſh charters of king Ethelred, where the lords, who ſign next after the dukes, take the title of ſatrapes of the king. Du-Cange takes the word here to ſignify miniſters of the king.

SATRIANO, in *Geography*, a town of Naples, in the province of Baſilicata, the ſee of a biſhop; 7 miles S.W. of Acerenza.—Alſo, a town of Naples, in Calabria Ultra, the ſeat of the provincial tribunal; 8 miles S. of Squillace.

SATRICUM, in *Ancient Geography*, a town of Italy, in Latium, in the vicinity of the town of Corioli.

SATRUM, in *Geography*, a town of Hindooſtan, in the Carnatic; 12 miles S. of Tritchinopoly.

SATSHIRE, a town of Imiretta; 60 miles E. of Cotatis.

SATTALIE, or SATELLER, in *Commerce*, a money of account at Bencoolen in the Eaſt Indies; 32 ſattalies making 4 ſoocoos, or a dollar of 5*s*.

SATTARAH, in *Geography*, a town of Hindooſtan, in the country of Viſiapour, formerly the capital of the Mahratta ſtate, near the ſource of the Kiſtnah. It was taken from the king of Viſiapour by Sevadjee, founder of the Mahratta ſtate, fortified, and made the capital of his dominions. Here, it is ſaid, the repreſentative of the rauj, or chief of the Mahrattas, is kept in the fort, and treated with all poſſible reſpect, and upon extraordinary occaſions, he appears at Poonah: on his death, his place is ſupplied by the handſome ſon of ſome poor man. The Peiſhwah is prime miniſter of the Mahratta ſtate. The rajah of Nagpour is commander-in-chief of the armies; 77 miles W. of Viſiapour. N. lat. 15° 45′. E. long. 74° 8′.

SATTELBERG, a mountain of Sileſia, in the principality of Schweidnitz; 4 miles N.E. of Landſhut.

SATTIMUNGULUM, a town and fortreſs of Hindooſtan, ceded in 1799 to Great Britain; 33 miles N. of Coimbetore. N. lat. 11° 40′. E. long. 77° 12′.

SATTIN, or SATIN, a kind of ſilken ſtuff, very ſmooth and ſhining, the warp of which is very fine, and ſtands out; the woof coarſer, and hidden underneath; on which depends that gloſs and beauty which give it its price.

The word comes from the French, *ſatin;* which Menage derives farther from the Latin *ſeta, a briſtle* or *hair;* others from the Hebrew *ſadin,* or from the old French *ſade* and *ſadinet, handſome, genteel.*

There are ſome ſattins quite plain, others wrought, ſome flowered with gold or ſilk, others ſtriped, &c. All the varieties in the fabric of ſattins are made by uſing new warps, or woofs. The fineſt ſattins are generally ſaid to be thoſe of Florence and Genoa, yet the French will not allow thoſe of Lyons to be at all inferior to them. The ſattins of Bruges have their warp of ſilk, and their woof of thread.

Indian ſattins, or ſattins of China, are ſilken ſtuffs, much like thoſe manufactured in Europe. Of theſe, ſome are plain, either white, or of other colours; others worked, either with gold or ſilk, flowered, damaſked, ſtriped, &c. They are moſtly valued becauſe of their cleaning and bleaching eaſily, without loſing any thing of their luſtre. In other reſpects they are inferior to thoſe of Europe.

F. le Comte obſerves, that the Chineſe prepare their ſattins in oil, to give them the greater luſtre; but this makes the duſt liable to hang to them.

SATTIN *Flower,* and *White ſattin,* in *Botany.* See LUNARIA.

SATTIN *Spar,* in *Mineralogy,* fibrous carbonate of lime: it has a pearly luſtre, and is generally of a pure white colour: the fibres are minute and frequently waved. It has been uſed for beads and necklaces, and other ornaments. It is procured from the county of Cumberland. See LIME.

SATTINAFF, in *Geography,* a cluſter of iſlets and rocks in the Eaſt Indian ſea. S. lat. 5° 24′. E. long. 118° 38′.

SATTINAGRAM, a town of Hindooſtan, in the circar of Guntoor; 13 miles N. of Guntoor.

SATTINET, or SATTINADE, a very ſlight, thin ſort of ſattin, chiefly uſed by the ladies for ſummer night-gowns, &c. and ordinarily ſtriped. The word is a diminutive of ſattin.

SATTIPALAM, in *Geography,* a town of Hindooſtan, in Golconda; 27 miles W.S.W. of Combamet.

SATTNA, a town of Sweden, in Sudermanland; 7 miles N.W. of Sundſwall.

SATTRA, a town of Sweden, in Sudermanland; 24 miles N.W. of Nykoping.

SATULA, in *Ancient Geography,* a town in the interior of Arabia Felix. Ptolemy.

SATURANTIA is ſometimes uſed in the ſame ſenſe as abſorbents.

SATURATION, in *Chemiſtry,* is the impregnation of an acid with an alkali, or *vice verſâ,* till either will receive no more, and the mixture becomes neutral. The term is more generally applied to any menſtruum that is capable of diſſolving any ſubſtance, or of abſorbing and uniting with any fluid; thus the air is ſaid to be ſaturated with water, when it can diſſolve and retain no more, &c. and the limit of its capacity of ſolution is called the point of ſaturation. This is different in different ſubſtances that tend to unite with each other. See AFFINITY.

SATURDAY, in *Chronology,* the ſeventh or laſt day of the week, ſo called, as ſome have ſuppoſed, from the idol Seater, worſhipped on this day by the ancient Saxons, and thought to be the ſame as the Saturn of the Latins. Saturday anſwers to the Jewiſh ſabbath.

SATURDAY-*Stop,* a ſpace of time, in which, of old, it was not lawful to take ſalmons in the North, *viz.* from even-ſong on Saturday, till ſun-riſing on Monday.

SATUREIA, in *Botany,* an old name, which ſeems moſt probably to be derived from *ſaturo,* to cram or ſatisfy, in alluſion to the uſe of the plant in ſeaſoning food; whence alſo comes its Engliſh name Savory. Linnæus rather follows the opinion of thoſe who deduce the above name from *Satyrus,* a ſatyr; becauſe of a ſuppoſed ſtimulating property.—Linn. Gen. 288. Schreb. 385. Willd. Sp. Pl. v. 3. 41. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 3. 373. Sm. Prodr. Fl. Græc. Sibth. v. 1. 396. Juſſ. 112. Lamarck Illuſtr. t. 504.—Claſs and order, *Didynamia Gymnoſpermia.* Nat. Ord. *Verticillatæ,* Linn. *Labiatæ,* Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, tubular, ſtriated, erect, permanent; its orifice with five ſtraight, nearly equal, teeth. *Cor.* of one petal, ringent; tube cylindrical, ſhorter than the calyx; mouth ſimple; upper lip erect, obtuſe, ſharply emarginate; lower lip the length of the upper, ſpreading, in three deep obtuſe ſegments of equal length, the middle one rather the largeſt. *Stam.* Filaments four, ſetaceous, diſtant, hardly ſo long as the upper lip, the two lower ones rather the ſhorteſt; anthers converging in pairs. *Piſt.* Germen four-cleft; ſtyle briſtle-ſhaped, the length of the corolla; ſtigmas two, tapering. *Peric.* none, the cloſed calyx containing the ſeeds in its lower part. *Seeds* four, roundiſh.

Eſſ. Ch. Segments of the corolla nearly equal. Stamens diſtant. Calyx almoſt equally five-cleft.

1. S. *juliana*. Linear-leaved Savory. Linn. Sp. Pl. 793. Willd. n. 1. Ait. n. 1. Sm. Fl. Græc. Sibth. t. 540, unpubliſhed. (S. Sancti Juliani; Ger. Em. 576.)—Whorls level-topped. Leaves linear-lanceolate.—Native of Italy, as well as of Greece, and the iſles of Crete and Zante. Gerarde appears to have had it in his garden. Mr. Aiton marks it as kept in the frame, and flowering from May to September. The *root* and *ſtem* are perennial, woody; the latter very buſhy, from four to ſix inches high. *Leaves* crowded, narrow, acute, of a hoary green, with a pungent aromatic flavour. *Flowers* ſmall, whitiſh or fleſh-coloured, variegated with crimſon or purple.

2. S. *nervoſa*. Rib-leaved Savory. Desfont. Atlant. v. 2. 9. Willd. n. 2.—Whorls denſe. Calyx villous. Leaves ovate, acute, ſmooth, veiny beneath.—Found by M. Desfontaines in the fiſſures of rocks on mount Atlas. Dr. Sibthorp received it from an apothecary in Zante, by the name of Ἥζωπον, or Hyſſop. The *ſtems* are taller, and much more ſlender, than in the foregoing, clothed with fine ſhort down. *Leaves* in diſtant pairs, ſomewhat rigid. *Flowers* ſmall, roſe-coloured, the mouth of the *calyx* cloſed with hairs. *Desfont.* We ſhould ſuſpect this plant might rather belong to the genus *Thymus*.

3. S. *Thymbra*. Whorl-flowered Savory. Linn. Sp. Pl. 794. Willd. n. 3. Ait. n. 2. Sm. Fl. Græc. Sibth. t. 541, unpubliſhed. (S. cretica; Ger. Em. 576. Thymbra legitima; Cluſ. Hiſt. v. 1. 358. Thymum creticum Ponæ verticillatum; Barrel. Ic. t. 898.)—Whorls denſe, rounded, hiſpid. Leaves ovate-oblong, pointed, dotted, hiſpid, without veins.—Obſerved by Dr. Sibthorp to be very abundant on all the dry hills of the Archipelago and ſouthern part of Greece. It flowers with us in ſummer, having been cultivated from the time of Parkinſon; but requires ſhelter in winter. The *ſtem* is ſhrubby, buſhy, ſquare, and rough. *Leaves* aromatic. *Flowers* many in each whorl, pale purple, with prominent ſtamens. There can be little doubt of this being, as all authors have thought, the true Θυμβρα of Dioſcorides; and it retains the ſame appellation, more or leſs corrupted, in modern Greek.

4. S. *græca*. Grecian Savory. Linn. Sp. Pl. 794. Willd. n. 4. Ait. n. 3. Sm. Fl. Græc. Sibth. t. 542, unpubliſhed. (Clinopodium creticum; Alpin. Exot. 265. t. 264.)—Stalks axillary, with from three to ſix flowers. Bracteas ſhorter than the calyx. Leaves ovate, hiſpid, veiny beneath.—Native of the Archipelago, Peloponneſus, and the iſle of Crete. Miller cultivated this ſpecies. Mr. Aiton marks it as a perennial herb, kept in the frame, and flowering in June and July. We have not met with any living ſpecimen. The habit of the plant is rather ſlender. *Leaves* with ſhining dots on the upper ſide, cauſed by cloſe preſſed hairs. *Flowers* pale purple, with three dark ſpots on the lip.

5. S. *filiformis*. Slender Downy Savory. Desfont. Atlant. v. 2. 8. t. 121. f. 1. Willd. n. 5.—Stalks axillary, with from one to three flowers. Leaves ovato-lanceolate, villous. Stem ſhrubby.—Found in the fiſſures of rocks on mount Atlas. *Stems* a ſpan high, ſlender, villous. *Leaves* and *flowers* ſmall. *Corolla* roſe-coloured, minute, villous. *Desfontaines.*

6. S. *montana*. Winter Savory. Linn. Sp. Pl. 794. Willd. n. 6. Ait. n. 4. Sm. Fl. Græc. Sibth. t. 543, unpubliſhed. (S. perennis; Riv. Monop. Irr. t. 44. f. 2. S. hortenſis; Ger. Em. 575. f. 2; the cuts being tranſpoſed.)—Stalks axillary, cymoſe, ſlightly turned one way. Calyx-teeth tapering, pointed. Leaves linear-lanceolate, entire, with ſharp points. Stem ſhrubby.—Native of dry open ſituations in the ſouth of Europe. Commonly cultivated in kitchen gardens, where it is hardy and ſhrubby, laſting many years without any care or ſhelter, and flowering in June and July. The uſe of this ſpecies for ſeaſoning broth, or ſoups, is well known. The *ſtem* is buſhy, ſcarcely a foot high. *Leaves* evergreen, dilated upward. *Flowers* white, with a lilac tinge, and violet ſpots.

7. S. *rupeſtris*. Rock Savory. Wulf. in Jacq. Coll. v. 1. 130. Jacq. Ic. Rar. t. 494. Willd. n. 7. Ait. n. 5. (S. thymifolia; Scop. Carn. v. 1. 428. t. 29.)—Stalks axillary, cymoſe, turned one way. Calyx-teeth ſhort and blunt. Leaves ovato-lanceolate, toothed and notched.—Native of rocks in Carniola. A ſhrubby, buſhy, fragrant ſpecies, remarkable for its notched *leaves*, which are dotted beneath. *Flowers* copious, whitiſh, dotted with crimſon.

8. S. *hortenſis*. Summer Savory. Linn. Sp. Pl. 795. Willd. n. 8. Ait. n. 6. (Satureia; Dod. Pempt. 289. Rivin. Monop. Irr. t. 44. f. 1. S. hortenſis æſtiva; Ger. Em. 575. f. 2; the cuts being tranſpoſed. S. altera; Camer. Epit. 487.)—Stalks axillary, ſomewhat cymoſe. Leaves lanceolate, entire. Stem herbaceous, with oppoſite croſſing branches.—Native of the ſouth of Europe. A hardy annual in our gardens, where it has long been cultivated, though this ſpecies is not in ſuch popular kitchen uſe here as in Germany. Its ſcent is ſweeter than that of Winter Savory; more like Baſil. The *root* is ſmall and fibrous. *Stem* buſhy. *Leaves* ſmooth, rather ſucculent. *Flowers* whitiſh.

9. S. *capitata*. Fringed Savory. Linn. Sp. Pl. 795. Willd. n. 9. Ait. n. 7. Sm. Fl. Græc. Sibth. t. 544, unpubliſhed. (Thymum legitimum; Cluſ. Hiſt. v. 1. 357. Th. creticum; Ger. Em. 574. Th. creticum incanum capitatum; Barrel. Ic. t. 897.)—Flowers ſpiked. Leaves keeled, dotted, fringed.—Native of dry open ſituations in Greece, Paleſtine, the iſlands of the Archipelago, and ſome parts of Spain. Gerarde cultivated this handſome ſpecies, and it is marked by Mr. Aiton as a hardy ſhrub, flowering from June to October, but we have rarely ſeen a garden ſpecimen. The *ſtem* is buſhy. *Leaves* ſmall, crowned. *Flowers* light purple, in copious, denſe, terminal *ſpikes*, with reddiſh imbricated *bracteas*. This is doubtleſs the real Θυμος of Dioſcorides, and is called Θυμιο, or ϑυμάρι, at preſent in Greece.

10. S. *ſpinoſa*. Thorny Savory. Linn. Sp. Pl. 795. Willd. n. 10. Sm. Fl. Græc. Sibth. t. 545, unpubliſhed. (Gaidarothimo di Candia; Pon. Bald. 106.)—Branches ſpinous. Leaves ovate, downy.—Native of Crete. The *ſtem* is ſhrubby, the *branches* ending in ſharp thorns. *Leaves* oppoſite, downy or woolly. *Flowers* axillary, pale purple, or whitiſh, dotted with a deeper colour.

11. S. *viminea*. Twiggy Savory, or Pennyroyal tree. Linn. Sp. Pl. 795. Willd. n. 11. Ait. n. 8. (Sideritis viminea; Brown Jam. 258.)—Flowers axillary, three together, nearly ſeſſile. Bracteas linear. Leaves oblong, entire; ſmooth above; tapering at the baſe. Stem ſhrubby, weak.—Native of the cooler mountains of Jamaica; kept with us in the ſtove. It ſupports itſelf on the neighbouring buſhes, if not tied up. Every part of the plant has the ſmell of pennyroyal. Swartz mentions a more rigid and humble variety, with ſmaller, more oblong, *leaves*.

Satureia, in *Gardening*, contains plants of the low under-ſhrubby and herbaceous perennial and annual kinds, of which the ſpecies cultivated are; the winter ſavory (S. montana); the ſummer ſavory (S. hortenſis); the linear-leaved ſavory (S. juliana); the whorled ſavory (S. thymbra); and the ciliated ſavory (S. capitata).

In the fourth ſort the leaves are ſomewhat like thoſe of the common ſavory, having a ſtrong aromatic ſcent when bruiſed. In this alſo the whorls are four or five, whereas in the preceding there are nineteen or twenty.

Method of Culture.—The firſt ſort may be raiſed from ſeeds or by planting ſlips. The ſeeds ſhould be ſown in the early ſpring, as the end of March or beginning of April, on a bed of light rich earth, raking it in lightly ; when the plants appear they ſhould be occaſionally watered, and kept properly thinned.

Some of theſe plants, when a few inches high, are often taken up, and planted out in nurſery rows ſix inches apart in moiſt weather, to remain to the autumn or ſpring, and then planted out with balls of earth about their roots, in rows a foot aſunder, to remain. But the better method is by planting ſlips or cuttings at the above period, which readily take root, and form good plants, which in the autumn may be planted out with balls to their roots, in beds or rows a foot apart.

The ſecond ſort is raiſed from ſeeds, which ſhould be ſown thinly in the beginning of April upon a bed of light earth, where the plants are to remain. Some, however, tranſplant them in the ſame manner as the above.

The plants ſhould afterwards be kept clean from weeds, and be managed in the ſame manner as has been directed for marjoram.

The other tender ſorts may be increaſed by ſlips or cuttings of the moſt ſtrong ſide-ſhoots, planting them out in pots, (or in a ſhady border protected by mats,) the pots being plunged in a moderate hot-bed : they ſoon begin to grow, and ſhould have free air and water : when well rooted in the autumn, they ſhould be removed into ſeparate ſmall pots, filled with freſh undunged mould, and be placed in the ſhade till well rooted, and afterwards in a ſheltered ſituation till the autumn, when they ſhould be taken under a garden frame, having free air when the ſeaſon is fine, but be well protected from froſt.

As theſe plants ſeldom continue more than a few years, ſome ſhould be frequently raiſed as a ſupply againſt they decline. The two firſt or hardy ſorts are uſeful pot-herbs, and the other kinds afford variety among collections of greenhouſe plants.

SATURN, in *Aſtronomy*, one of the primary planets ; being that which is fartheſt from the earth, and the ſun, and whoſe motion is the ſloweſt, if we except the Georgium Sidus, as it is now called, lately diſcovered by Dr. Herſchel. It is thus characterized, ♄. Its mean diameter is 79042 miles : it revolves round its axis in $10^h\ 16'$, and round the ſun, at the diſtance of 900,000,000 miles, in $10746^d\ 19^h\ 16'\ 15''.5$ tropical revolutions, and $10759^d\ 1^h\ 51'\ 11''.2$ ſidereal revolutions.

Saturn ſhines but with a feeble light, by reaſon of its diſtance.

For the apparent diameter, relative diſtance, and excentricity of the orbit of Saturn, ſee DIAMETER, DISTANCE, EXCENTRICITY, PLANET, and *Solar* SYSTEM.

For the real diameter of Saturn, its content, period, diſtance from the ſun, inclination of its orbit, quantity of matter, denſity, &c. ſee PLANETS, and *Solar* SYSTEM.

It has been doubted whether or not Saturn, like the other planets, revolves on his axis. If we argue from analogy, it is moſt probable that this is the caſe with reſpect to this planet as well as the others, and Dr. Herſchel has confirmed the argument of analogy by actual obſervation. He has diſcovered a variety of belts and ſpots on the ſurface of Saturn. Huygens has obſerved five belts nearly parallel to the equator, and Dr. Herſchel has obſerved ſeveral which are in general parallel with the ring. In November 1793 he perceived ſouth of the ſhadow of the ring upon Saturn, a bright, uniform, and broad belt, and cloſe to it a broad, darker belt, divided by two narrow, white ſtreaks, ſo as to make it five belts, three dark and two bright, the colour of the dark belt being yellowiſh. The belts generally cover a larger zone of the diſc of Saturn than the belts of Jupiter occupy on his ſurface. (Phil. Tranſ. for 1794, vol. lxxxiv. pt. i.) From the changes which he has obſerved in the belts of this planet, he infers that it has an atmoſphere of conſiderable denſity, in which theſe changes take place. That Saturn has an atmoſphere he has alſo aſcertained by the appearances of his ſatellites, which at the time of their occultations hang to the diſc a long while before they vaniſh ; a circumſtance that cannot be accounted for without a conſiderable refraction. The appearance of the belts of Saturn, following in their arrangement the direction of the ring, has led Dr. Herſchel to conclude, that this planet turns upon an axis which is perpendicular to the plane of the ring. The ſame ſpot has alſo been ſucceſſively obſerved in three different ſituations. Beſides, the body of Saturn has been found, by repeated obſervations, to be flattened at the poles. The mean meaſure of the equatorial diameter has been found to be $22''.81$; and that of the polar diameter $20''.61$, whence it is inferred, that the equatorial diameter is to the polar nearly as 11 to 10. Phil. Tranſ. vol. lxxx. pt. i. for 1790, p. 13, &c.

From ſubſequent obſervations Dr. Herſchel found, that the proportion of the equatorial to the polar diameter of Saturn, is as 35.41 to 32 ; and he changed his opinion with regard to its form. In April 1805 he was ſtruck with a ſingular appearance exhibited by this planet. The flattening of the polar regions did not commence till at a high latitude, and there it was more ſudden than it is towards the poles of Jupiter ; and therefore its figure is different from that of an accurate ſpheroid. It is ſomewhat like a ſquare, or rather parallelogram, with the four corners rounded off deeply, but not ſo much as to bring it to a ſpheroid. The curvature is leſs on the equator and on the poles than at the latitude of about 45°. The equatorial diameter however is conſiderably greater than the polar. The cauſe that produces this modification of the flattening he ſuppoſes to be the attraction of the ring. It reſembles a parallelogram, one ſide of which is the equatorial, the other the polar diameter, with the four corners rounded off, ſo as to leave both the equatorial and polar regions flatter than they would be in a regular ſpheroidical figure. The proportional dimenſions of Saturn's diſc are as follow :

The diameter of the greateſt curvature -	36
The equatorial diameter - - -	35
The polar diameter - - - -	32
Latitude of the longeſt diameter -	- 43° 20′

Phil. Tranſ. for 1805, vol. xcv. pt. ii.

It is well known, that the flattening at the poles of the Earth, Jupiter, Mars, and Saturn, ariſes from the centrifugal force of their equatorial parts. On account of the great diameter of Jupiter, and the rapidity of its daily motion, his equatorial parts move with immenſe velocity ; and, therefore, in conſequence of their great centrifugal force, this planet is more flattened at his poles than either the Earth or Mars. It is remarkable, however, that Saturn ſhould be more flattened at his poles than Jupiter, though the velocity of the equatorial parts of the former is much leſs than that of the latter. When we conſider, however, that the ring of Saturn lies in the plane of its equator, and that it is equally, if not more denſe than the planet, we ſhall find no difficulty in accounting for the great accumulation of matter at the equator of Saturn. The ring acts more powerfully upon the equatorial regions of Saturn than upon any part of his diſc; and by diminiſhing the gravity of theſe parts, it aids the centrifugal force in flattening the poles of the planet. Had Saturn, indeed, never revolved upon its axis, the action of the ring would, of itſelf, have been ſufficient to give him the form of an oblate ſpheroid.

The diſtance of Saturn from the ſun being 9½ times greater than that of the earth from the ſame, it is found, that the apparent diameter of the ſun ſeen from him will not much exceed three minutes and a half. The ſun's diſc, therefore, to an inhabitant of Saturn, will appear 90 times leſs than it does to us, and both its light and heat will be diminiſhed in the ſame proportion. See PLANETS.

Hence ſome have concluded that Saturn, as well as Jupiter, whoſe light and heat are only about $\frac{1}{28}$th part of ours, are entirely unfit for rational inhabitants. But that their light is not ſo weak as we imagine, is evident from their brightneſs in the night-time. Beſides, allowing with Dr. Smith (Optics, art. 95), the ſun's light to be 90,000 times as ſtrong with reſpect to us as the light of the moon when full, the ſun will afford 1000 times as much light to Saturn as the full moon does to us, and 3000 times as much to Jupiter. So that theſe two planets, even without any moons, would be much more enlightened than we at firſt imagine; and by having ſo many, they may be very comfortable places of reſidence. On a compariſon of the ſun's light with that of the moon at full, different reſults have been obtained. To thoſe that occur under the article LIGHT, we ſhall here add, that by comparing the light of the moon with that of a wax-taper, whoſe illuminating power was determined by the *photometer* (which ſee), profeſſor Leſlie found that the illuminating power of the ſun is 150,000 times greater than that of the moon. The heat of Saturn and Jupiter, ſo far as it depends on the force of the ſun's rays, is certainly much leſs than ours; to which no doubt the bodies of their inhabitants are as well adapted as ours are to the ſeaſons we enjoy. And if we conſider that Jupiter never has any winter, even at his poles, which probably is alſo the caſe with Saturn, the cold cannot be ſo intenſe on theſe two planets as is generally imagined. To this we may add, that there may be ſomething in the nature of their mould warmer than in that of our earth; and we find that all our heat does not depend on the rays of the ſun; for if it did, we ſhould always have the ſame months equally hot or cold at their annual return, which is very far from being the caſe. To ſuch eyes as ours, unaſſiſted by inſtruments, Jupiter is the only planet that can be ſeen from Saturn; and Saturn the only planet that can be ſeen from Jupiter.

The phaſes of Saturn are very various and extraordinary, and long perplexed the aſtronomers, who could not divine the meaning of ſuch irregularity: thus Hevelius obſerved him to be ſometimes *monoſpherical*, ſometimes *triſpherical*, *ſpherico-anſated*, *elliptico-anſated*, and *ſpherico-cuſpidated*. But Huygens plainly ſhews, that all theſe monſtrous appearances are owing to the imperfections of the teleſcopes that author had uſed. Huygens, upon obſerving him very attentively with much better glaſſes, reduced all their phaſes to three principal ones; *viz. round*, *brachiated*, and *anſated*.

One thing Saturn has peculiar to himſelf; *viz.* his ring: for the phenomena, &c. of which, ſee RING.

The inequalities in the ſurface of the ring, ſtated under that article from the obſervations of Dr. Herſchel, are conſidered by La Place as abſolutely neceſſary for maintaining the ring in equilibrium round Saturn; and he has ſhewn, that if the ring were a regular body, ſimilar in all its parts, its equilibrium would be diſturbed by the ſlighteſt force, ſuch as the attraction of a comet or a ſatellite; and that it would finally be precipitated upon the ſurface of the planet. Hence this celebrated philoſopher has concluded, that the different rings with which Saturn is encircled are irregular ſolids, of unequal breadth in different parts of their circumference, ſo that the centres of gravity do not coincide with their centres of figure: and that theſe centres of gravity may be conſidered as ſo many ſatellites circulating round Saturn, at diſtances depending on the inequality of the parts of each ring, and with periods of rotation equal to thoſe of their reſpective rings. Hence the ring will turn round its centre of gravity in the ſame time that it revolves round Saturn. It is obvious that the action of the ſun, and the ſatellites of Saturn upon theſe rings, ought to produce motions of preceſſion analogous to thoſe of the Earth's equator; and that as theſe motions ought to be different for each ring, they ought finally to move in different planes. This reſult, however, is contrary to obſervation; and, accordingly, La Place has diſcovered, that the action of the equator is the cauſe which retains all the rings in one plane. It was from this phenomenon, of which the cauſe is now apparent, that he aſcertained the rotation of the planet, before Dr. Herſchel had determined it by direct obſervation. See Mecanique Celeſte, tom. ii. p. 165. 373. and Mem. Acad. Par. 1787.

It is neceſſary merely to mention ſome unfounded hypotheſes that have been propoſed on the formation of the ring. Maupertuis has maintained, that this luminous girdle was the tail of a comet, which the attraction of Saturn had compelled to circulate around him. Mairan aſſerted, that the diameter of the planet was originally equal to the diameter of its outer ring; and, that by ſome unknown cauſe, the exterior ſhell of Saturn was broken to pieces, which were attracted by his body: but the equatorial parts of the exterior ſhell remained entire, and thus formed a ring about the planet. Buffon imagines that the ring is a part of the equator which has been detached by the exceſs of centrifugal force.

Abandoning theſe hypotheſes, we ſhall content ourſelves with obſerving, that the formation of the ring was probably contemporary with that of the planet, and intended to anſwer ſome important purpoſe, which aſtronomers have not yet had the ſagacity to diſcover. We ſhall here ſubjoin from Dr. Brewſter's edition of Ferguſon's Aſtronomy, the following table.

TABLE for finding the apparent Figure of the Ring, and the Orbits of the four firſt Satellites of Saturn.

Argument. Long. of Saturn + 13° 43′ 30″.				
Deg.	Signs. O. VI. − +	Signs. I. VII. − +	Signs. II. VIII. − +	Deg.
0	0.000	0.260	0.451	30
3	0.027	0.284	0.464	27
6	0.054	0.306	0.476	24
9	0.081	0.328	0.486	21
12	0.108	0.348	0.495	18
15	0.135	0.368	0.503	15
18	0.161	0.387	0.509	12
21	0.187	0.405	0.514	9
24	0.212	0.421	0.518	6
27	0.236	0.437	0.520	3
30	0.260	0.451	0.521	0
Deg.	XI. V. + − Signs.	X. IV. + − Signs.	IX. III. + − Signs.	Deg.

In order to find the figure of Saturn's ring, add 13° 43′ 30″ to the geocentric longitude of Saturn, and with this as an argument, enter the table with the ſigns at the head or foot, and the degrees at the ſide; and the correſponding numbers in the table will expreſs the ſmaller axis of the ring, the greater axis being 1000. This reſult, however, requires a correction, which depends upon the latitude of Saturn. Reduce his latitude, therefore, to ſeconds, and the fourth part of his latitude, thus reduced, being applied to the preceding reſult with the ſign — if his latitude be north, but with the ſign + if his latitude be ſouth, will give the true apparent ſize of the leſſer axis of the ring.

Let it be required, for example, to find the form of Saturn's ring on the 25th of December 1809, when the geocentric longitude of Saturn was 8^s 9° 28′, and his geocentric latitude 1° 37′, or 97′ north.

To the geocentric longitude of Saturn,	8^s 9° 28′ 0″
Add the conſtant quantity, -	13° 43′ 30″
Argument -	8^s 23° 11′ 30″
Which correſponds in the table with	+ 0.517
Apply one-fourth of the latitude, or $\frac{97}{4}$	— 0.024
The ſmaller axis of the ring, -	+ 0.541

Hence the ſmaller axis of Saturn's ring is to its greater axis, at the given time, as 541 is to 1000, ſo that the ring would be very open on the 25th December, and might be eaſily ſeen with a teleſcope. When the ſign + is before the reſult, it indicates, that the moſt diſtant half of the ring is farther north than the centre of Saturn, and, conſequently, that we ſee the upper or northern ſurface of the ring. The oppoſite ſign — indicates, that the moſt diſtant half of the ring is more ſouth than the centre of Saturn, and the ſouthern ſide of the ring is then viſible. The reſult which is thus obtained, marks alſo the figure of the orbit of the four firſt ſatellites of Jupiter.

Saturn performs his courſe round the ſun attended with ſeven ſatellites, or ſecondary planets: the periods, diſtances, &c. of which, ſee under SATELLITES.

There is not perhaps, ſays Dr. Herſchel, (Phil. Tranſ. for 1805, vol. xcv. pt. ii. p. 272.) another object in the heavens that preſents us with ſuch a variety of extraordinary phenomena as the planet Saturn: a magnificent globe, encompaſſed by a ſtupendous double ring; attended by ſeven ſatellites; ornamented with equatorial belts, compreſſed at the poles; turning upon its axis; mutually eclipſing its ring and ſatellites, and eclipſed by them: the moſt diſtant of the rings alſo turning upon its axis, and the ſame taking place with the fartheſt of the ſatellites; all the parts of the ſyſtem of Saturn occaſionally reflecting light to each other; the rings and moons illuminating the nights of the Saturnian: the globe and ſatellites enlightening the dark parts of the rings; and the planet and rings throwing back the ſun's beams upon the moons, when they are deprived of them at the time of their conjunctions.

TABLE I. Epochs of the mean Longitude of Saturn, with the Arguments of the Equations.

Years.		Mean Long. S. D. M. S.	Aphelion. S. D. M. S.	Node. S. D. M. S.	Arg. II.	Arg. III.	Arg. IV.	Arg. V.	Arg. VI.
Nat. J. C.	0	2 0 0 22.4	7 26 2 7	3 6 10 10	2487	9949	9703	220	266
	100	6 23 31 58.8	7 27 52 14	3 7 2 45	2841	6367	2549	974	942
	1400	8 29 22 52.1	8 21 43 44	3 18 26 20	7451	9794	9549	779	732
	1500	1 22 54 28.5	8 23 33 51	3 19 18 55	7806	6212	2395	533	408
B. N. S.	1600	6 16 5 59.0	8 25 23 56	3 20 11 29	8145	2625	5232	286	079
C.	1700	11 9 35 34.8	8 27 14 4	3 21 4 5	8500	9043	8079	040	755
B.	1740	3 19 0 13.4	8 27 58 6	3 21 25 7	8641	5610	1217	742	425
B.	1760	11 23 42 32.6	8 28 20 8	3 21 35 38	8712	8893	7787	093	760
B.	1780	7 28 24 51.9	8 28 42 9	3 21 46 9	8783	2177	4356	444	096
	1786	10 11 48 33.4	8 28 48 46	3 21 49 19	1804	3162	6326	549	496
	1787	10 24 2 10.2	8 28 49 52	3 21 49 50	2308	3326	6655	566	562
B.	1788	11 6 17 47.6	8 28 50 58	3 21 50 21	2812	3490	6983	584	630
	1789	11 18 31 24.4	8 28 52 4	3 21 50 33	3315	3654	7312	602	696
	1790	0 0 45 1.3	8 28 53 10	3 21 51 24	3819	3818	7640	619	760
	1791	0 12 58 38.1	8 28 54 16	3 21 51 56	4322	3982	7969	637	830
B.	1792	0 25 14 15.5	8 28 55 22	3 21 52 27	4826	4146	8297	654	897
	1793	1 7 27 52.3	8 28 56 28	3 21 52 59	5329	4310	8625	672	964
	1794	1 19 41 29.1	8 28 57 34	3 21 53 30	5833	4474	8954	689	030
	1795	2 1 55 5.9	8 28 58 40	3 21 54 2	6337	4639	9282	707	097
B.	1796	2 14 10 43.3	8 28 59 46	3 21 54 33	6840	4803	9611	724	164
	1797	2 26 24 20.2	8 29 0 52	3 21 55 5	7344	4967	9939	742	231
	1798	3 8 37 57.0	8 29 1 58	3 21 55 36	7847	5131	0268	760	297
	1799	3 20 51 33.8	8 29 3 4	3 21 56 8	8351	5295	0596	777	364
C.	1800	4 3 5 10.6	8 29 4 10	3 21 56 40	8854	5459	0925	795	431
	1801	4 15 18 47.4	8 29 5 17	3 21 57 11	9358	5624	1253	812	498
	1802	4 27 32 24.2	8 29 6 23	3 21 57 43	9861	5788	1582	830	564
	1803	5 9 46 1.1	8 29 7 29	3 21 58 14	0365	5952	1910	847	631
B.	1804	5 22 1 38.5	8 29 8 35	3 21 58 46	0868	6116	2238	865	698
	1805	6 4 15 15.3	8 29 9 41	3 21 59 17	1372	6280	2567	882	765
	1806	6 16 28 52.1	8 29 10 47	3 21 59 49	1876	6444	2895	900	831
	1807	6 28 42 28.9	8 29 11 53	3 22 0 20	2379	6609	3224	917	898
B.	1808	7 10 58 6.3	8 29 12 59	3 22 0 52	2883	6773	3552	935	965
	1809	7 23 11 43.1	8 29 14 5	3 22 1 23	3386	6937	4881	952	032
	1810	8 5 25 20.0	8 29 15 11	3 22 1 55	3890	7101	4209	970	099
	1811	8 17 38 56.8	8 29 16 17	3 22 2 27	4393	7265	4538	988	165
B.	1812	8 29 54 34.2	8 29 17 23	3 22 2 58	4897	7429	4866	005	232
	1813	9 12 8 11.0	8 29 18 29	3 22 3 30	5401	7593	5194	023	299
	1814	9 24 21 47.8	8 29 19 35	3 22 4 1	5904	7757	5523	040	366
	1815	10 6 35 24.6	8 29 20 41	3 22 4 33	6408	7922	5851	058	432
B.	1816	10 18 51 2.1	8 29 21 47	3 22 5 4	6911	8086	6180	075	499
	1817	11 1 4 38.9	8 29 22 53	3 22 5 36	7415	8250	6508	093	566
	1818	11 13 18 15.7	8 29 23 59	3 22 6 7	7918	8414	6837	110	633
	1819	11 25 31 52.5	8 29 25 5	3 22 6 39	8422	8578	7165	128	699
B.	1820	0 7 47 29.9	8 29 26 12	3 22 7 10	8925	8742	7494	145	766

TABLE II. Mean Motion of Saturn for *Julian Years*, with the Arguments of the Equations.

	Years.	Mot. in Long.				Mot. Aphelion.				Mot. Node.				Arg. II.	Arg. III.	Arg. IV.	Arg. V.	Arg. VI.
		S.	D.	M.	S.	S.	D.	M.	S.	S.	D.	M.	S.					
	1	0	12	13	36.8	0	0	1	6	0	0	0	32	0504	0164	0328	018	067
	2	0	24	27	13.6	0	0	2	12	0	0	1	3	1007	0328	0657	035	134
	3	1	6	40	50.4	0	0	3	18	0	0	1	35	1511	0493	0985	053	200
B.	4	1	18	56	27.9	0	0	4	24	0	0	2	6	2014	0657	1314	070	267
	5	2	1	10	4.7	0	0	5	30	0	0	2	38	2518	0821	1642	088	334
	6	2	13	23	41.5	0	0	6	36	0	0	3	9	3021	0985	1971	105	401
	7	2	25	37	18.3	0	0	7	42	0	0	3	41	3525	1149	2299	123	467
B.	8	3	7	52	55.7	0	0	8	49	0	0	4	12	4028	1313	2628	140	534
	9	3	20	6	32.5	0	0	9	55	0	0	4	44	4532	1478	2956	158	601
	10	4	2	20	9.3	0	0	11	1	0	0	5	16	5035	1642	3285	175	668
	11	4	14	33	46.2	0	0	12	7	0	0	5	47	5539	1806	3613	193	734
B.	12	4	26	49	23.6	0	0	13	13	0	0	6	19	6043	1970	3942	210	801
	13	5	9	3	0.4	0	0	14	19	0	0	6	50	6546	2134	4270	228	868
	14	5	21	16	37.2	0	0	15	25	0	0	7	22	7050	2298	4598	245	935
	15	6	3	30	14.0	0	0	16	31	0	0	7	53	7553	2463	4927	263	001
B.	16	6	15	45	51.4	0	0	17	37	0	0	8	25	8057	2627	5255	281	068
	17	6	27	59	28.2	0	0	18	43	0	0	8	56	8560	2791	5584	298	135
	18	7	10	13	5.1	0	0	19	49	0	0	9	28	9064	2955	5912	316	202
	19	7	22	26	41.9	0	0	20	55	0	0	9	59	9567	3119	6241	333	268
B.	20	8	4	42	19.3	0	0	22	1	0	0	10	31	0071	3283	6569	351	335
Biſſextiles.	40	4	9	24	38.6	0	0	44	3	0	0	21	2	0142	6567	3138	702	670
	60	0	14	6	57.8	0	1	6	4	0	0	31	33	0213	9850	9707	052	006
	80	8	18	49	17.1	0	1	28	6	0	0	42	4	0284	3134	6277	403	341
	100	4	23	31	36.4	0	1	50	7	0	0	52	35	0355	6417	2846	754	676
	200	9	17	3	12.8	0	3	40	14	0	1	45	10	0709	2835	5692	508	352
	300	2	10	34	49.2	0	5	30	21	0	2	37	45	1064	9252	8538	262	028
	400	7	4	6	25.6	0	7	20	28	0	3	30	20	1418	5670	1385	017	705
	500	11	27	38	2.0	0	9	10	35	0	4	22	55	1773	2087	4230	771	381
	600	4	21	9	38.5	0	11	0	42	0	5	15	30	2128	8505	7077	525	057
	700	9	14	41	14.9	0	12	50	49	0	6	8	5	2482	4922	9922	279	733
	800	2	8	12	51.3	0	14	40	56	0	7	0	40	2837	1340	2769	033	409
	900	7	1	44	27.7	0	16	31	3	0	7	53	15	3191	7757	5615	787	085
	1000	11	25	16	4.1	0	18	21	10	0	8	45	50	3546	4175	8461	542	761
	2000	11	20	32	8.2	1	6	42	20	0	17	31	40	7092	8350	6923	083	523
	3000	11	15	48	12.3	1	25	3	29	0	26	17	30	0638	2525	5384	625	284
	4000	11	11	4	16.4	2	13	24	39	1	5	3	20	4184	6700	3845	166	045
	5000	11	6	20	20.5	3	1	45	49	1	13	49	10	7730	0875	2307	708	806
	6000	11	1	36	24.6	3	20	6	58	1	22	35	0	1276	5049	0768	249	568

TABLE III. Mean Motion of Saturn for *Months*, with the Arguments of the Equations.

Months.	Mot. Long.			Aphel.	Node.	Arg. II.	Arg. III.	Arg. IV.	Arg. V.	Arg. VI.
	D.	M.	S.	SEC.	SEC.					
January	0	0	0.0	0	0	0	0	00	0	0
February	1	2	18.4	6	3	43	14	28	1	6
March	1	58	35.0	10	5	81	27	53	3	11
April	3	0	53.5	17	8	124	41	81	4	17
May	4	1	11.3	21	10	165	54	108	6	22
June	5	3	29.7	27	13	208	68	136	7	28
July	6	3	47.5	33	16	250	81	163	9	33
Auguſt	7	6	5.9	39	18	292	95	191	10	39
September	8	8	24.3	44	21	335	109	219	12	45
October	9	8	42.2	49	24	376	123	246	13	50
November	10	11	0.6	55	26	419	137	273	15	56
December	11	11	18.4	60	29	460	150	301	16	61

TABLE IV. Mean Motion of Saturn for *Hours* and *Minutes*.

Hours.	Mot. Long.		Hours.	Mot. Long.		Min.	Mot. Long.	Min.	Mot. Long.
	M.	S.		M.	S.		SEC.		SEC.
1	0	5.0	13	1	5.3	1	0.1	27	2.2
2	0	10.0	14	1	10.3	2	0.2	30	2.5
3	0	15.1	15	1	15.4	3	0.3	33	2.7
4	0	20.1	16	1	20.4	4	0.3	36	3.0
5	0	25.1	17	1	25.4	5	0.4	39	3.2
6	0	30.1	18	1	30.4	6	0.5	42	3.5
7	0	35.2	19	1	35.5	9	0.7	45	3.7
8	0	40.2	20	1	40.5	12	1.0	48	4.0
9	0	45.2	21	1	45.5	15	1.3	51	4.2
10	0	50.2	22	1	50.5	18	1.5	54	4.5
11	0	55.3	23	1	55.6	21	1.8	57	4.7
12	1	0.3	24	2	0.6	24	2.0	60	5.0

Table V. Mean Motion of Saturn for *Days*, with the Arguments of the Equations.

Days of the Month.	Motion in Longitude.			Mot. Aphel.	Mot. Node.	Arg. II.	Arg. III.	Arg. IV.	Arg. V.	Arg. VI.
	D.	M.	S.	SEC.	SEC.					
1	0	2	0.6	0	0	1	0	1	0	0
2	0	4	1.2	0	0	3	1	2	0	0
3	0	6	1.8	1	0	4	1	3	0	1
4	0	8	2.4	1	0	6	2	4	0	1
5	0	10	3.0	1	0	7	2	5	0	1
6	0	12	3.6	1	1	8	3	5	0	1
7	0	14	4.2	1	1	10	3	6	0	1
8	0	16	4.8	2	1	11	4	7	0	2
9	0	18	5.3	2	1	12	4	8	0	2
10	0	20	5.9	2	1	14	5	9	0	2
11	0	22	6.5	2	1	15	5	10	1	2
12	0	24	7.1	2	1	17	5	11	1	2
13	0	26	7.7	2	1	18	6	12	1	2
14	0	28	8.3	3	1	19	6	13	1	2
15	0	30	8.9	3	1	21	7	13	1	3
16	0	32	9.5	3	1	22	7	14	1	3
17	0	34	10.1	3	1	23	8	15	1	3
18	0	36	10.7	3	2	25	8	16	1	3
19	0	38	11.3	4	2	26	9	17	1	3
20	0	40	11.9	4	2	28	9	18	1	4
21	0	42	12.5	4	2	29	9	19	1	4
22	0	44	13.1	4	2	30	10	20	1	4
23	0	46	13.7	4	2	32	10	21	1	4
24	0	48	14.3	4	2	33	11	22	1	4
25	0	50	14.8	5	2	35	11	23	1	5
26	0	52	15.4	5	2	36	12	23	1	5
27	0	54	16.0	5	2	37	12	24	1	5
28	0	56	16.6	5	2	39	13	25	1	5
29	0	58	17.2	5	3	40	13	26	1	5
30	1	0	17.8	6	3	41	13	27	1	5
31	1	2	18.4	6	3	43	14	28	1	6

In the Months January and February in a Biſſextile Year, ſubtract 1 from the given Day of the Month.

Table VI. The great Inequality of the Motion of Saturn, with the Corrections of the Arguments which regulate the other Inequalities.

Years.	Equation.		Diff.	Change for half Period.	Arg. II.	Arg. III.	Arg. IV.	Arg. V.	Arg. VI.
	M.	S.	SEC.	SEC.					
1550	+ 3	3.8	201.8	2.86	− 2	− 3	− 7	+0	− 1
1560	− 0	18.0	201.3	0.28	+ 0	+ 0	+ 1	−0	+0
1570	3	39.3	200.0	3.42	2	4	8	−1	+1
1580	− 6	59.2	198.0	6.54	5	8	16	−1	1
1590	10	17.2	194.9	9.63	7	12	23	−2	2
1600	13	32.1	190.9	12.68	9	15	30	−2	2
1610	−16	43.0	186.2	15.67	11	19	38	−3	3
1620	19	49.2	180.5	18.58	13	22	45	−3	4
1630	22	49.7	173.9	21.41	15	26	51	−4	4
1640	−25	43.6	166.5	24.13	17	29	57	−4	5
1650	28	30.1	158.5	26.75	19	32	64	−4	5
1660	31	8.6	149.6	29.29	21	35	70	−5	6
1670	−33	38.2	140.0	31.59	22	38	76	−5	6
1680	35	58.2	129.9	33.79	24	40	81	−6	6
1690	38	8.1	119.0	35.83	25	43	86	−6	7
1700	−40	7.1	107.6	37.71	27	45	90	−6	7
1710	41	54.7	95.8	39.41	28	47	94	−7	7
1720	43	30.5	83.5	40.93	29	49	98	−7	8
1730	−44	54.0	70.9	42.25	30	50	101	−7	8
1740	46	4.9	57.9	43.38	30	52	104	−7	8
1750	47	2.8	44.6	44.30	31	53	106	−7	8
1760	−47	47.4	31.1	45.02	32	54	107	−8	9
1770	48	18.5	17.5	45.52	32	54	109	−8	9
1780	48	36.0	3.9	45.81	32	55	109	−8	9
1790	−48	39.9	9.9	45.89	+32	+55	+109	−8	+9
1800	48	30.0	23.4	45.75	32	54	109	−8	9
1810	48	6.6	37.0	45.39	32	54	108	−8	9
1820	−47	29.6	50.2	44.83	31	53	107	−7	8
1830	46	39.4	63.4	44.05	31	52	105	−7	8
1840	45	36.0	76.1	43.07	30	51	103	−7	8
1850	−44	19.9	88.6	41.88	29	50	100	−7	8
1860	42	51.3	100.4	40.51	28	48	96	−6	8
1870	41	10.9	112.1	38.94	27	46	93	−6	7
1880	−39	18.8	122.9	37.18	26	44	88	−6	7
1890	37	15.9	133.5	35.26	25	42	84	−5	7
1900	35	2.4	143.0	33.17	23	40	79	−5	6
1910	−32	39.4	152.2	30.92	22	37	73	−5	5
1920	30	7.2	160.6	28.53	20	34	68	−4	5
1930	27	26.6	168.2	26.00	18	31	62	−4	4
1940	−24	38.4	174.9	23.35	16	28	55	−3	4
1950	21	43.5	181.0	20.60	14	25	49	−3	3
1960	18	42.5	186.1	17.74	12	21	42	−3	3
1970	−15	36.4	190.4	14.81	10	18	35	−2	2
1980	12	26.0	193.7	11.80	8	14	28	−2	2
1990	9	12.3	196.1	8.74	6	10	21	−1	2
2000	5	56.2	197.8	5.64	4	7	13	−1	+1
2010	− 2	38.4	198.3	2.51	+ 2	+ 3	+ 6	−0	+0
2020	− 0	39.9		0.63	− 0	− 1	− 2	+0	−1

SATURN.

Table VII. Equation of Saturn's Orbit for 1750, with the Secular Variation.

Argument I. Long. ♄ cor. by Tab. VI. — Aphelion, or mean Anomaly.

Degrees.	Sig. O.			Sig. I.			Sig. II.			Degrees.
	Equation.	Diff.	Sec. Var.	Equation.	Diff.	Sec. Var.	Equation.	Diff.	Sec. Var.	
	−		+	−		+	−		+	
	D. M. S.	M. S.	SEC.	D. M. S.	M. S.	SEC.	D. M. S.	M. S.	SEC.	
0	0 0 0.0		0.00	3 2 5.0		48.84	5 22 55.0		88.61	30
1	0 6 18.1	6 18.1	1.68	3 7 39.9	5 34.9	50.36	5 26 26.8	3 31.8	89.66	29
2	0 12 36.2	6 18.1	3.35	3 13 11.9	5 32.0	51.88	5 29 53.4	3 26.6	90.70	28
3	0 18 54.1	6 17.9	5.03	3 18 41.0	5 29.1	53.38	5 33 14.6	3 21.2	91.72	27
4	0 25 11.6	6 17.5	6.71	3 24 7.0	5 26.0	54.87	5 36 30.2	3 15.6	92.71	26
5	0 31 28.8	6 17.2	8.38	3 29 29.9	5 22.9	56.35	5 39 40.3	3 10.1	93.67	25
6	0 37 45.6	6 16.8	10.05	3 34 49.6	5 19.7	57.82	5 42 44.9	3 4.6	94.62	24
7	0 44 1.8	6 16.2	11.72	3 40 6.0	5 16.4	59.28	5 45 43.6	2 58.7	95.54	23
8	0 50 17.3	6 15.5	13.39	3 45 19.0	5 13.0	60.72	5 48 36.7	2 53.0	96.44	22
9	0 56 32.1	6 14.8	15.05	3 50 28.5	5 9.5	62.16	5 51 23.8	2 47.2	97.33	21
10	1 2 46.0	6 13.9	16.71	3 55 34.4	5 5.9	63.57	5 54 5.1	2 41.3	98.16	20
11	1 8 59.0	6 13.0	18.37	4 0 36.7	5 2.3	64.98	5 56 40.5	2 35.4	98.99	19
12	1 15 11.0	6 12.0	20.03	4 5 35.3	4 58.6	66.37	5 59 9.8	2 29.3	99.79	18
13	1 21 21.8	6 10.8	21.68	4 10 30.0	4 54.7	67.75	6 1 33.1	2 23.3	100.56	17
14	1 27 31.4	6 9.6	23.33	4 15 20.8	4 50.8	69.11	6 3 50.2	2 17.1	101.31	16
15	1 33 39.8	6 8.4	24.98	4 20 7.7	4 46.9	70.46	6 6 1.1	2 10.9	102.03	15
16	1 39 46.7	6 6.9	26.61	4 24 50.4	4 42.7	71.79	6 8 5.8	2 4.7	102.73	14
17	1 45 52.1	6 5.4	28.24	4 29 29.0	4 38.6	73.10	6 10 4.1	1 58.3	103.39	13
18	1 51 56.0	6 3.9	29.87	4 34 3.3	4 34.3	74.40	6 11 56.1	1 52.0	104.03	12
19	1 57 58.1	6 2.1	31.49	4 38 33.4	4 30.1	75.69	6 13 41.7	1 45.6	104.64	11
20	2 3 58.5	6 0.4	33.09	4 42 59.0	4 25.6	76.96	6 15 20.7	1 39.0	105.23	10
21	2 9 57.1	5 58.6	34.71	4 47 20.1	4 21.1	78.21	6 16 53.3	1 32.6	105.78	9
22	2 15 53.6	5 56.5	36.32	4 51 36.6	4 16.5	79.44	6 18 19.2	1 25.9	106.31	8
23	2 21 48.2	5 54.6	37.91	4 55 48.5	4 11.9	80.65	6 19 38.6	1 19.4	106.81	7
24	2 27 40.6	5 52.4	39.50	4 59 55.7	4 7.2	81.85	6 20 51.3	1 12.7	107.27	6
25	2 33 30.7	5 50.1	41.07	5 3 58.0	4 2.3	83.02	6 21 57.2	1 5.9	107.71	5
26	2 39 18.6	5 47.9	42.65	5 7 55.5	3 57.5	84.18	6 22 56.4	0 59.2	108.12	4
27	2 45 4.0	5 45.4	44.21	5 11 48.0	3 52.5	85.32	6 23 48.8	0 52.4	108.50	3
28	2 50 46.9	5 42.9	45.76	5 15 35.5	3 47.5	86.44	6 24 34.3	0 45.5	108.84	2
29	2 56 27.2	5 40.3	47.31	5 19 17.8	3 42.3	87.54	6 25 13.0	0 38.7	109.16	1
30	3 2 5.0	5 37.8	48.84	5 22 55.0	3 37.2	88.61	6 25 44.7	0 31.7	109.44	0
	+ Sig. XI.		−	+ Sig. X.		−	+ Sig. IX.		−	

TABLE VII. Equation of Saturn's Orbit for 1750, with the Secular Variation.

Argument I. Long. ♄ cor. by Tab. VI. — Aphelion, or mean Anomaly.

Degrees.	Sig. III.			Sig. IV.			Sig. V.			Degrees.
	Equation.	Diff.	Sec. Var.	Equation.	Diff.	Sec. Var.	Equation.	Diff.	Sec. Var.	
	−		+	−		+	−		+	
	D. M. S.	M. S.	SEC.	D. M. S.	M. S.	SEC.	D. M. S.	M. S.	SEC.	
0	6 25 44.7	0 24.7	109.44	5 46 21.1	3 9.4	101.91	3 25 38.8	6 6.7	62.28	30
1	6 26 9.4	0 17.9	109.69	5 43 11.7	3 16.4	101.10	3 19 32.1	6 11.3	60.47	29
2	6 26 27.3	0 10.7	109.91	5 39 55.3	3 23.2	100.25	3 13 20.8	6 15.4	58.64	28
3	6 26 38.0	0 3.7	110.10	5 36 32.1	3 30.1	99.36	3 7 5.4	6 19.6	56.78	27
4	6 26 41.7	0 3.3	110.24	5 33 2.0	3 36.9	98.44	3 0 45.8	6 23.5	54.89	26
5	6 26 38.4	0 10.4	110.37	5 29 25.1	3 43.6	97.48	2 54 22.3	6 27.4	52.98	25
6	6 26 28.0	0 17.6	110.45	5 25 41.5	3 50.3	96.48	2 47 54.9	6 31.1	51.05	24
7	6 26 10.4	0 24.7	110.51	5 21 51.2	3 56.9	95.45	2 41 23.8	6 34.7	49.10	23
8	6 25 45.7	0 31.9	110.53	5 17 54.3	4 3.5	94.38	2 34 49.1	6 38.2	47.12	22
9	6 25 13.8	0 39.1	110.51	5 13 50.8	4 10.2	93.27	2 28 10.9	6 41.5	45.12	21
10	6 24 34.7	0 46.2	110.46	5 9 40.6	4 16.2	92.13	2 21 29.4	6 44.6	43.09	20
11	6 23 48.5	0 53.5	110.37	5 5 24.4	4 22.8	90.96	2 14 44.8	6 47.6	41.07	19
12	6 22 55.0	1 0.6	110.25	5 1 1.6	4 29.1	89.74	2 7 57.2	6 50.5	39.02	18
13	6 21 54.4	1 7.9	110.10	4 56 32.5	4 35.3	88.49	2 1 6.7	6 53.2	36.95	17
14	6 20 46.5	1 15.2	109.91	4 51 27.2	4 41.4	87.21	1 54 13.5	6 55.8	34.86	16
15	6 19 31.3	1 22.4	109.68	4 47 15.8	4 47.5	85.90	1 47 17.7	6 58.2	32.76	15
16	6 18 8.9	1 29.5	109.42	4 42 28.3	4 53.5	84.55	1 40 19.5	7 0.5	30.64	14
17	6 16 39.4	1 36.8	109.12	4 37 34.8	4 59.4	83.16	1 33 19.0	7 2.5	28.51	13
18	6 15 2.6	1 44.1	108.79	4 32 35.4	5 5.2	81.74	1 26 16.5	7 4.5	26.37	12
19	6 13 18.5	1 51.2	108.41	4 27 30.2	5 10.9	80.30	1 19 12.0	7 6.3	24.22	11
20	6 11 27.3	1 58.5	108.01	4 22 19.3	5 16.5	78.81	1 12 5.7	7 7.9	22.05	10
21	6 9 28.8	2 5.7	107.59	4 17 2.8	5 22.0	77.29	1 4 57.8	7 9.4	19.87	9
22	6 7 23.1	2 12.8	107.09	4 11 40.8	5 27.5	75.74	0 57 48.4	7 10.7	17.69	8
23	6 5 10.3	2 20.0	106.57	4 6 13.3	5 32.7	74.16	0 50 37.7	7 11.8	15.49	7
24	6 2 50.3	2 27.1	106.01	4 0 40.6	5 37.9	72.56	0 43 25.9	7 12.8	13.29	6
25	6 0 23.2	2 34.3	105.42	3 55 2.7	5 43.1	70.92	0 36 13.1	7 13.7	11.09	5
26	6 57 48.9	2 41.4	104.79	3 49 19.6	5 48.0	69.25	0 28 59.4	7 14.2	8.87	4
27	6 55 7.5	2 48.4	104.13	3 43 31.6	5 52.9	67.55	0 21 45.2	7 14.8	6.66	3
28	6 52 19.1	2 55.4	103.43	3 37 38.7	5 57.6	65.82	0 14 30.4	7 15.1	4.43	2
29	6 49 23.7	3 2.6	102.69	3 31 41.1	6 2.3	04.06	0 7 15.3	7 15.3	2.22	1
30	6 46 21.1		101.91	3 25 38.8		62.28	0 0 00.0		0.00	0
	+ Sig. VIII.		−	+ Sig. VII.		−	+ Sig. VI.		−	

Table VIII. Equation II. of Saturn, always additive.

Argument II.											
Arg. II.	Equation II.		Diff.	Arg. II.	Equation II.		Diff.	Arg. II.	Equation II.		Diff.
	M.	S.	SEC.		M.	S.	SEC.		M.	S.	SEC.
0	1	3.8	4.7	3400	1	8.6	1.0	6700	0	3.0	1.9
100	0	59.1	4.8	3500	1	7.6	1.3	6800	0	4.9	2.5
200	0	54.3	4.6	3600	1	6.3	1.7	6900	0	7.4	2.9
300	0	49.7	4.4	3700	1	4.6	2.1	7000	0	10.3	3.4
400	0	45.3	4.1	3800	1	2.5	2.3	7100	0	13.7	3.9
500	0	41.2	3.6	3900	1	0.2	2.5	7200	0	17.6	4.3
600	0	37.6	3.2	4000	0	57.7	2.8	7300	0	21.9	4.6
700	0	34.4	2.7	4100	0	54.9	2.9	7400	0	26.5	5.0
800	0	31.7	2.1	4200	0	52.0	3.0	7500	0	31.5	5.3
900	0	29.6	1.5	4300	0	49.0	3.2	7600	0	36.8	5.4
1000	0	28.1	0.8	4400	0	45.8	3.2	7700	0	42.2	5.6
1100	0	27.3	0.3	4500	0	42.6	3.3	7800	0	47.8	5.6
1200	0	27.0	0.4	4600	0	39.3	3.3	7900	0	53.4	5.5
1300	0	27.4	0.9	4700	0	36.0	3.2	8000	0	58.9	5.4
1400	0	28.3	1.5	4800	0	32.8	3.3	8100	1	4.3	5.1
1500	0	29.8	1.9	4900	0	29.5	3.1	8200	1	9.4	4.8
1600	0	31.7	2.3	5000	0	26.4	3.2	8300	1	14.2	4.4
1700	0	34.0	2.7	5100	0	23.2	3.0	8400	1	18.6	3.9
1800	0	36.7	3.0	5200	0	20.2	2.9	8500	1	22.5	3.3
1900	0	39.7	3.2	5300	0	17.3	2.8	8600	1	25.8	2.7
2000	0	42.9	3.2	5400	0	14.5	2.6	8700	1	28.5	2.0
2100	0	46.1	3.3	5500	0	11.9	2.4	8800	1	30.5	1.3
2200	0	49.4	3.2	5600	0	9.5	2.2	8900	1	31.8	0.6
2300	0	52.6	3.1	5700	0	7.3	2.0	9000	1	32.4	0.2
2400	0	55.7	2.9	5800	0	5.3	1.7	9100	1	32.2	0.9
2500	0	58.6	2.7	5900	0	3.6	1.4	9200	1	31.3	1.5
2600	1	1.3	2.3	6000	0	2.2	1.1	9300	1	29.8	2.3
2700	1	3.6	2.0	6100	0	1.1	0.7	9400	1	27.5	2.9
2800	1	5.6	1.6	6200	0	0.4	0.4	9500	1	24.6	3.4
2900	1	7.2	1.1	6300	0	0.0	0.0	9600	1	21.2	3.9
3000	1	8.3	0.7	6400	0	0.0	0.5	9700	1	17.3	4.2
3100	1	9.0	0.3	6500	0	0.5	1.0	9800	1	13.1	4.5
3200	1	9.3	0.2	6600	0	1.5	1.5	9900	1	8.6	4.8
3300	1	9.1	0.5	6700	0	3.0		10000	1	3.8	
3400	1	8.6									

TABLE IX. Equation III. of Saturn, always additive.

Argument III.

Arg. III.	Equation III.		Diff.	Arg. III.	Equation III.		Diff.	Arg. III.	Equation III.		Diff.
	M.	S.	SEC.		M.	S.	SEC.		M.	S.	SEC.
0	8	47.8	25.6	3400	0	19.1	8.7	6700	12	1.8	17.6
100	8	22.2	26.0	3500	0	27.8	10.2	6800	12	19.4	16.4
200	7	56.2	26.2	3600	0	38.0	11.7	6900	12	35.8	15.0
300	7	30.0	26.3	3700	0	49.7	13.2	7000	12	50.8	13.7
400	7	3.7	26.3	3800	1	2.9	14.5	7100	13	4.5	12.2
500	6	37.4	26.2	3900	1	17.4	15.9	7200	13	16.7	10.9
600	6	11.2	26.1	4000	1	33.3	17.2	7300	13	27.4	9.2
700	5	45.1	25.8	4100	1	50.5	18.4	7400	13	36.6	7.6
800	5	19.3	25.4	4200	2	8.9	19.6	7500	13	44.2	6.0
900	4	53.9	24.9	4300	2	28.5	20.6	7600	13	50.2	4.4
1000	4	29.0	24.2	4400	2	49.1	21.6	7700	13	54.6	2.8
1100	4	4.8	23.7	4500	3	10.7	22.5	7800	13	57.4	1.0
1200	3	41.1	22.8	4600	3	33.2	23.4	7900	13	58.4	0.5
1300	3	18.3	21.9	4700	3	56.6	24.1	8000	13	57.9	2.2
1400	2	56.4	21.0	4800	4	20.7	24.7	8100	13	55.7	3.8
1500	2	35.4	19.9	4900	4	45.4	25.2	8200	13	51.9	5.6
1600	2	15.5	18.9	5000	5	10.6	25.6	8300	13	46.3	7.0
1700	1	56.6	17.6	5100	5	36.2	26.0	8400	13	39.3	8.7
1800	1	39.0	16.4	5200	6	2.2	26.2	8500	13	30.6	10.2
1900	1	22.6	15.0	5300	6	28.4	26.3	8600	13	20.4	11.7
2000	1	7.6	13.7	5400	6	54.7	26.3	8700	13	8.7	13.2
2100	0	53.9	12.2	5500	7	21.0	26.3	8800	12	55.5	14.5
2200	0	41.7	10.7	5600	7	47.3	26.0	8900	12	41.0	15.9
2300	0	31.0	9.2	5700	8	13.3	25.8	9000	12	25.1	17.2
2400	0	21.8	7.6	5800	8	39.1	25.4	9100	12	7.9	18.4
2500	0	14.2	6.0	5900	9	4.5	24.9	9200	11	49.5	19.6
2600	0	8.2	4.4	6000	9	29.4	24.2	9300	11	29.9	20.6
2700	0	3.8	2.8	6100	9	53.6	23.7	9400	11	9.3	21.6
2800	0	1.0	1.0	6200	10	17.3	22.8	9500	10	47.7	22.5
2900	0	0.0	0.6	6300	10	40.1	21.9	9600	10	25.2	23.4
3000	0	0.6	2.2	6400	11	2.0	21.0	9700	10	1.8	24.1
3100	0	2.8	3.8	6500	11	23.0	19.9	9800	9	37.7	24.6
3200	0	6.6	5.5	6600	11	42.9	18.9	9900	9	13.1	25.3
3300	0	12.1	7.0	6700	12	1.8		10000	8	47.8	
3400	0	19.1									

Table X. Equation IV. of Saturn, always additive.

Argument IV.

Arg. IV.	Equation IV.		Diff.
	M.	S.	SEC.
0	1	51.7	21.9
100	1	29.8	19.6
200	1	10.2	17.4
300	0	52.8	14.6
400	0	38.2	13.0
500	0	25.2	10.1
600	0	15.1	7.6
700	0	7.5	5.0
800	0	2.5	2.5
900	0	0.0	0.0
1000	0	0.0	2.7
1100	0	2.7	5.1
1200	0	7.8	7.7
1300	0	15.5	10.2
1400	0	25.7	12.8
1500	0	38.5	15.1
1600	0	53.6	17.4
1700	1	11.0	19.8
1800	1	30.8	22.2
1900	1	53.0	23.8
2000	2	16.8	26.1
2100	2	42.9	27.9
2200	3	10.8	29.9
2300	3	40.7	31.5
2400	4	12.2	33.2
2500	4	45.4	34.5
2600	5	19.9	35.8
2700	5	55.7	37.0
2800	6	32.7	38.2
2900	7	10.9	38.9
3000	7	49.8	39.7
3100	8	29.5	40.1
3200	9	9.6	40.6
3300	9	50.2	40.7
3400	10	30.9	

Arg. IV.	Equation IV.		Diff.
	M.	S.	SEC.
3400	10	30.9	40.9
3500	11	11.8	40.8
3600	11	52.6	40.6
3700	12	33.2	40.2
3800	13	13.4	39.6
3900	13	53.0	38.9
4000	14	31.9	37.9
4100	15	9.8	36.9
4200	15	46.7	35.9
4300	16	22.6	34.6
4400	16	57.2	33.0
4500	17	30.2	31.5
4600	18	1.7	29.8
4700	18	31.5	27.8
4800	18	59.3	26.2
4900	19	25.5	24.0
5000	19	49.5	21.9
5100	20	11.4	19.6
5200	20	31.0	17.4
5300	20	48.4	14.6
5400	21	3.0	13.0
5500	21	16.0	10.1
5600	21	26.1	7.6
5700	21	33.7	5.0
5800	21	38.7	2.5
5900	21	41.2	0.0
6000	21	41.2	2.7
6100	21	38.5	5.1
6200	21	33.4	7.7
6300	21	25.7	10.2
6400	21	15.5	12.8
6500	21	2.7	15.1
6600	20	47.6	17.4
6700	20	30.2	

Arg. IV.	Equation IV.		Diff.
	M.	S.	SEC.
6700	20	30.2	19.8
6800	20	10.4	22.2
6900	19	48.2	23.8
7000	19	24.4	26.1
7100	18	58.3	27.9
7200	18	30.4	29.9
7300	18	0.5	31.5
7400	17	29.0	33.2
7500	16	55.8	34.5
7600	16	21.3	35.8
7700	15	45.5	37.0
7800	15	8.5	38.2
7900	14	30.3	38.9
8000	13	51.4	39.7
8100	13	11.7	40.1
8200	12	31.6	40.6
8300	11	51.0	40.7
8400	11	10.3	40.9
8500	10	29.4	40.8
8600	9	48.6	40.6
8700	9	8.0	40.2
8800	8	27.8	39.6
8900	7	48.2	38.9
9000	7	9.3	37.9
9100	6	31.4	36.9
9200	5	54.5	35.9
9300	5	18.6	34.6
9400	4	44.0	33.0
9500	4	11.0	31.5
9600	3	39.5	29.8
9700	3	9.7	27.8
9800	2	41.9	26.2
9900	2	15.7	24.0
10000	1	51.7	

TABLE XI. Equation V. of Saturn, always additive.

Argument V.

Arg. V.	Equation V.		Diff.	Arg. V.	Equation V.		Diff.	Arg. V.	Equation V.		Diff.
	M.	S.	SEC.		M.	S.	SEC.		M.	S.	SEC.
0	0	0.0	0.0	340	1	14.9	2.7	670	1	14.8	2.7
10	0	0.0	0.2	350	1	17.6	2.5	680	1	12.1	2.9
20	0	0.2	0.5	360	1	20.1	2.4	690	1	9.2	2.9
30	0	0.7	0.6	370	1	22.5	2.3	700	1	6.3	3.0
40	0	1.3	0.7	380	1	24.8	2.1	710	1	3.3	3.0
50	0	2.0	1.0	390	1	26.9	2.0	720	1	0.3	3.1
60	0	3.0	1.2	400	1	28.9	1.8	730	0	57.2	3.1
70	0	4.2	1.3	410	1	30.7	1.7	740	0	54.1	3.1
80	0	5.5	1.5	420	1	32.4	1.5	750	0	51.0	3.1
90	0	7.0	1.7	430	1	33.9	1.3	760	0	47.9	3.1
100	0	8.7	1.8	440	1	35.2	1.1	770	0	44.8	3.1
110	0	10.5	1.9	450	1	36.3	1.0	780	0	41.7	3.1
120	0	12.4	2.2	460	1	37.3	0.8	790	0	38.6	3.0
130	0	14.6	2.2	470	1	38.1	0.5	800	0	35.6	2.9
140	0	16.8	2.4	480	1	38.6	0.3	810	0	32.7	2.9
150	0	19.2	2.5	490	1	38.9	0.3	820	0	29.8	2.8
160	0	21.7	2.7	500	1	39.2	0.0	830	0	27.0	2.7
170	0	24.4	2.7	510	1	39.2	0.2	840	0	24.3	2.7
180	0	27.1	2.9	520	1	39.0	0.5	850	0	21.6	2.5
190	0	30.0	2.9	530	1	38.5	0.6	860	0	19.1	2.4
200	0	32.9	3.0	540	1	37.9	0.7	870	0	16.7	2.3
210	0	35.9	3.0	550	1	37.2	1.0	880	0	14.4	2.1
220	0	38.9	3.1	560	1	36.2	1.2	890	0	12.3	2.0
230	0	42.0	3.1	570	1	35.0	1.3	900	0	10.3	1.8
240	0	45.1	3.1	580	1	33.7	1.5	910	0	8.5	1.7
250	0	48.2	3.1	590	1	32.2	1.7	920	0	6.8	1.5
260	0	51.3	3.1	600	1	30.5	1.8	930	0	5.3	1.3
270	0	54.4	3.1	610	1	28.7	1.9	940	0	4.0	1.1
280	0	57.5	3.1	620	1	26.8	2.2	950	0	2.9	1.0
290	1	0.6	3.0	630	1	24.6	2.2	960	0	1.9	0.8
300	1	3.6	2.9	640	1	22.4	2.4	970	0	1.1	0.5
310	1	6.5	2.9	650	1	20.0	2.5	980	0	0.6	0.3
320	1	9.4	2.8	660	1	17.5	2.7	990	0	0.3	0.3
330	1	12.2	2.7	670	1	14.8		1000	0	0.0	
340	1	14.9									

TABLE XII. Equation VI. of Saturn, always additive.

Arg. VI.	Equat. VI. sec.	Arg. VI.	Equat. VI. sec.	Arg. VI.	Equat. VI. sec.
0	13.7	340	9.0	670	43.5
10	13.5	350	10.2	680	43.6
20	11.2	360	11.4	690	43.6
30	10.1	370	12.6	700	43.6
40	9.0	380	13.8	710	43.4
50	7.9	390	15.1	720	43.2
60	6.8	400	16.4	730	42.9
70	5.8	410	17.7	740	42.5
80	4.9	420	19.1	750	42.0
90	4.1	430	20.5	760	41.5
100	3.3	440	21.8	770	40.9
110	2.6	450	23.2	780	40.1
120	2.0	460	24.6	790	39.3
130	1.4	470	25.9	800	38.5
140	1.0	480	27.2	810	37.6
150	0.6	490	28.6	820	36.7
160	0.3	500	29.9	830	35.7
170	0.1	510	31.1	840	34.6
180	0.0	520	32.4	850	33.4
190	0.0	530	33.5	860	32.2
200	0.0	540	34.6	870	31.0
210	0.2	550	35.7	880	29.8
220	0.4	560	36.8	890	28.5
230	0.7	570	37.8	900	27.2
240	1.1	580	38.7	910	25.9
250	1.6	590	39.5	920	24.5
260	2.1	600	40.3	930	23.1
270	2.7	610	41.0	940	21.8
280	3.5	620	41.6	950	20.4
290	4.3	630	42.2	960	19.0
300	5.1	640	42.6	970	17.7
310	6.0	650	43.0	980	16.4
320	6.9	660	43.3	990	15.0
330	7.9	670	43.5	1000	13.7
340	9.0				

TABLE XIII. Equation VII. of Saturn, always additive.

Arg. VII.	Equat. VII. sec.	Arg. VII.	Equat. VII. sec.	Arg. VII.	Equat. VII. sec.
0	22.0	340	5.1	670	5.7
10	22.0	350	4.6	680	6.4
20	21.9	360	4.0	690	7.0
30	21.8	370	3.5	700	7.6
40	21.7	380	3.0	710	8.3
50	21.5	390	2.5	720	9.0
60	21.2	400	2.1	730	9.7
70	21.0	410	1.7	740	10.3
80	20.7	420	1.3	750	11.0
90	20.3	430	1.0	760	11.7
100	19.9	440	0.8	770	12.3
110	19.5	450	0.5	780	13.0
120	19.0	460	0.3	790	13.7
130	18.5	470	0.2	800	14.4
140	18.0	480	0.1	810	15.0
150	17.4	490	0.0	820	15.6
160	16.9	500	0.0	830	16.3
170	16.3	510	0.0	840	16.9
180	15.6	520	0.1	850	17.4
190	15.0	530	0.2	860	18.0
200	14.4	540	0.3	870	18.5
210	13.7	550	0.5	880	19.0
220	13.0	560	0.8	890	19.5
230	12.3	570	1.0	900	19.9
240	11.7	580	1.3	910	20.3
250	11.0	590	1.7	920	20.7
260	10.3	600	2.1	930	21.0
270	9.7	610	2.5	940	21.2
280	9.0	620	3.0	950	21.5
290	8.3	630	3.5	960	21.7
300	7.6	640	4.0	970	21.8
310	7.0	650	4.6	980	21.9
320	6.4	660	5.1	990	22.0
330	5.7	670	5.7	1000	22.0
340	5.1				

TABLE XIV. Radius Vector of Saturn's Orbit for 1750, with the Secular Variation.

Argument I. The mean Anomaly.										
	Sig. O.			Sig. I.			Sig. II.			
Deg.	Rad. Vect.	Diff.	Secular Variation.	Rad. Vect.	Diff.	Secular Variation.	Rad. Vect.	Diff.	Secular Variation.	Deg.
			— 0.00			— 0 00			— 0.00	
0	10.05389		253.5	9.98904		226.8	9.80735		148.2	30
1	10.05382	7	253.5	9.98473	431	224.9	9.79966	769	144.8	29
2	10.05360	22	253.4	9.98028	445	223.0	9.79189	777	141.3	28
3	10.05323	37	253.3	9.97570	458	221.1	9.78403	786	137.8	27
4	10.05272	51	253.0	9.97099	471	219.0	9.77608	795	134.2	26
5	10.05206	66	252.7	9.96615	484	217.1	9.76805	803	130.6	25
6	10.05126	80	252.4	9.96119	496	215.0	9.75995	810	127.0	24
7	10.05031	95	252.0	9.95610	509	212.9	9.75177	818	123.3	23
8	10.04921	110	251.5	9.95089	521	210.6	9.74351	826	119.5	22
9	10.04797	124	251.0	9.94555	534	208.3	9.73518	833	115.8	21
10	10.04658	139	250.5	9.94008	547	206.0	9 72678	840	112.0	20
11	10.04505	153	249.8	9.93450	558	203.6	9.71831	847	108.1	19
12	10.04337	168	249.1	9.92880	570	201.2	9.70978	853	104.2	18
13	10.04155	182	248.4	9.92298	582	198.7	9.70118	860	100.3	17
14	10.03959	196	247.5	9.91704	594	196.1	9.69252	866	096.3	16
15	10.03748	211	246.8	9 91099	605	193.5	9.68380	872	092.2	15
16	10.03523	225	245.9	9.90482	617	190.9	9.67502	878	088.2	14
17	10.03283	240	244.8	9.89854	628	188.2	9.66619	883	084.2	13
18	10.03030	253	243.8	9.89215	639	185.4	9.65738	888	080.1	12
19	10.02762	268	242.7	9.88565	650	182.6	9.64839	892	076.0	11
20	10.02481	281	241.5	9.87904	661	179.8	9.63940	899	071.8	10
21	10.02185	296	240.4	9.87232	672	176.8	9.63036	904	067.6	9
22	10.01875	310	239.0	9.86549	683	173.9	9.62130	906	063.4	8
23	10.01552	323	237.6	9.85857	692	170.8	9.61220	910	059.1	7
24	10.01215	337	236.3	9.85155	702	167.7	9.60306	914	054.8	6
25	10.00863	352	234.9	9.84442	713	164.6	9.59388	918	050.5	5
26	10.00498	365	233.4	9.83720	722	161.5	9.58468	920	046.2	4
27	10.00120	378	231.8	9.82988	732	158.2	9.57544	924	041.8	3
28	9 99727	393	230.1	9.82246	742	154.9	9.56618	926	037.4	2
29	9.99322	405	228.4	9.81495	751	151.6	9.55689	929	033.0	1
30	9.98904	418	226.8	9.80735	760	148.2	9.54758	931	028.6	0
	Sig. XI.		—	Sig. X.		—	Sig. IX.		—	

TABLE XV. Radius Vector of Jupiter's Orbit for 1750, with the Secular Variation.

Argument I. The mean Anomaly.										
	Sig. III.			Sig. IV.			Sig. V.			
Deg.	Rad. Vect.	Diff.	Secular Variation. − 0.00	Rad. Vect.	Diff.	Secular Variation. + 0.00	Rad. Vect.	Diff.	Secular Variation. + 0.00	Deg.
0	9.54758	936	028.6	9.27222	851	105.2	9.06107	505	212.4	30
1	9.53822	938	024.2	9.26371	844	109.6	9.05602	490	215.0	29
2	9.52884	938	019.8	9.25527	836	113.7	9.05112	476	217.5	28
3	9.51946	940	015.2	9.24691	828	118.0	9.04636	460	220.0	27
4	9.51006	940	010.8	9.23863	820	122.1	9.04176	443	222.2	26
5	9.50066	941	006.3	9.23043	811	126.2	9.03733	428	224.7	25
6	9.49125	941	001.8	9.22232	801	130.3	9.03305	411	226.9	24
7	9.48184	940	002.7	9.21431	793	134.4	9.02894	395	229.0	23
8	9.47244	940	007.2	9.20638	783	138.8	9.02499	378	231.0	22
9	9.46304	939	011.8	9.19855	773	142.2	9.02121	363	233.0	21
10	9.45365	939	016.3	9.19082	763	146.2	9.01758	346	234.9	20
11	9.44426	936	020.8	9.18319	752	150.0	9.01412	328	236.7	19
12	9.43490	935	025.3	9.17567	741	153.8	9.01084	311	238.4	18
13	9.42555	933	029.8	9.16826	731	157.6	9.00773	295	240.0	17
14	9.41622	931	034.3	9.16095	720	161.3	9.00478	277	241.5	16
15	9.40691	928	038.9	9.15375	708	164.9	9.00201	260	243.0	15
16	9.39763	925	043.5	9.14667	696	168.5	8.99941	243	244.3	14
17	9.38838	921	047.9	9.13971	684	172.1	8.99698	224	245.6	13
18	9.37917	918	052.4	9.13287	672	175.6	8.99474	207	246.7	12
19	9.36999	915	056.9	9.12615	659	179.0	8.99267	190	247.8	11
20	9.36084	910	061.4	9.11956	646	182.4	8.99077	171	248.7	10
21	9.35174	905	066.0	9.11310	633	185.7	8.98906	154	249.7	9
22	9.34269	901	070.3	9.10677	620	189.0	8.98752	136	250.5	8
23	9.33368	896	074.7	9.10057	607	192.1	8.98616	117	251.2	7
24	9.32472	890	079.2	9.09450	593	195.2	8.98499	100	251.8	6
25	9.31582	885	083.6	9.08857	579	198.3	8.98399	82	252.3	5
26	9.30697	879	088.0	9.08278	565	201.2	8.98317	64	252.8	4
27	9.29818	872	092.4	9.07713	550	204.1	8.98253	45	253.1	3
28	9.28946	865	096.7	9.07163	535	207.0	8.98208	27	253.4	2
29	9.28081	859	101.0	9.06628	521	209.7	8.98181	9	253.5	1
30	9.27222		105.2	9.06107		212.4	8.98172		253.5	0
	Sig. VIII.		0.00 +	Sig. VII.		0.00 +	Sig. VI.		0.00 +	

TABLE XVI. Equations of the Radius Vector, always additive.

Arg. II.	Equation II.		Arg. II.	Arg. III.	Equation III.		Arg. III.	Equation III.	
	0.0	Diff.			0.0	Diff.		0.0	Diff.
0	1629		10000	0	1053		5000	0018	
100	1626	3	9900	100	1061	8	5100	0010	8
200	1618	8	9800	200	1067	6	5200	0005	5
300	1605	13	9700	300	1070	3	5300	0001	4
400	1586	19	9600	400	1072	2	5400	0000	1
500	1562	24	9500	500	1071	1	5500	0001	1
600	1534	28	9400	600	1068	3	5600	0004	3
700	1501	33	9300	700	1063	5	5700	0008	4
800	1464	37	9200	800	1056	7	5800	0015	7
900	1423	41	9100	900	1047	9	5900	0024	9
1000	1378	45	9000	1000	1036	11	6000	0035	11
1100	1329	49	8900	1100	1023	13	6100	0049	14
1200	1278	51	8800	1200	1008	15	6200	0064	15
1300	1225	53	8700	1300	0991	17	6300	0080	16
1400	1169	56	8600	1400	0973	18	6400	0099	19
1500	1112	57	8500	1500	0952	21	6500	0119	20
1600	1053	59	8400	1600	0931	21	6600	0141	22
1700	0994	59	8300	1700	0907	24	6700	0165	24
1800	0935	59	8200	1800	0882	25	6800	0190	25
1900	0875	60	8100	1900	0856	26	6900	0216	26
2000	0816	59	8000	2000	0828	28	7000	0244	28
2100	0757	59	7900	2100	0799	29	7100	0273	29
2200	0700	57	7800	2200	0769	30	7200	0303	30
2300	0644	56	7700	2300	0738	31	7300	0334	31
2400	0590	54	7600	2400	0707	31	7400	0365	31
2500	0538	52	7500	2500	0675	32	7500	0397	32
2600	0488	50	7400	2600	0642	33	7600	0430	33
2700	0440	48	7300	2700	0609	33	7700	0463	33
2800	0395	45	7200	2800	0575	34	7800	0496	33
2900	0352	43	7100	2900	0542	33	7900	0530	34
3000	0312	40	7000	3000	0508	34	8000	0564	34
3100	0275	37	6900	3100	0474	34	8100	0597	33
3200	0241	34	6800	3200	0441	33	8200	0631	34
3300	0210	31	6700	3300	0408	33	8300	0664	33
3400	0181	29	6600	3400	0376	32	8400	0696	32
3500	0155	26	6500	3500	0344	32	8500	0728	32
3600	0131	24	6400	3600	0313	31	8600	0759	31
3700	0110	21	6300	3700	0283	30	8700	0789	30
3800	0091	19	6200	3800	0254	29	8800	0818	29
3900	0074	17	6100	3900	0226	28	8900	0846	28
4000	0060	14	6000	4000	0199	27	9000	0873	27
4100	0047	13	5900	4100	0173	26	9100	0899	26
4200	0036	11	5800	4200	0149	24	9200	0923	24
4300	0027	9	5700	4300	0127	22	9300	0945	22
4400	0020	7	5600	4400	0106	21	9400	0966	21
4500	0013	7	5500	4500	0087	19	9500	0985	19
4600	0008	5	5400	4600	0069	18	9600	1003	18
4700	0005	3	5300	4700	0053	16	9700	1018	15
4800	0002	3	5200	4800	0040	13	9800	1032	14
4900	0000	2	5100	4900	0028	12	9900	1044	12
5000	0000	0	5000	5000	0018	10	10000	1054	10

TABLE XVII. Equations of the Radius Vector, always additive.

Arg. IV.	Equation IV. 0.0	Equation IV. Diff.	Arg. IV.	Equation IV. 0.0	Equation IV. Diff.	Arg. IV.	Equation IV. 0.0	Equation IV. Diff.	Arg. IV.	Equation IV. 0.0	Equation IV. Diff.
0	2346	80	2500	0258	50	5000	0659	80	7500	2746	51
100	2266	83	2600	0208	46	5100	0739	83	7600	2797	45
200	2183	85	2700	0162	40	5200	0822	85	7700	2842	40
300	2098	88	2800	0122	34	5300	0907	88	7800	2882	35
400	2010	90	2900	0088	29	5400	0995	90	7900	2917	29
500	1920	92	3000	0059	24	5500	1085	91	8000	2946	23
600	1828	92	3100	0035	17	5600	1176	93	8100	2969	18
700	1736	94	3200	0018	12	5700	1269	94	8200	2987	12
800	1642	94	3300	0006	6	5800	1363	94	8300	2999	6
900	1548	95	3400	0000	0	5900	1457	94	8400	3005	1
1000	1453	94	3500	0000	6	6000	1551	95	8500	3004	6
1100	1359	94	3600	0006	12	6100	1646	93	8600	2998	11
1200	1265	92	3700	0018	18	6200	1739	93	8700	2987	18
1300	1173	92	3800	0036	24	6300	1832	91	8800	2969	24
1400	1081	90	3900	0080	29	6400	1923	90	8900	2945	29
1500	0991	87	4000	0089	35	6500	2013	88	9000	2916	35
1600	0904	86	4100	0124	40	6600	2101	85	9100	2881	40
1700	0818	82	4200	0164	46	6700	2186	83	9200	2841	46
1800	0736	80	4300	0210	50	6800	2269	80	9300	2795	51
1900	0656	76	4400	0260	56	6900	2349	76	9400	2744	55
2000	0580	73	4500	0316	60	7000	2425	73	9500	2689	60
2100	0507	69	4600	0376	65	7100	2498	68	9600	2629	65
2200	0438	64	4700	0441	69	7200	2566	65	9700	2564	69
2300	0374	60	4800	0510	73	7300	2631	60	9800	2495	73
2400	0314	56	4900	0583	76	7400	2691	55	9900	2422	76
2500	0258		5000	0659		7500	2746		10000	2346	

TABLE XVIII. Heliocentric Latitude for 1750, with the Secular Variation.

Argument VIII. Longitude of Saturn — that of the Node.

Deg.	Latitude.	Differ.	Sec. Var.	Latitude.	Differ.	Sec. Var.	Latitude.	Differ.	Sec. Var.	Deg.
	Sig. 0 N.		—	Sig. I. N.		—	Sig. II. N.		—	
	Sig. V. S.		—	Sig. VII. S.		—	Sig. VIII. S.		—	
	D. M. S.	M. S.	SEC.	D. M. S.	M. S.	SEC.	D. M. S.	M. S.	SEC.	
0	0 0 0		0.0	1 14 56		8.0	2 9 49		13.9	30
		2 37			2 16			1 17		
1	0 2 37		0.3	1 17 12		8.3	2 11 6		14.1	29
		2 37			2 14			1 15		
2	0 5 14		0.6	1 19 26		8.5	2 12 21		14.2	28
		2 37			2 12			1 13		
3	0 7 51		0.9	1 21 38		8.7	2 13 34		14.3	27
		2 36			2 11			1 10		
4	0 10 27		1.2	1 23 49		8.9	2 14 44		14.4	26
		2 37			2 9			1 8		
5	0 13 4		1.5	1 25 58		9.2	2 15 52		14.5	25
		2 36			2 8			1 5		
6	0 15 40		1.7	1 28 6		9.4	2 16 57		14.6	24
		2 36			2 6			1 3		
7	0 18 16		2.0	1 30 12		9.7	2 18 0		14.7	23
		2 36			2 5			1 0		
8	0 20 52		2.3	1 32 17		9.9	2 19 0		14.8	22
		2 35			2 3			0 57		
9	0 23 27		2.5	1 34 20		10.1	2 19 57		14.9	21
		2 35			2 1			0 55		
10	0 26 2		2.8	1 36 21		10.3	2 20 52		15.0	20
		2 34			1 59			0 53		
11	0 28 36		3.1	1 38 20		10.5	2 21 45		15.1	19
		2 34			1 58			0 50		
12	0 31 10		3.3	1 40 18		10.7	2 22 35		15.2	18
		2 33			1 56			0 47		
13	0 33 43		3.6	1 42 14		10.9	2 23 22		15.2	17
		2 32			1 54			0 44		
14	0 36 15		3.9	1 44 8		11.9	2 24 6		15.3	16
		2 32			1 51			0 42		
15	0 38 47		4.1	1 45 59		11.3	2 24 48		15.4	15
		2 32			1 50			0 40		
16	0 41 19		4.4	1 47 49		11.5	2 25 28		15.5	14
		2 30			1 49			0 36		
17	0 43 49		4.7	1 49 38		11.7	2 26 4		15.5	13
		2 30			1 46			0 34		
18	0 46 19		4.9	1 51 24		11.9	2 26 38		15.6	12
		2 29			1 44			0 32		
19	0 48 48		5.2	1 53 8		12.1	2 27 10		15.6	11
		2 28			1 42			0 28		
20	0 51 16		5.5	1 54 50		12.3	2 27 38		15.7	10
		2 27			1 40			0 26		
21	0 53 43		5.7	1 56 30		12.4	2 28 4		15.7	9
		2 26			1 37			0 23		
22	0 56 9		6.0	1 58 7		12.6	2 28 27		15.8	8
		2 25			1 36			0 21		
23	0 58 34		6.3	1 59 43		12.8	2 28 48		15.8	7
		2 24			1 33			0 18		
24	1 0 58		6.5	2 1 16		12.9	2 29 6		15.9	6
		2 23			1 31			0 15		
25	1 3 21		6.8	2 2 47		13.1	2 29 21		15.9	5
		2 21			1 29			0 12		
26	1 5 42		7.1	2 4 16		13.3	2 29 23		15.9	4
		2 21			1 27			0 10		
27	1 8 3		7.3	2 5 43		13.4	2 29 43		16.0	3
		2 19			1 24			0 7		
28	1 10 22		7.6	2 7 7		13.6	2 29 50		16.0	2
		2 18			1 22			0 4		
29	1 12 40		7.8	2 8 29		13.8	2 29 54		16.0	1
		2 16			1 20			0 1		
30	1 14 56		8.0	2 9 49		13.9	2 29 55		16.0	0
	Sig. XI. S.		—	Sig. X. S.		—	Sig. IX. S.		—	
	Sig. V. N.		—	Sig. IV. N.		—	Sig. III. N.		—	

For any time before 1750, the Secular Variation changes the Sign.

SATURN.

TABLE XIX. Reduction to the Ecliptic, and the Logarithm of the Coſine of the Heliocentric Latitude.

Argument VIII. Longitude of Saturn — that of the Node.

Deg.	Reduct. to Eclipt. Sig. O. — Sig. VI. — SEC.	Log. coſin. Lat. helioc.	Reduct. to Eclipt. Sig. I. — Sig. VII. — SEC.	Log. coſin. Lat. helioc.	Reduct. to Eclipt. Sig. II. — Sig. VIII. — SEC.	Log. coſin. Lat. helioc.	Deg.
0	0.0	0.000000	84.9	9.999897	84.9	9.999690	30
1	3.4	0.000000	86.6	9.999891	83.2	9.999683	29
2	6.8	9.999999	88.1	9.999884	81.3	9.999678	28
3	10.2	9.999999	89.6	9.999877	79.3	9.999672	27
4	13.6	9.999998	90.9	9.999871	77.3	9.999666	26
5	17.0	9.999997	92.1	9.999864	75.1	9.999661	25
6	20.3	9.999996	93.2	9.999857	72.9	9.999655	24
7	23.7	9.999994	94.3	9.999851	70.5	9.999650	23
8	27.0	9.999992	95.2	9.999843	68.1	9.999645	22
9	30.3	9.999990	95.9	9.999836	65.6	9.999640	21
10	33.5	9.999988	96.6	9.999829	63.0	9.999635	20
11	36.7	9.999985	97.1	9.999822	60.4	9.999631	19
12	39.9	9.999982	97.5	9.999815	57.6	9.999626	18
13	43.0	9.999979	97.8	9.999808	54.8	9.999622	17
14	46.0	9.999976	98.0	9.992801	52.0	9.999618	16
15	49.0	9.999972	98.1	9.999794	49.0	9.999615	15
16	52.0	9.999969	98.0	9.999786	46.0	9.999611	14
17	54.8	9.999965	97.8	9.999779	43.0	9.999608	13
18	57.6	9.999961	97.5	9.999772	39.9	9.999605	12
19	60.4	9.999956	97.1	9.999765	36.7	9.999602	11
20	63.0	9.999952	96.6	9.999758	33.5	9.999599	10
21	65.6	9.999947	95.9	9.999751	30.3	9.999597	9
22	68.1	9.999942	95.2	9.999743	27.0	9.999595	8
23	70.5	9.999937	94.3	9.999737	23.7	9.999593	7
24	72.9	9.999932	93.2	9.999730	20.3	9.999591	6
25	75.1	9.999926	92.1	9.999723	17.0	9.999590	5
26	77.3	9.999921	90.9	9.999716	13.6	9.999589	4
27	79.3	9.999914	89.6	9.999710	10.2	9.999588	3
28	81.3	9.999909	88.1	9.999703	6.8	9.999587	2
29	83.2	9.999903	86.6	9.999697	3.4	9.999587	1
30	84.9	9.999897	84.9	9.999690	0.0	9.999587	0
	Sig. XI. +		Sig. X. +		Sig. IX. +		
	Sig. V. +		Sig. IV. +		Sig. III. +		

On

On the Tables of Saturn.

The tables of Saturn are in all reſpects ſimilar to thoſe of Jupiter. The theory of the equations was given by M. de la Place in the Memoirs for 1785, 1786; and were computed by M. de Lambre. Table I. contains the epochs of the mean longitude, of the aphelion and node, reckoned from the mean equinox; together with the arguments of the equations, expreſſed by dividing the circle into 10000 equal parts for Arguments II, III, IV, and into 1000 equal parts for Arguments V, VI. Table II. contains the mean motions of the ſame for years. Table III. contains the mean motions for months; that is, for the beginning of each month reckoned from the beginning of the year. Table IV. contains the mean motion for days. Table V. contains the mean motion for hours and minutes. Table VI. contains the great equation for Saturn for every 10 years. Table VII. contains the equation of the orbit of Saturn for the year 1750, with the ſecular variation. Table VIII. contains the equation of the orbit correſponding to Argument II. Table IX. contains the equation anſwering to Argument III. Table X. contains the equation anſwering to Argument IV. Table XI. contains the equation anſwering to Argument V. Table XII. contains the equation anſwering to Argument VI. Table XIII. contains the equation anſwering to Argument VII, which Arg. = Arg. V + Arg. VI − 306. Table XIV. contains the radius vector of the orbit of Saturn for the year 1750, with the ſecular variation; the mean diſtance of the earth from the ſun being unity. Table XV. contains the equation of the radius vector anſwering to Argument II. Table XVI. contains the equation anſwering to Argument III. Table XVII. contains the equation anſwering to Argument IV. Table XVIII. contains the heliocentric latitude for the year 1750, with the ſecular variation. Table XIX. contains the reduction to the ecliptic, with the log. coſine of the heliocentric latitude.

All the above-mentioned equations, the equation of the orbit excepted, ariſe from the attraction of Jupiter, and depend upon the relative ſituations of Jupiter and Saturn. The arguments of the equations in the firſt four tables, are in every reſpect ſimilar to thoſe in the firſt four tables of Jupiter. See Jupiter.

The great equation of Saturn we have already ſtated to be

$$-\ (48'\,44'' - a \times 0''.1) \times \text{ſin.}\,(5\,S - 2\,I + 5^\circ\,34'\,8'' - a \times 58''.88)$$

And the ſame notation remaining, the other equations are

$$\begin{array}{l}
+\ 20'' \times \text{ſin.}\ (H - h + 69^\circ\,38'\,40'') - 31''.5 \times \text{ſin.}\ 2\ (H - h) + 6''.6 \times \text{ſin.}\ 3\ (H - h) \\
-\ \ 6'\,59''.3 \times \text{ſin.}\ (\ H - 2\,h - 15^\circ\ \ 0'\ 57'' + a \times 14''.215) \\
-\ 10\ \ 51.0 \times \text{ſin.}\ (2\,H - 4\,h + 55\ \ 52\ \ 19\ + a \times 42.88) \\
-\qquad 49.6 \times \text{ſin.}\ (3\,h - H + 88\ \ 20\ \ 19) \\
-\qquad 21.8 \times \text{ſin.}\ (2\,H - 3\,h + 21\ \ 50\ \ 35) \\
+\qquad 11.0 \times \text{coſ.}\ H.
\end{array}$$

Now the ſum of the maxima of theſe ſix equations, is 19′ 57″.3; and in the tables computed from theſe equations, each equation is increaſed by its maximum, in order to render all the equations additive, this quantity therefore muſt always be ſubtracted from the ſum of the equations taken from the tables.

To find the heliocentric Latitude and Longitude of Saturn.

From Table I. take out the epochs of the mean longitude, the aphelion and node, with the Arguments II, III, IV, V, VI; and place them in an horizontal line. But if the given year be not found in that table, take the neareſt year preceding the given year, as an epoch, and take out as before. Under which, from Table II, place the mean motion in longitude, of the aphelion and node, with the arguments, anſwering to the number of years elapſed ſince the epoch, to the given year.

Under theſe, write down (Table III.) the mean motions of the ſame, for the given month.

Under theſe, write down (Table IV.) the mean motions of the ſame, for the given day of the month.

Under theſe, write down (Table V.) the mean motions of the ſame, for hours and minutes.

Under theſe, write down the great inequality (Table VI.) in the firſt column, with the correſponding arguments.

Add together the numbers in the ſeveral columns, rejecting 12 S, or any multiple thereof, if they occur; and in the arguments, rejecting 10000 in the Arguments II, III, IV, and 1000 in the Arguments V, VI, VII, or any multiples thereof; and you get the mean longitude corrected for the great equation, the aphelion, and the node, and the arguments corrected for the great equation.

From the longitude of Saturn corrected for the great equation, as already found, ſubtract the longitude of the aphelion, and you have Argument I. or mean anomaly.

With Argument I. take out the equation of Saturn's orbit in Table VII, together with the ſecular variation, with their proper ſigns, except the time be *before* 1750, in which caſe, the ſecular variation is to be taken out with a contrary ſign, making proportion for the minutes and ſeconds of the argument, and you firſt get the equation; and doing the ſame for the ſecular variation, you get alſo the ſecular variation; then ſay, 100 : the number of years from 1750 to the given time :: ſecular variation above found : the ſecular variation required. *Before* 1750, the ſecular variation muſt be taken with a ſign contrary to that found in the table. With Argument II. take out the equation in Table VIII, making proportion in this, and in the following equations, for the intermediate numbers of the arguments. With Argument III. take out the equation in Table IX. With Argument IV. take out the equation in Table X. With Argument V. take out the equation in Table XI. With Argument VI. take out the equation in Table XII. With Argument VII. take out the equation in Table XIII. Take the ſum of all theſe equations (regard being had to the ſigns of the firſt equation and the ſecular variation, the ſigns of the others being all poſitive), and from it ſubtract 19′ 57″.3, and you have the value of theſe ſeven equations; and this applied, with its proper ſign, to the longitude already found, as corrected by the great equation, gives the longitude of Saturn in his orbit.

From the longitude thus found, ſubtract the longitude of the node, and you get Argument VIII.

With Argument VIII. enter Table XIX. and take out the reduction to the ecliptic, with its proper ſign, making proportion for the minutes and ſeconds of the arguments; and this applied to the longitude of Saturn in his orbit, gives his true heliocentric longitude on the ecliptic, reckoned from the mean equinox.

With Argument VIII. enter Table XVIII. and take out the latitude with its ſecular variation, making proportion for the minutes and ſeconds of the argument, and apply the ſecular variation, according to its ſign, to the latitude, and you have the true heliocentric latitude of Saturn.

With the mean anomaly of Saturn, enter Table XIV. and take out the radius vector, and correct it by the following tables, and you have the true diſtance of Saturn from the ſun.

Example. To find the true heliocentric Latitude and Longitude of Saturn, on Auguſt 21, 1787, at 11^h 51′, mean Time at Greenwich.

	Longitude.	Aphelion.	Node.	Arguments.				
	s ° ′ ″	s ° ′ ″	s ° ′ ″	II.	III.	IV.	V.	VI.
Epoch for 1787 -	10 24 2 10.2	8 28 49 52	3 21 49 50	2308	3326	6655	566	562
Auguſt - -	7 6 5.9	39	18	292	95	191	10	39
21^d - -	42 12.5	4	2	29	9	19	1	4
11^h - -	55.3							
51′ - -	4.2							
	11 1 51 28.1	8 28 50 35	3 21 50 10	2629	3430	6865	577	605
Great Equation -	— 48 39.0	11 1 2 49.1	10 25 36 25.4	+ 32	+ 55	+ 109	— 8	+ 9
	11 1 2 49.1	2 2 12 14.1	7 3 46 15.4	2661	3485	6974	569	614
Small Equation -	— 5 26 22.7	Mean Anom. Arg. I.	Arg. VIII.					569
Long. in Orbit -	10 25 36 26.4							183
Reduction - -	1 30.6							306
Long. on Ecl. -	10 25 34 52.1							VII. 887

	° ′ ″
Arg. I. - -	−5 30 34.8
Conſt. - -	— 19 57.3
	−5 50 32.1
Sec. Var. - -	+ 34.2
Arg. II. - -	1 2.7
Arg. III. - -	26.5
Arg. IV. - -	19 30.6
Arg. V. - -	1 35.1
Arg. VI. - -	41.2
Arg. VII. - -	18.8
	0 24 9.1
	−5 26 22.7

	° ′ ″
Lat. - -	1 23 19 S.
Sec. Var. -	3.3
True Lat. -	1 23 18.7

SATURN, in *Chemiſtry*, ſignifies lead; in regard that metal is ſuppoſed to lie immediately under the influence of this planet. See LEAD.

SATURN, in *Heraldry*, denotes the black colour in the coats of arms of ſovereign princes; anſwering to diamond in the coats of noblemen, and ſable in thoſe of gentlemen.

SATURN, in *Mythology*, one of the terreſtrial gods; the ſon of Uranus and Veſta, or Cœlum and Terra. He is repreſented under the figure of a decrepid old man in fetters, with a long beard, and hoary head; bearing in his right hand a pruning hook or ſcythe, and in his left a child, which he is about to devour. According to the Roman fable, Satunr, being dethroned by Jupiter, took refuge in Italy, called from him Saturnia, where he introduced ſeveral parts of agriculture, particularly the art of pruning and managing their vines, and civilized the people, uniting them to one another in chains of braſs, *i. e.* by braſs money, which he invented.

The age in which Saturn lived was called the *golden age*, becauſe it was pretended by the poets, that the earth brought forth its fruits without the labour of tillage, that all things were common, and that univerſal harmony prevailed. Virgil has given a beautiful deſcription of this age in his eighth Æneid, and in the firſt book of his Georgics.

The name Saturn is derived by ſome *a ſatu*, from ſowing; becauſe he is ſaid to have firſt taught the art of ſowing, and tilling the ground, in Italy, and was therefore eſteemed the god of huſbandry, and called by the Romans *Stercutius*, becauſe he firſt manured the earth with dung; and on this account he is painted with a ſickle. By others his name is derived *a ſaturando*, from that fulneſs which is the effect of his bounty; as his wife was called Ops, becauſe ſhe helps the hungry. Others aſcribe the name to his being ſatisfied with the years that he devours; Saturn and Time being the ſame. Thus Cicero, de Nat. Deorum, *quod ipſe ſaturetur annis quos ipſe devorat*. Others again derive the name from *ſator* νου, becauſe he is the former of the mind.

A diſtinguiſhing character of Saturn among the ancients was that of preſiding over time; with which the name Χρονος, given him by the Greeks, more particularly agrees. On this account Saturn is repreſented as devouring his children, and caſting them up again; as bound in fetters, and furniſhed with wings, to denote both the ſlowneſs and ſwiftneſs of time; and as furniſhed with a ſcythe.

Rome, and ſeveral other cities of Italy, dedicated temples to Saturn, and paid him religious worſhip. But it was chiefly among the Carthaginians that he was particularly honoured. Our ancient Gauls and the neighbouring nations were alſo diſtinguiſhed votaries of Saturn. Nobody doubts but human ſacrifices were offered to him, as well as to Moloch, eſpecially in the Gauls and at Carthage; and this barbarous cuſtom continued in that city till the Romans made themſelves maſters of it. It was alſo practiſed in Italy, though it did not ſubſiſt there long. Dionyſius of Halicarnaſſus, who was better verſed in the antiquities of Italy than any other author, tells us that Hercules, upon his return from Spain into Italy, aboliſhed it entirely; and having erected an altar to that god upon the Saturnine Mount, offered to him thoſe ſorts of victims which the Greeks call Τύμαλα αχνα, which, according to the ſcholiaſt on Thucydides, were of paſte, figured like animals; or, if we may believe Dionyſius Halicarnaſſeus, in the ſimilitude of men.

The ſame author makes mention of the places and cities where Saturn was worſhipped. Tatius, A. Sempronius, M. Minutius, and Atracinus, dedicated temples to him, and appointed feſtivals and ſacrifices to his honour, as we learn from the ſame Dionyſius Halicarnaſſeus. Macrobius informs us that Tullus Hoſtilius likewiſe conſecrated a temple to him, and that under that prince were the Saturnalia founded. This god had likewiſe a temple upon the brow of the Capitol, which Valerius Poplicola made the public treaſury, becauſe in Saturn's time, that is, in the golden age, no thefts were committed. Laſtly, Suetonius makes mention of a temple which Munatius Plancus had built in honour of him.

The ancients obſerve that the cuſtom was to ſacrifice to this god with the head uncovered, while it was veiled during the other ſacrifices made to the celeſtial gods. The ſtatues of Saturn commonly wore chains, to repreſent thoſe with which he had been bound by his ſon, which were taken off on his feſtival day, to teach us that liberty and happineſs had flouriſhed in his reign, as we learn from Lucian.

According to Bochart, in his Phaleg. lib. i. cap. 1. Saturn and Noah were the ſame. See Titans.

SATURNALIA, in *Antiquity*, feaſts celebrated among the Romans, in honour of the god Saturn.

The ſaturnalia, called in the Greek language Κρονια, were inſtituted either by Tullus, king of the Romans, or, according to Livy, by Sempronius and Minutius, the conſuls. Till the time of Julius Cæſar they were finiſhed in one day, *viz.* the 19th of December; but then they began to be celebrated in three days, and afterwards in four or five, by order of Caligula; and ſome ſay, that they have laſted ſeven days, and when theſe days were added to the feaſt, the firſt day of celebrating it was the 17th of December.

During this ſolemnity, the ſlaves were reputed maſters; they were allowed to ſay any thing; and, in fine, they were ſerved at table by the maſters themſelves. Every thing ran into debauchery and diſſoluteneſs, and nothing was heard or ſeen in the city of Rome, but the din, riot, and diſorder of a people wholly abandoned to joy and pleaſure.

M. Dacier obſerves, that the Saturnalia were not only celebrated in honour of Saturn, but alſo to keep up the remembrance of the golden age, when all the world was on a level.

On occaſion of this feaſt, preſents were ſent from friends to one another; no war was to be proclaimed, and no offender executed; the ſchools obſerved holiday; and the ſenate did not ſit.

The Saturnalia were not only obſerved at Rome, but alſo in Greece; and were, in reality, much older than Rome itſelf. Some aſcribe their inſtitution to the Pelaſgi, who were caſt upon the iſland of Delos; others to Hercules; and others to Janus. Goropius Becanus makes Noah the author of them. (Orig. lib. iv.) Voſſius goes ſtill higher, and will have it, that the Saturn, in honour of whom this feaſt was inſtituted, was Adam.

SATURNESS, in *Geography*, a cape on the ſouth coaſt of Scotland, in the county of Kircudbright. N. lat. 54° 57′. W. long. 3° 38′.

SATURNI Columnæ, in *Ancient Geography*, a name anciently given to mountains of Africa and Spain, called alſo the "columns of Briareus and of Hercules."

Saturni *Extractum.* See *Extract of* Lead.

Saturni, *Saccharum.* See Saccharum and Lead.

SATURNIA, in *Ancient Geography*, an ancient town of Italy, on the ſcite of which Rome is ſaid to have been founded.—Alſo, a town of Italy, in Etruria, S.E. of Ruſſellæ.—Alſo, one of the firſt names given to Italy. Thus Virgil:

> "Salve, magne parens frugum, Saturnia Tellus,
> Majus virum."——
> Georg. l. ii. v. 175.

And,

> "Sæpius et nomen poſuit Saturnia Tellus."
> Æneid.

Varro relates, that there had been on the Tarpeian mount a city named Saturnia, and that veſtiges of it remained in his time.

Saturnia, in *Geography*, a town of Etruria; 20 miles N.E. of Orbitello.

SATURNIAN, Saturnius, in *Ancient Poetry*, a kind of iambic verſe uſed in ſatirical writings: it conſiſted of ſix feet and a ſyllable over, and thence called *trimeter hypercatalectus*.

SATURNILLIANS. See Saturninians.

SATURNIN, St., in *Geography*. See St. *Saturnin.*

SATURNINE, or Saturnian, a term applied to perſons of dark, ſullen, melancholic complexions; as being ſuppoſed under the predominancy of Saturn, or at whoſe births Saturn was the aſcendant.

Saturnine *Ointment.* See Unguent.

Saturnine *Tincture*, *Tinctura Saturnina.* See Tincture.

Saturnine *Water.* See *Water of* Lead.

SATURNINIANS, or Saturnillians, a ſect of ancient Gnoſtics; thus called from their chief Saturnillus, or Saturninus, a diſciple of Menander, the famous Gnoſtic. See Menandrians.

Saturnillus taught the ſame errors with his maſter, in Syria, about the cloſe of the ſecond century; and drew after him many diſciples, by the pompous appearance of an extraordinary virtue. He held the doctrine of two principles, from whence proceeded all things: the one a wiſe and benevolent deity; and the other, matter, a principle eſſentially evil, and which he ſuppoſed under the ſuperintendance of a certain intelligence of a malignant nature. The world and its firſt inhabitants were, according to the ſyſtem of this raving philoſopher, created by ſeven angels, which preſided over the ſeven planets. This work was carried on without the knowledge of the benevolent deity, and in oppoſition to the will of the material principle. The former, however, beheld it with approbation, and honoured it with ſeveral marks of his beneficence. He endowed with rational ſouls the beings who inhabited this new ſyſtem, to whom their creators had imparted nothing more than the mere animal life; and having divided the world into ſeven parts, he diſtributed them among the ſeven angelic architects, one of whom was the god of the Jews; and reſerved to himſelf the ſupreme empire over all. To theſe creatures, whom the benevolent principle had endowed with reaſonable ſouls, and with diſpoſitions that led to goodneſs and virtue, the evil being, to maintain his empire, added another kind, whom he formed of a wicked and malignant character; and hence the difference we ſee among men. When the creators of the world fell from their allegiance to the ſupreme deity, God ſent from heaven, into our globe, a reſtorer of order, whoſe name was Chriſt. This divine conqueror came clothed with a corporeal appearance, but not with a real body: he came to deſtroy the empire of the material principle, and to point out to virtuous ſouls the way by which they muſt return to God. This way is beſet with difficulties and ſufferings; ſince thoſe ſouls, who propoſe returning to the ſupreme being, after the diſſolution of this mortal body, muſt abſtain from wine, fleſh, wedlock, and, in ſhort, from every thing that tends to ſenſual gratification, or even bodily refreſhment. Moſheim's Eccl. Hiſt. vol. i. p. 176, Eng. ed. 8vo. 1758.

SATURNINUS, Publius Sempronius, in *Biography*, a Roman general, who, having gained ſeveral victories over the barbarians, aſſumed the title of emperor A.D. 263. This was much againſt his will. On his elevation, he exclaimed, "You have loſt a good commander, and have made a wretched emperor." He was a man of great bravery, but was murdered by his ſoldiers in the year 267. There was, in Roman hiſtory, another of this name, very highly eſteemed by Aurelian, and regarded as the beſt of his generals. The people of Alexandria proclaimed him emperor in 280, but he refuſed the title. The troops, however, compelled him to accept it. He ſlew himſelf, not long after, at Apamea, where he was when the place was beſieged by Probus. Saturninus was a man of great merit and experience: he had been driven into rebellion by the abſence of his ſovereign, the levity of the Alexandrian people, the preſſing inſtances of his friends, and his own fears, (though he knew not what fear was, when in the preſence of an enemy); but from the moment of his elevation, he never entertained a hope of empire, or even of life. "Alas," he ſaid, "the republic has loſt an uſeful ſervant, and the raſhneſs of an hour has deſtroyed the ſervices of many years. You know not the miſery of ſovereign power: a ſword is ſuſpended perpetually over our head. We dread our very guards; we diſtruſt our companions. The choice of action or repoſe is no longer in our diſpoſition; nor is there any age, or character, or conduct, that can protect us from the cenſure of envy. In thus exalting me to the throne, you have doomed me to a life of cares, and to an untimely fate."

SATURNIUS Mons, in *Ancient Geography*, one of the mountains on which Rome was built, ſince called the Capitoline mount.

SATWA, or Satwi, in *Mythology*, a name of the Hindoo goddeſs *Parvati;* which ſee.

SATWIKI, a name of the Hindoo goddeſs *Parvati;* which ſee.

SATYA, a name of one of the wives of the Hindoo deity *Kriſhna;* which ſee.

SATYAVAMA, is a fabled incarnation of the goddeſs *Lakſhmi*, conſort of *Viſhnu*. See thoſe articles.

SATYAVRATA, one of the ſeven perſons bearing the common denomination of *Menu;* which ſee.

SATYR, Satyrus, Σατυρος, in the *Heathen Theology*, a fabulous kind of ſemigod; who, with the Fauns and Sylvans, preſided over groves and foreſts, under the direction of Pan.

The word is uſually derived from *ſathe*, σαθη, which, in the ancient Greek, ſignifies the *virile member;* theſe deities being ſuppoſed much addicted to laſciviouſneſs, and hence called *laſcivi Satyri*.

Bochart (Chan. l. i. c. 12.) deduces Satyr from the Hebrew word *Sair*, which ſignifies a devil under the ſhape of a goat; and hence, as he ſays, they are repreſented as a ſort of goats, dancing and friſking in a laſcivious manner.

The Satyrs were painted half men and half goats: the upper part was human, excepting horns on the head; and the lower brutal, with the tail and legs of a goat; the whole covered with hair. See Orang-outang.

The poets uſually confound the Satyrs, Sylvans, Sileni, Fauns, and Panes.

Nonnus, in his Dionyſiaca, makes the Satyrs the offſpring of Mercury and a Doric nymph, called Ypthima, and gives us the names of ſeveral; *viz.* Pæminius, Thyaſus, Hypſichorus, Oriſtas, Apæus, Phlegræus, Lycon, &c.

Memnon, in his book againſt the tyrants of Heraclea, derives the Satyrs from Bacchus, and a Naiad, called Nicæa.

The introduction of Satyrs into the poetical world was probably owing to large monkies, ſeen in the woods, pretty much reſembling men; or perhaps to the appearance of barbarians, reſembling monkies at a diſtance. This is the opinion of Pliny (Hiſt. l. 9. c. 54.), who takes the Satyrs for a kind of monkies, and who ſays, that in a mountain of the Indies are to be found four-footed Satyrs, who might be taken at a diſtance for men. Theſe monkies had frequently terrified the ſhepherds, and ſometimes purſued the ſhepherdeſſes; and this circumſtance probably gave riſe to ſo many fables about their amorous diſpoſition. To this we may add, that ſhepherds covered with goat-ſkins, and ſome prieſts of Bacchus, frequently counterfeited Satyrs, to ſeduce the innocent ſhepherdeſſes; and thus we have the true explication of the fable. Hence the opinion ſpread, that the woods were full of theſe miſchievous divinities. The ſhepherdeſſes trembled for their honour, and the ſhepherds for their flocks; for which reaſon they ſought to appeaſe them by ſacrifices, and by the offerings of the firſtlings of their flocks. Some ſongs were compoſed, which the ſhepherds ſung in the foreſts, where they endeavoured, by invoking them, to recommend themſelves to their favour. The poets, laying hold of the amuſing ſubject, invented a thouſand tales. The painters alſo contributed to propagate thoſe fables, by painting Pan and the Satyrs like men. Such, ſays Banier, are the origin of theſe rural divinities, and ſuch was the origin of their worſhip, and of the ſacrifices that were offered to them.

Satyrs made part of the dramatis perſonæ in the ancient Greek tragedies, which gave riſe to a new ſpecies of poetry, called *ſatirical.* See Satire.

SATYRI, in *Ancient Geography*, a wandering people in the interior of Africa, according to Pomponius Mela.

Satyri *Monumentum*, a place of Aſia, upon a promontory of the Cimmerian Boſphorus; 90 ſtadia from Parthenium. Strabo.

SATYRIASIS, in *Medicine*, ſometimes written *ſatyriaſmus*, a diſeaſe peculiar to men, and analogous to the *nymphomania* of women, and characterized by an uncontrollable deſire for venereal intercourſe. "Eſt morbus viris proprius," to borrow the definition of Sauvages, "cujus præcipuum ſymptoma eſt effrænis impudenſque veneris cupiditas, cum libidinoſâ penis tentigine." It differs, therefore, from priapiſm, in which the tentigo penis is not accompanied by the libidinous diſpoſition. If this affection really occurs, it muſt be an extremely rare diſeaſe, as we never ſaw any malady of this deſcription, neither do we know of any well authenticated inſtance of it ſeen by others among our contemporaries. Dr. Cheyne, indeed, mentions three caſes in his own practice, ſaid to have occurred in hypochondriacal men; but from his own deſcription, theſe were merely caſes of chordee or priapiſm, from ſome local irritation; for "nec libidinis tamen æſtro ciebantur, intenſiſſimo dolore omnem laſcivæ cupidinis ſenſum excludente," &c. Sauvages alſo mentions an inſtance, which occurred in an old monk, and which was probably of the ſame kind: "hoc morbo diutiſſimè laboravit, curvato corpore incedens et triſtis." But the acute form of the ſatyriaſis, deſcribed by Aretæus and the other old writers, as carrying the patient off within a week, has not been obſerved, as far as we know, by any modern practitioner. Sauvages has mentioned four ſpecies of ſatyriaſis: 1. The acute form juſt noticed, which he deſcribes after Aretæus; 2. The chronic form, noticed by Cheyne, which is chordee, or priapiſm; 3. The common chordee of gonorrhœa, *ſatyriaſis venerea;* and, 4. Satyriaſis *hydrophobica*, as occurring among the ſymptoms of hydrophobia, for which his only authority is an obſcure writer, quoted by the credulous Bonetus. See Sauvages, Noſol. Method. claſs viii. gen. 13.

SATYRIUM, in *Ancient Geography*, a canton of Italy, in Meſſapia, in the vicinity of the town of Tarentum.

SATYRIUM, in *Botany*, a name adopted from Dioſcorides, whoſe σατυριον is preſumed to be ſomething of the *Orchis* kind, and appears to have been ſo called in alluſion to its aphrodiſiacal qualities. Linnæus retained this name for a genus of his own, differing from *Orchis* ſolely in the ſhort, round, pouch-like form of its ſpur; but Swartz and following writers have reſtricted it to a better defined genus, diſtinguiſhed by a double ſpur to the nectary, in which ſenſe we now conſider it.—Swartz in Stockh. Tranſ. for 1800, 214. t. 3. f. C. Schrad. New Journ. v. 1. 31. t. 1. f. C. Willd. Sp. Pl. v. 4. 54. Brown in Ait. Hort. Kew. v. 5. 196.—Claſs and order, *Gynandria Monandria*. Nat. Ord. *Orchideæ*, Linn. Juſſ.

Gen. Ch. *Cal.* Perianth ſuperior, of three linear-oblong leaves, connected at the baſe, reverſed, deflexed. *Cor.* Petals two, linear-lanceolate, rather ſmaller than the leaves of the calyx, and combined therewith below, deflexed. Nectary a large, concave lip, turned upwards, and ſheltering the organs of impregnation, undivided, its baſe elongated behind into a double, tubular, deflexed, nectariferous ſpur, of various length in the different ſpecies. *Stam.* Filament none; anther globular, of two cells opening upwards, attached near the dilated ſummit of the column, nearly terminal. *Piſt.* Germen inferior, oblong, ſtraight, angular; ſtyle an erect column, elongated, gibbous in the upper part, bearing the anther, concealed under the vaulted erect lip of the nectary; ſtigma above the anther, two-lipped, concave. *Peric.* Capſule oblong, triangular, of one cell and three valves. *Seeds* numerous, minute, roundiſh, each with a chaffy tunic.

Eſſ. Ch. Calyx deflexed, reverſed. Petals combined at the baſe with the calyx, deflexed. Lip turned upwards, concave, with a double poſterior ſpur. Anther reverſed. Stigma with two lips.

All the ſpecies of this very diſtinct genus, as far as yet diſcovered, are natives of the Cape of Good Hope only. Two of them have been introduced at Kew.

1. S. *cucullatum.* Hooded Satyrion. Willd. n. 1. Ait. n. 1. (S. bicorne; Thunb. Prodr. 6. Orchis bicornis; Linn. Sp. Pl. 1330. Andr. Repoſ. t. 315. O. lutea, caule geniculato; Buxb. Cent. 3. 6. t. 8.)—Radical leaves two, roundiſh-heart-ſhaped, concave; thoſe of the ſtem remote, tubular, abrupt. Flowers drooping.—This bloomed at Kew in September 1788, when the late Mr. Dryander obſerved that the flowers had an extremely fine clove-like ſmell. The *ſtem* is a foot high. Radical *leaves* horizontal, or depreſſed. *Flowers* numerous, green, in a denſe ſpike, with lanceolate deflexed *bracteas*, which are longer than the *flowers*, except the ſlender pendulous *ſpurs*.

2. S. *membranaceum.* Thin-leaved Satyrion. Swartz. n. 2. Willd. n. 2.—Radical leaves two, heart-ſhaped-ovate; thoſe of the ſtem ſheathing, crowded, membranous, abrupt. Flowers drooping. Calyx and petals finely ſerrated.—Gathered by Thunberg at the Cape. He took it for a variety of the former.

3. S. *coriifolium.* Leathery-leaved Satyrion. Swartz. n. 3. Willd. n. 3. (Orchis lutea, caule purpureo, maculato; Buxb. Cent. 3. 7. t. 10.)—Leaves ovate, pointed, coriaceous, ſheathing, ſomewhat reflexed; their edges membranous, crenate. Flowers and their hood drooping.—Taller, and larger in all its parts, than either of the former. *Stem* purple. Baſe of the *leaves* ſpotted. *Flowers* large, yellow, in a denſe ſpike.

4. S. *carneum.* Great-flowered Satyrion. Ait. n. 2. (Orchis carnea; Ait. Hort. Kew. ed. 1. v. 3. 294.)—Radical leaves two, roundiſh-heart-ſhaped; thoſe of the ſtem ſheathing, crowded. Spike compact. Calyx-leaves keeled externally.—Sent by Mr. Maſſon in 1787, from the Cape, to Kew garden, where it flowered in the latter part of ſummer, and where we have ſeen it for ſeveral ſucceſſive years. In ſize it vies with the laſt. The *flowers* are pale roſe-coloured.

5. S. *erectum.* Upright-flowered Satyrion. Swartz. n. 4. Willd. n. 4.—Radical leaves ovate; thoſe of the ſtem crowded, ſheathing, membranous, keeled. Hood of the flowers erect; ſpurs nearly ſtraight.—Gathered at the Cape by Thunberg, who took it for a variety of *S. cucullatum.*

6. S. *parviflorum.* Small-flowered Satyrion. Swartz. n. 5. Willd. n. 5. (Orchis bicornis; Jacq. Hort. Schonbr. v. 2. 26. t. 179?)—"Radical leaves ovato-lanceolate; thoſe of the ſtem open at the edge. Flowers roundiſh, drooping."—Jacquin's figure has broad *leaves;* and ſmall greeniſh *flowers*, whoſe petals and lip are tinged with red. Willdenow erroneouſly ſuppoſes this the *Orchis bicornis* of the firſt edition of Hort. Kew. See n. 1.

7. S. *folioſum.* Leafy Satyrion. Swartz. n. 6. Willd. n. 6, excluding the ſynonym.—"Leaves ovate, acute, concave, crowded; ſheathing at the baſe. Flowers and bracteas erect." *Swartz.*

8. S. *pumilum.* Dwarf Satyrion. Thunb. Prodr. 6. Swartz. n. 7. Willd. n. 7.—"Leaves ovate, acute, concave. Spike of about four flowers. Bracteas erect, longer than the flowers. Spurs ſhort."

9. S. *ſtriatum.* Striated Satyrion. Thunb. Prodr. 6. Swartz. n. 8. Willd. n. 8.—"Leaves ovate, pointed, ſheathing. Spike ovate. Bracteas rhomboid, erect. Spurs very ſhort, obtuſe."

10. S. *bicalloſum.* Knobbed Satyrion. Thunb. Prodr. 6. Swartz. n. 9. Willd. n. 9.—"Leaves ovate, ribbed, ſpreading. Bracteas lanceolate, erect, longer than the flowers. Spurs very ſhort and obtuſe."—*Willd.* Found by Thunberg at the Cape. The *bracteas* have long ſlender points.

11. S. *bracteatum.* Bracteated Satyrion. Swartz. n. 10. Willd. n. 10. (Ophrys bracteata; Linn. Suppl. 403.)—Leaves ovate, three-ribbed. Bracteas ovate, reflexed.

Spurs very ſhort and blunt. Found by Sparrmann at the Cape. The *root* conſiſts of two round knobs. *Stem* a ſpan high. *Stem-leaves* ſeveral, ovate-oblong. *Spike* of numerous *flowers*, with large, broad, ſpreading, coloured *bracteas*.

The hiſtory of the ſpecies of this genus is but imperfectly made out, and probably ſeveral remain as yet undeſcribed. Mr. Brown, in a ſhort and haſty examination of the Table Mountain at the Cape, met with a *Satyrium* which appears to be new, though ſomewhat akin to the laſt; and this accurate obſerver ſaw enough, in other departments of botany, to convince him that the vegetable riches of even that celebrated ſpot are not yet exhauſted, though ſo many lovers of plants have been there.

SATYRIUM, in *Gardening*, contains plants of the bulbous-rooted, hardy, flowering, perennial kind, of which the ſpecies cultivated are the lizard ſatyrion, or lizard-flower, (S. hircinum); the frog ſatyrion (S. viride); and the white ſatyrion (S. albidum).

The firſt ſort is often called goat orchis, and it has been occaſionally met with in the neighbourhood about Deptford; but the greedineſs of the collectors has frequently endangered its total deſtruction, and in ſome ſeaſons none can be found in flower. The circumſtance of its varying in ſize, and the breadth of the leaves, has alſo given occaſion to old authors to make two ſpecies of it. The flowers are ſometimes quite white. It was found at the Cape of Good Hope, on the top of the Table mountain; whence its trivial name. It is large and panicled, as found at the Cape; and this is a fathom in height, with large orange-coloured flowers. In the ſort found there, alſo, the lip is muricate, with white and purple prickles.

Method of Culture.—Theſe plants are not raiſed without ſome difficulty. The beſt mode of increaſing them is by taking up the roots, with a good ball about them, from their natural ſituations, and planting them in a ſoil as ſimilar as poſſible, where they are to grow; letting the ground around them afterwards remain wholly undiſturbed. They ſometimes alſo ſucceed by ſeed, and offsets from the roots, planted out after the ſtems decay. The roots are hardy and laſting.

They afford variety in borders among other ſimilar plants, when properly introduced.

SATYRIUM, in the *Materia Dietetica* and *Medica*. See SALEP.

SATYRORUM INSULÆ, in *Ancient Geography*, the name of three iſlands in the Indian ocean, according to Ptolemy, who places them before the Magnus Sinus or Grand gulf, but on the other ſide of the equinoctial line.

SATYRORUM *Promontorium*, a promontory on the weſtern ſide of China, at the entrance of the Great gulf, and under the equinoctial line.—Alſo, a promontory of Ethiopia, on the coaſt of the Arabic gulf. Ptolemy.

SATZIG, in *Geography*, a town of Pomerania; 16 miles E. of Stargard. N. lat. 53° 27′. E. long. 15° 26′.

SAU ALBEN, a mountain of Carinthia; 5 miles N.E. of Eberniſtein.

SAVA, or SABA, in *Ancient Geography*, a town in the interior of Arabia Felix. Ptol.

SAVA, in *Geography*, a diſtrict and town of Perſia, in the province of Irak. This diſtrict, of which the ruined town of Sava, the ancient Tubus, is the capital, extends from within 26 miles of Koom to the village of Sugzaabad, in the plain of Caſween or Caſbin, a diſtance of 78 miles. The greater part of it is laid out in paſture lands, and was celebrated, during the wars of the ſucceſſors of Alexander, for an excellent breed of horſes. It is now in the poſſeſſion of the rival tribes of Kahlig and Afshar, who never fail to avail themſelves of any interregnum in the government, to carry fire and deſolation into the eſtates of each other. The inhabitants carry on a conſiderable trade in cotton and rice; and the adjacent gardens produce in great abundance pomegranates and almonds, and other excellent fruits; 69 miles S. of Caſbin. N. lat. 34° 54′. E. long. 49° 10′.

SAVA, a town of Japan, in the iſland of Niphon; 50 miles N.N.E. of Meaco.

SAVACT, a town of Turkeſtan; 25 miles S.S.W. of Cogend.

SAUAD, a town of Arabia, in the province of Yemen; 10 miles N. of Damar.

SAUADI, a town of Egypt, on the right bank of the Nile; 15 miles N. of Enſené.

SAUADI *Kedami*, a town of Egypt, on the right bank of the Nile; 10 miles N. of Abu-Girgé.

SAVAGE, RICHARD, in *Biography*, a miſcellaneous writer, was the iſſue of an adulterous connection between Anne, counteſs of Macclesfield, and Richard Savage, the earl of Rivers. He was born in the month of January 1697, and his mother being ſoon after ſeparated from her huſband by act of parliament, lord Rivers took upon himſelf the care of him as his illegitimate child. But his mother, whoſe unnatural conduct has tranſmitted her name to poſterity with infamy, ſeems, from the moment of his birth, to have regarded him as an object of abhorrence, and to her more than brutal conduct is to be attributed that ſeries of misfortunes which attended her ſon almoſt from the cradle to the grave. She immediately conſigned him to the care of a poor woman, whom ſhe directed to educate as her own, and to keep him entirely ignorant of his real parentage. He from this time had the name of his nurſe, and would have been entirely neglected as to his education, had not the mother of lady Macclesfield paid him ſome attention, and cauſed him to be ſent to the grammar-ſchool at St. Alban's. While in this ſituation lord Rivers was taken dangerouſly ill, and feeling ſome compunctions of conſcience, he wiſhed to make proviſions for his natural children, of whom he had ſeveral, and ſending for lady Macclesfield to make enquiry after Richard, ſhe aſſured him he was dead: accordingly the legacy of 6000*l.* intended for him went to another. In effect alſo ſhe deprived him of another legacy which his godmother had left him, by concealing from him his birth, and thereby rendering it impoſſible for him to proſecute his claim. She endeavoured to ſend him to the plantations in North America, but this plan failed, and he was bound apprentice to a ſhoe-maker. Shortly after, his ſuppoſed mother died, and in ſearching her boxes he found ſome letters, which diſcovered to the youth the ſecret of his birth, of which it appears he had hitherto no ſuſpicion whatever. The diſcovery naturally excited in him a diſguſt to his humble employment, and it was now his object to rouſe, if poſſible, the tenderneſs of his mother, who had married as a ſecond huſband colonel Brett. Every effort of this kind, however, was repulſed with the moſt unfeeling harſhneſs; and the deſerted and forlorn youth, unable to gain admittance into her houſe, was accuſtomed to walk before the door in dark evenings, in the hope that he might gain a view of her as ſhe croſſed her apartment with a candle. Having once found the door open he walked up ſtairs, hoping thereby to procure an interview; but this deteſtable mother no ſooner perceived him, than ſhe called the ſervants to turn him out of the houſe, pretending that he had a deſign of murdering her. Being now deſtitute of regular ſupport, and feeling a propenſity to literary purſuits, he reſolved to become an author. In the Bangorian controverſy he attacked biſhop Hoadley: after which he turned to the ſtage, and wrote two pieces taken from Spaniſh comedies, which were no otherwiſe ſucceſsful than in giving him an introduction to

Steele and Wilks, both of whom befriended him; but having offended the former, by ridiculing him behind his back, he loſt his protection. Mrs. Oldfield, the actreſs, diſplayed her generoſity to him, by ſome liberal donations; though, owing to her diſlike of his manners and converſation, ſhe would never admit him into her houſe. Theſe temporary ſupplies afforded him but precarious ſupport, and he attempted to improve his circumſtances by writing a tragedy: but during the compoſition of it he was ſo entirely deſtitute of a home, that he uſed to ſtudy his ſpeeches in the ſtreets and fields, and write them with pen and ink, borrowed in any ſhop to which he was near, upon ſcraps of paper which he caſually picked up in the ſtreets. Thus was produced his tragedy entitled "Sir Thomas Overbury," which being corrected by Cibber and Aaron Hill, was brought out at Drury-lane in the year 1723. It had not much ſucceſs, but introduced the author to ſome of the wits of the day, and put into his pocket about 200*l.* Savage himſelf, in this play, took the part of Overbury on the ſtage, but his manner proved him totally unqualified for the theatre. He next publiſhed a volume of miſcellaneous poems, to which he prefixed an account of the treatment which he had experienced from his mother. His caſe was now generally known, and he was riſing into ſome degree of reputation: but as faſt as his friends, by their kind exertions, raiſed him from one difficulty, he ſunk into another; and when he found himſelf much involved, he would ramble through the ſtreets like a vagabond, without a ſhirt to his back. It was in one of theſe ſituations that an incident happened which plunged him into the deepeſt diſtreſs. Rambling late in the ſtreets, with two companions, in November 1727, they entered a houſe of entertainment, and in a quarrel with a company juſt leaving the room as they entered it, he unfortunately killed a man, for which he was tried, convicted, and condemned to be hanged. His friends earneſtly ſupplicated for mercy, but his mother uſed every effort to prevent his receiving the royal clemency. At length the counteſs of Hertford laid the whole caſe before the queen, and Savage obtained a pardon.

Savage had now loſt all tenderneſs for his mother, which, it is ſaid, the whole ſeries of her cruelty had not before been able wholly to repreſs; and conſidering her as an implacable enemy, which nothing but his blood would ſatisfy, threatened to haraſs her with ſatires, and to publiſh a full account of all her uſage of him, unleſs ſhe conſented to allow him a penſion. This expedient proved ſucceſsful, and her nephew, lord Tyrconnel, in order to ſilence him, took Savage into his family, treated him as a companion, and gave him 200*l.* a-year. This was the moſt proſperous part of Savage's life. He was courted by all who endeavoured to be thought men of genius, and careſſed by all who valued themſelves upon a refined taſte. In this period of his life he publiſhed "The Temple of Health and Mirth," on the recovery of lady Tyrconnel from a ſevere fit of illneſs; and "The Wanderer," a moral poem, which he dedicated to lord Tyrconnel, in ſtrains of the higheſt panegyric: but theſe praiſes he in a ſhort time found himſelf inclined to retract, being diſcarded by the man on whom they were beſtowed. Of this quarrel lord Tyrconnel and Mr. Savage aſſigned very different reaſons. Our author's known character pleaded ſtrongly againſt him, for his conduct was ever ſuch as made all his friends very ſoon grow weary of him, and even forced moſt of them to become his enemies.

Being thus once more without the means of ſubſiſtence, Savage thought himſelf at liberty to take revenge upon his mother. He accordingly wrote "The Baſtard," one of his moſt vigorous efforts, to which the ſubject gave great temporary popularity. This poem made its appearance at the time when his mother happened to be at Bath, and many perſons, indignant at her conduct, took frequent opportunities of repeating paſſages from it in her hearing. This was, probably, the firſt time that ever ſhe diſcovered a ſenſe of ſhame, and on this occaſion the power of wit was very conſpicuous: "The wretch," ſays Savage's biographer, "who had, with ſcruple, proclaimed herſelf an adultreſs, and who had firſt endeavoured to ſtarve her ſon, then to tranſport him, and afterwards to hang him, was not able to bear the repreſentation of her own conduct, but fled from reproach, though ſhe felt no pain from guilt, and left Bath in the utmoſt haſte, to ſhelter herſelf among the crowds of London." Some time after this Savage formed the reſolution of applying to the queen, who having once given him his life, he hoped might extend her goodneſs to him by enabling him to ſupport it. With this view he publiſhed a poem for her birth-day, which he entitled "The Volunteer Laureat," for which ſhe ſent him 50*l.*, with an intimation that he might expect a like ſum annually. It was, however, too ſmall an allowance for a man of his ſtrange and ſingular extravagance. His uſual cuſtom was, as ſoon as he had received his penſion, to diſappear with it, and ſecrete himſelf from his moſt intimate friends till every ſhilling was ſpent, which being done he again appeared as pennyleſs as before. But he would never inform any perſon where he had been, or in what manner his money had been diſſipated. From the reports, however, of ſome, who found means to penetrate his haunts, it ſhould ſeem that he expended both his time and his caſh in the moſt ſordid ſenſuality; particularly in eating and drinking, in which he would indulge in the moſt unſocial manner, ſitting whole days and nights by himſelf, in obſcure public houſes, immerſed in filth and ſloth, without decent apparel.

It was at this period that he contracted an intimacy with the afterwards celebrated Dr. Samuel Johnſon, then come to London as a literary adventurer, who ſeems to have been captivated by a politeneſs of manner and elegance of converſation in Savage, which atoned for his many moral defects. He frequently accompanied him in his nocturnal rambles, and made him a ſubject of cloſe obſervation, whence he derived materials for that life of Savage, which is certainly among his moſt admired performances.

After the death of the queen, Savage's diſtreſſes became ſo urgent, that a ſubſcription was raiſed to enable him to live in retirement in Wales. It was underſtood that he was now to quit, for ever, his town-haunts, and reſign all farther pretenſions to fame. This offer, made with thoſe conditions, he ſeemed gladly to accept; but his intentions were only to delude his friends, by retiring for a time to write another tragedy, and return with it to London to bring it on the ſtage.

Savage, after ſome time ſpent in Briſtol, where he ſo much ingratiated himſelf with the principal inhabitants as to be treated by them with the greateſt attention, arrived at Swanſea. Here he ſpent about a year, employed in writing another tragedy on the ſtory of ſir Thomas Overbury. From his great haughtineſs and inſolence of behaviour many of the ſubſcribers to his ſupport had withdrawn their ſubſcriptions, and he reſolved to return to the metropolis, and puſh again for fame. He left Wales, arrived once more at Briſtol, where, at firſt, he was received with as much kindneſs as he had experienced before, but his irregularities and importunities at length tired out his admirers: he was no longer invited to their houſes; and having contracted conſiderable debts he was thrown into priſon. Here he found a friend in the keeper of the gaol, who ſoftened the rigours of confinement by every indulgence in his power. He ſupported him at his own table, gave him a commodious room to himſelf, allowed him not only to ſtand at the door, but frequently took him little excurſions into the ſurrounding country; ſo that in reality Savage endured fewer hardſhips in this place than he had uſually ſuffered during the greater part of his life. While, however, he was in this place, he forgot all the kindneſs that he had experienced in that city, and employed his time in writing a bitter ſatire, entitled "London and Briſtol delineated," in which he abuſed the inhabitants of the latter in ſuch ſtrains, as would lead a perſon to ſuppoſe he had received from them no other than the moſt injurious treatment.

When Savage had remained about ſix months in confinement, he received a letter from Mr. Pope, who ſtill continued to allow him 20*l.* a-year, containing a charge of very atrocious ingratitude. He ſolemnly proteſted his innocence, but he was very unuſually affected on the occaſion, and in a few days was ſeized with a nervous fever, under which he ſunk, at the age of forty-ſix.

Such was the life and ſuch the death of Richard Savage, whoſe hard fate deſerves compaſſion, though there is but little belonging to him either amiable or reſpectable. He was, however, generous to fellow-ſufferers when he had any thing to give; and his equanimity under diſtreſs might extort ſome praiſe, had it not ever been attended with a total want of moral feelings. As a poet, his works may be conſidered as of an inferior caſt; they long lay diſperſed in magazines and fugitive publications, but were afterwards admitted into Dr. Johnſon's collections, in order perhaps to introduce his fine life of the author. They have been ſince publiſhed in a ſeparate form, in two volumes, to which is prefixed that life; the writer of which, ſays Dr. Aikin, in the General Biography, would, it is preſumed, "have given a different eſtimate of the moral and literary merits of his ſubjects, had he judged of them at a later period, and without the partiality of an acquaintance."

Savage, a vocal performer and ſinging-maſter of ſome eminence in London. He was brought up in the King's chapel, and his treble voice was ſo good, that he performed in ſome of Handel's operas and oratorios under the title of *the boy*. When his voice broke, it deſcended into a powerful, and not unpleaſant, baſs; and in this voice he performed for Handel in ſome of his early oratorios.

When he ceaſed to ſing in public, he became a ſinging-maſter: and having in his boyiſh days frequently heard Italian ſingers at the Opera, he had imbibed ſome of their taſte and manner, which brought him into vogue as a vocal inſtructor, particularly in the city, where he was appointed maſter of the boys in St. Paul's cathedral. He was a vain, pompous man, and felt and made others feel his importance. He taught Vernon to ſing the fairy's ſongs in the pantomime of queen Mab, in 1750; and happening to call on him one morning while he was dreſſing, we found that he had three boys to wait upon him while he was waſhing his hands: one to bring in and hold the eure, one to preſent him the waſh-ball, and a third to hold the towel. He was the firſt Engliſh muſic-maſter who kept his carriage. No maſter had then more than two guineas a month; but ſervants' wages, houſe-keeping, and houſe-rent, were in proportion. Savage, who died in 1789, out-lived faſhion ſo much, as to walk on foot during the laſt years of his life.

Savage, in *Geography*, a ſmall river of Maryland, which runs through Alleghany county into the Potowmac, W. of George's creek.

Savage *Creek*, a ſmall bay on the N.W. coaſt of Newfoundland, near the weſtern entrance of the bay of Mouco, and 20 leagues N.E. of Cape Ferrol.

Savage *Iſland*, an iſland in the South Pacific ocean, diſcovered by captain Cook in June 1774, and ſo called from the conduct and appearance of the inhabitants. It is about eleven leagues in circuit, of a round form and good height, and has deep waters cloſe to its ſhores. The whole ſea-coaſt and the interior of the iſland that was viſited, was covered with trees, ſhrubs, &c. among which were ſome cocoa-nut trees. It did not appear to be very productive; for the part of it that was ſeen conſiſted wholly of coral-rocks, over-run with woods and buſhes. No ſoil was perceptible; the rocks alone ſupplying the trees with humidity. If theſe coral-rocks were firſt formed in the ſea by animals, how came they to be thrown up to ſuch an height? Has this iſland been raiſed by an earthquake? or has the ſea receded from it? The inhabitants of this iſland are not numerous. They ſeemed to be ſtout well-made men, naked, except round the waiſts, and ſome of them had their faces, breaſts, and thighs painted black. The canoes were preciſely like thoſe of Amſterdam iſland, with a ſmall addition of a riſing, reſembling a gun-wale, on each ſide of the open part; together with ſome carving about them, which ſhewed that theſe people are no leſs ingenious. Both theſe iſlanders and their canoes correſpond very well with the deſcription which M. de Bougainville has given of thoſe taken off the iſle of Navigators, lying nearly under the ſame meridian. S. lat. 19° 1′. W. long. 169° 37′.

Savage *Iſland, Great*, an iſland in Hudſon's ſtraits. N. lat. 62° 25′. W. long. 70°.

Savage *Iſland, Lower*, an iſland in Hudſon's ſtraits. N. lat. 61° 48′. W. long. 66° 20′.

Savage *Mountains*, mountains in Pennſylvania; 110 miles N.W. of Philadelphia.

Savage *Sound*, a paſſage in the N. part of the Welcome ſea, in Hudſon's bay into Repulſe bay.

SAVAGES, or Salvages, wild, barbarous people, without any fixed habitation, religion, law, or policy.

The word is formed from the Italian *ſalvagio*, of *ſalvaticus*, *ſelvaticus*, or *ſilvaticus*; which we find uſed in the barbarous Latin for *ſilveſtris*, belonging to the woods.

A great part of America is peopled with ſavages. Many, ſome ſay moſt, of the ſavages are anthropophagi.

SAVALELAS, in *Geography*, a town of South America, in the province of Popayan; 52 miles N.W. of Cali.

SAVALOS, a town of South America, in the province of Darien; 32 miles S.W. of St. Maria de Darien.

SAUAMEC, a town of Perſia, in the province of Choraſan; 30 miles S.W. of Zauzan.

SAVAN Lake, a lake of North America. N. lat. 50° 10′. W. long. 90° 15′.

SAVANAS, a river of Darien, which runs into the bay of Panama.

SAVANNAH a river of America, which ſeparates the ſtate of Georgia from that of South Carolina, and purſues a courſe nearly from N.W. to S.E. into the Atlantic, N. lat. 32° 2′. W. long. 81°. It is chiefly formed of two branches, *viz.* the Tugeloo and Keowee, which flow from the mountains and unite 15 miles N.W. of the northern boundary of Wilkes county. It is navigable for large veſſels 17 miles up to Savannah, and for boats of 100 feet keel to Auguſta.

Savannah *River, Little*, a river of Florida, which falls into the gulf of Mexico, N.W. of St. Joſeph's bay.

Savannah, a bay at the E. end of the iſland of Antigua, a little W. of Indian creek.

Savannah, a port of entry and poſt-town of America, in

Georgia, formerly the metropolis of the ſtate, in Chatham county, on the S. ſide of the river of the ſame name, 17 miles from the ocean. Veſſels are under a neceſſity of unloading part of their cargo four miles below, as the river at the town has only 14 feet water. The firſt houſe of this town was begun the 19th of February, 1733. The river here forms a kind of creſcent, having banks on the S. ſide 40 feet high, and on the top a flat, called by ſailors a bluff, at leaſt 60 feet high from the river, and extends five or ſix miles into the country. In the centre of the creſcent the town is ſituated, and over-againſt it is an iſlet, conſiſting of very rich paſture land. The town is regularly built in the form of a parallelogram, and contained by the cenſus of 1810, 5215 inhabitants; the county of Chatham containing 13,540. N. lat. 32° 4′. W. long. 81° 12′.

SAVANNAH *Key*, a ſmall iſland in the bay of Honduras, near the coaſt. N. lat. 15° 38′. W. long. 89° 50′.

SAVANNAH *la Mer*, a town ſituated on the E. coaſt of the iſland of Hiſpaniola or St. Domingo, on the S. ſide of the bay of Samana, and oppoſite to the city of Samana on the N. ſide, between the bay of Pearls (an excellent port) and the point of Icaque. The city of Samana and this town were both began in 1756. Shallows and breakers render the navigation dangerous between this and the point of Icaque, 4½ leagues diſtant.

SAVANNAH *la Mer*, a town of the iſland of Jamaica, in the county of Cornwall, on the S. ſide of the iſland, as Montego bay and Falmouth are in the ſame county on the N. In 1780 this town was almoſt entirely deſtroyed by a dreadful hurricane and inundation of the ſea; but it has been ſince partly rebuilt, and contains from 60 to 70 houſes. N. lat. 18° 13′. W. long. 78° 7′.

SAVANNAH *Mountains*, mountains in Jamaica; 12 miles E. of Savannah la Mer.

SAVANNAH, *New*, a town of Georgia; 12 miles S.E. of Auguſta.

SAVANNAH *Point*, a cape on the W. coaſt of Dominica. N. lat. 15° 33′. W. long. 61° 29′.

SAVANNAS, or SAVANNAHS, a name given in the United States to the level plains by the ſides of rivers, which are generally in a flooded ſtate during the whole rainy ſeaſon.

SAVANT. See SCAVANT.

SAVARNOLO, in *Geography*, a town of Italy, in Friuli, 20 miles S. of Udino.

SAVARON, JOHN, in *Biography*, a learned and patriotic magiſtrate of the 16th and 17th centuries, was deſcended from a good family at Clermont in Auvergne, and he became preſident of the ſeneſchalcy and preſidial court, and afterwards was made lieutenant-general. He was preſent in the States-General of 1614, as deputy from the tiers-états of the province of Auvergne, and defended the rights of his order with great eloquence and firmneſs. In a conference with the order of nobility he gave ſo much offence to that body by the freedom of his harangues, that it was judged neceſſary to aſſign him a guard for his ſafety. He afterwards ſupported, with great ability, the honorary privileges of the magiſtrates of his preſidency, againſt the chapter of Clermont, in a pleading before the parliament of Paris. He died, at a very advanced age, in 1622. He was author of a number of works, of which the principal are, "Sidonii Apollinaris Opera," with notes and commentaries; "Origine de Clermont;" "Traité contre les Duels;" "Traité de la Souverainté du Roi et de ſon Royaume." In this, and in a ſubſequent treatiſe on the ſame ſubject, Savaron maintained the independence of the crown of France on all other power, and ſhews the unlawfulneſs of diſpenſing its ſubjects from their oaths of allegiance. Savaron was likewiſe author of a work entitled "Chronologie des Etats-généraux," intended to prove that the tiers-états always made a conſtituent part of the States-General.

SAVARY, JAMES, a commercial writer, was a native of Doue, in Anjou, but removing to Paris, he acquired there a conſiderable fortune by trade, and in 1658 he procured the place of one of the royal ſecretaries. His great reputation for commercial knowledge cauſed him to be frequently employed in arbitrations, and in the year 1670 he was engaged in compiling the "Code Marchand," which appeared in the following year. He publiſhed, in 1675, a work entitled "Le Parfait Négociant," of which there appeared eight editions, beſides tranſlations into modern languages. The laſt edition, in two vols. 4to. contains his "Avis et Conſeils ſur les plus importantes Matières de Commerce." This eſtimable author died in 1690.

SAVARY DES BRULONS, JAMES, ſon of the preceding, was appointed by the miniſter Louvois, inſpector-general of the cuſtoms of Paris. In this ſituation he began to make a collection of all the words which have any relation to trade and manufactures, with their proper meanings and derivations, and to theſe he afterwards added all the commercial ordinances and regulations in France and other countries. This at length became the baſis of a dictionary of commerce, in which he was many years engaged, in conjunction with his brother Philemon-Louis, a prieſt and canon at Paris. He died in 1716, before the work was finiſhed, but it was publiſhed under the inſpection of his brother, with the title of "Dictionnaire Univerſel de Commerce," in two volumes, fol. 1723. A ſupplemental volume was publiſhed in 1730, and a new edition of the whole was given in 1748, in three vols. folio. Poſtlethwayte's Engliſh Dictionary of Trade and Commerce is a tranſlation, with conſiderable additions and improvements.

SAVARY, an eminent French traveller and writer, was born at Vitre, in Britanny, about the year 1748. He received his education at Rennes, and in 1776 he travelled into Egypt, where he reſided almoſt three years, employing himſelf in the ſtudy of the Arabic language, and in ſtudying the antiquities and manners of people. He then ſpent 18 months in a tour among the iſlands of the Archipelago, and returned to France at the cloſe of the year 1780. On his return to France he publiſhed 1. "A Tranſlation of the Koran, with a ſhort Life of Mahomet," in two vols. 8vo. From his verſion, which is reckoned faithful and elegant, he extracted a "Récueil de plus pure Maximes du Coran." 2. His next conſiderable work was entitled "Lettres ſur l'Egypte," in three vols. 8vo. 1785, which was read with great avidity in tranſlations, as well as in the original. It contains an abundance of curious particulars relative to the ancient and modern ſtate of the country. Encouraged by this flattering reception, he prepared his "Lettres ſur la Grèce," which, however, were not publiſhed till after his death, that occurred in Feb. 1788.

M. Savary was a lively and pleaſant man; he had a well-cultivated underſtanding; his heart was warm and benevolent; his imagination was vigorous; his memory retentive. He was cheerful and open, and in company exceedingly agreeable and inſtructive. He did not mingle much with the world, but was ſatisfied with performing well the duties of a ſon, a brother, and a friend.

SAVARY'S *Iſland*, in *Geography*, an iſland in the gulf of Georgia, ſo named by captain Vancouver, about two leagues long from E. to W., and half a league wide. On the S. ſide are innumerable ſunken rocks, and, as Vancouver thought, only viſible at low water. The N.E. point of the iſland is ſituated in N. lat. 49° 57′. E. long. 235° 54′.

SAVASTOPOLI. See Isgaur.

SAUBAANA, in *Ancient Geography*, a town of Greater Armenia, in the country called Sophène. Ptolemy.

SAUBATHA, a town of Arabia, called *Sabatha* by Arrian.

SAUBUT-JUNG, in *Geography*, two ſmall iſlands in the Chineſe ſea. N. lat. 12° 35′. E. long. 114° 38′.

SAUCE, White. See White.

Sauce-*Alone*, in *Botany* and the *Materia Medica*. See Erysimum and *Hedge* Mustard.

SAUCEDA, in *Geography*, a town of Mexico, in the province of New Biſcay, on a river of the ſame name.

SAUCER, a circular thin plate of iron or braſs, with a hole in the middle, two of which, with a leather between, conſtitute the valves of the chain-pump. Alſo, a thick circular plate of iron fixed in the capſtern ſtep for the ſpindle to turn on.

Saucer *Iſland*, in *Geography*, a ſmall iſland in the Mergui Archipelago; 1 mile S. of Weſtminſter Hall.

SAUCES *aux Bois*, a town of France, in the department of the Ardennes; 7 miles N.E. of Rethel.

SAUCIDGE. See Sausage.

SAUCISSE, Sausage, in the *Military Art*, a long train of powder ſewed up in a roll of pitched cloth, and ſometimes of leather, about two inches in diameter; ſerving to ſet fire to mines or caiſſons. It is uſually placed in a wooden pipe, called an *auget*, to prevent its growing damp.

The length of the ſauciſſe is to extend from the chamber of the mine to the place where the engineer ſtands to ſpring it. There are uſually two ſauciſſes to every mine; that if one ſhould fail, the other may take effect.

SAUCISSON, French, ſignifying literally a *big ſauſage*, in *Fortification*, a kind of faggot, made of thick branches of trees, or of the trunks of ſhrubs, bound together; whoſe uſe is to cover the men, and to ſerve as epaulements; and alſo to repair breaches, ſtop paſſages, make traverſes over a wet ditch, &c.

The ſauciſſon differs from a faſcine, which is only made of ſmall branches; and by its being bound at both ends, and in the middle.

Anciently, they made the ſauciſſon forty-ſix feet long, and fifteen feet thick; ſince it is uſually twenty-three feet long, and twelve thick; bound ſtrongly together with three bands ſtrengthened with iron.

SAUCLIERES, in *Geography*, a town of France, in the department of the Aveiron; 15 miles S.E. of Milhau.

SAUCONA Creek, a river of Pennſylvania, which runs into the Skuylkill, N. lat. 40° 26′. W. long. 75° 58′.

SAUCOURT, a town of France, in the department of the Somme, where the Normans were defeated by Louis II. in the year 881; 6 miles S. of St. Valery.

SAUDRE, Petite, a river of France, which runs into the Grande Saudre, near Salbris, in the department of the Loir and Cher.

Saudre, *Grande*, a river of France, which runs into the Cher, near Selles, in the department of the Loir and Cher.

SAUDRUPT, a town of France, in the department of the Meuſe; 6 miles N.E. of St. Dizier.

SAVE, a river of Germany, which riſes in the N.W. part of Carniola, 6 miles S. of Villach in Carinthia, ſeparates Sclavonia from Boſnia and Servia, and joins the Danube at Belgrade.

Save, *La*, a river of France, which runs into the Garonne, near Grenade, in the department of the Upper Garonne.

SAVEIB, a town of Perſia, in the province of Chuſiſtan; 72 miles S. of Suſter.

SAVEIGNIES, a town of France, in the department of the Oiſe; 4 miles N.W. of Beauvais.

SAUEL, in *Ichthyology*, a name given by the Portugueſe to a kind of fiſh, very frequent on the coaſt of China, which by the natives is called *xiyu*. In the months of April and May vaſt numbers of them are taken in the river Kiang, near Nanking; during which time one of the moſt honourable of the emperor's eunuchs takes care to have ſeveral ſhips filled with theſe fiſh; which being put into the ſhips alive, are buried, as it were, in ice provided for that purpoſe, and in this manner preſerved for the ſummer's proviſion of the emperor. The ſhips made uſe of to carry theſe fiſh to the emperor's court at Pekin, are of the neateſt kind, and richly adorned; and all other veſſels are obliged to make way for them.

SAVENAY, in *Geography*, a town of France, and principal place of a diſtrict, in the department of the Lower Loire; 18 miles N.W. of Nantes. The place contains 1814, and the canton 9876 inhabitants, on a territory of $257\frac{1}{2}$ kiliometres, in 8 communes. N. lat. 47° 22′. W. long. 1° 47′.

SAVENNIERES, a town of France, in the department of the Mayne and Loire; 6 miles S. of Angers.

SAVER-DE-FAULT, in *Law*, ſignifies to excuſe a fault; as when a man, having made default in court, comes afterwards, and alleges good cauſe why he did it; as impriſonment at the time, or the like. See Default.

SAVERDUN, in *Geography*, a town of France, in the department of the Arriege, and chief place of a canton, in the diſtrict of Mirepoix, 15 miles N.W. of Mirepoix. The place contains 2819, and the canton 8852 inhabitants, on a territory of 250 kiliometres, in 14 communes.

SAVERIO, a cape or point on the N. coaſt of South America, in that part called the Spaniſh main.

SAVERNDROOG. See Savindroog.

SAVERNE, a town of France, and principal place of a diſtrict, in the department of the Lower Rhine; 18 miles W.N.W. of Straſburg. This place, which is the ſeat of a tribunal, contains 3980, and the canton 11,899 inhabitants, on a territory of 130 kiliometres, in 18 communes. N. lat. 48° 45′. E. long. 7° 26′.

SAVERY, Roland, in *Biography*, was the ſon of James Savery, and born at Courtray about the year 1576. His father firſt inſtructed him in the art of painting, in which, in the end, he acquired much more celebrity than his inſtructor. His ſtyle of execution is neat, even to minuteneſs, like that of Paul Brill and of Breughel. He went into France in the reign of Henry IV. for whoſe royal apartments he painted many pictures. The fame he acquired cauſed him to be invited to the court of the emperor Rodolphus II. and there he paſſed a conſiderable part of his life, travelling occaſionally, under that monarch's protection, through the grand and mountainous diſtrict of the Tyroleſe. There he made a great number of drawings, from which he enriched his future compoſitions with romantic ſcenery and figures. He continued to reſide at Prague till the death of the emperor, when he ſettled at Utrecht, and died there in 1639, in the 63d year of his age.

SAUGDY, in *Geography*, a village of Bengal; 40 miles S.S.E. of Dacca.

SAUGEES Town, a town of North America, in a mountainous country, inhabited by Indians, called Saugees. N. lat. 42° 43′. W. long. 89° 48′.

SAUGO, a town of Spain, in the province of Leon; 12 miles S. Ciudad Rodrigo.

SAUGUES, a town of France, in the department of the Upper Loire, and chief place of a canton, in the diſtrict of Le Puy; 15 miles S.W. of Le Puy. The place contains 2666, and the canton 6562 inhabitants, on a territory of 397½ kiliometres, in 15 communes.

SAUGUTCHY, a town of Bengal; 17 miles E. of Burdwan. N. lat. 23° 15′. E. long. 88° 16′.

SAVIG, a town of Norway, in the province of Drontheim; 80 miles N. of Drontheim.

SAVIGLIANO, a town of Naples, in the province of Bari; 9 miles E. of Minorbino.

Savigliano, a town of France, in the department of the Stura, late capital of a diſtrict in Piedmont, ſituated on a plain, watered by the Maira and Grana. This place is eminently diſtinguiſhed by the excellence of its air and the fertility of its ſoil; and in theſe reſpects was highly commended by Charles V. when he reſided here in June 1536. It contains four pariſh churches, and many religious houſes; 8 miles E.S.E. of Saluzzo. N. lat. 44° 35′. E. long. 7° 40′.

SAVIGNAC-*les-Egliſes*, a town of France, in the department of the Dordogne, and chief place of a canton, in the diſtrict of Perigueux; 10 miles S.S.E. of Perigueux. The place contains 916, and the canton 8313 inhabitants, on a territory of 282½ kiliometres, in 15 communes.

SAVIGNANO, a town of Naples, in Principato Ultra; 21 miles N. of Conza.—Alſo, a town of Italy, in the department of the Rubicon; 8 miles W. of Rimini.

SAVIGNE′, a town of France, in the department of the Indre and Loire; 15 miles W.N.W. of Tours.

Savigné *l'Evêque*, a town of France, in the department of the Sarte; 6 miles N.E. of Le Mans.

SAVIGNY, a town of France, in the department of the Loire and Cher, and chief place of a canton, in the diſtrict of Vendôme; 7 miles S.W. of Montdoubleau. The place contains 2562, and the canton 9292 inhabitants, on a territory of 237½ kiliometres, in 10 communes.—Alſo, a town of France, in the department of the Côte d'Or; 3 miles N. of Beauvais.

Savigny *ſur Seille*, a town of France, in the department of the Saône and Loire; 4 miles W. of Louhans.

Savigny *en Septaine*, a town of France, in the department of the Cher; 7 miles E. of Bourges.

SAVILLA, St. See St. *Savilla*.

SAVILLE, *Sir* Henry, in *Biography*, an eminent ſcholar, was born of a good family, at Over-Bradley, near Halifax, in 1549. He was admitted of Merton college, Oxford, where he diſtinguiſhed himſelf for his claſſical and mathematical knowledge. He was elected a fellow of his college, and in 1570 took his degree of M.A. after which he read a mathematical lecture in the univerſity. He ſerved as proctor for two years, and then made a tour to the continent, in which he acquired ſeveral foreign languages, and improved himſelf in his knowledge of the world. Upon his return, he was appointed preceptor in the Greek language to queen Elizabeth. In 1581 he publiſhed a tranſlation of the firſt four books of Tacitus, with the life of Agricola, accompanied with notes, which were afterwards tranſlated into the Latin language by Gruter, and publiſhed at Amſterdam. He was elected warden of Merton college in 1585, which office he held for thirty-ſix years. In 1596 he enriched the literature of his country by publiſhing a collection of the beſt of its ancient hiſtorians and chroniclers, to which he ſubjoined chronological tables of the kings and biſhops of England, from the time of Julius Cæſar to William I. In the courſe of this ſame year he was nominated, by favour of the queen, provoſt of Eton college. It was during the reign of king James that he received the honour of knighthood. About this period he loſt his only ſon, and having now no hopes of raiſing his family, he devoted his time and fortune from henceforward to the encouragement of literature. He ſet up a Greek preſs at Eton, from which, at the expence of 8000*l.* and after the labour of ſeveral years, he ſent forth an edition of all the works of Chryſoſtom, in 8 vols. folio, which is ſtill eſteemed as one of the moſt elegant and correct Greek books that has come from the Engliſh preſs. He alſo printed an edition of Xenophon's Cyropædia, and other works. He was a great benefactor to the univerſity of Oxford, and in 1619 founded two profeſſorſhips, one of geometry, and the other of aſtronomy, and endowed each with a ſalary of 180*l. per annum;* and he gave at his death a legacy of 600*l.* to purchaſe more lands for the ſame uſe. He alſo furniſhed a library with mathematical books for the uſe of his profeſſors, and gave 100*l.* to the mathematical cheſt of his own appointment. He gave 120*l.* towards new-building the ſchools, beſides ſeveral rare manuſcripts and printed books to the Bodleian library, and a good quantity of Greek types to the printing-preſs at Oxford. After a life thus nobly ſpent in the encouragement of literature and ſcience, he died at Eton college, on the 19th of February 1622, and was buried in the chapel there. Upon this occaſion, the univerſity of Oxford paid him the greateſt honours, by having a public ſpeech and verſes made in his praiſe, which were publiſhed under the title of "Ultima Linea Savilii." The higheſt encomiums were beſtowed on Saville by all the learned of his time; by Caſaubon, Mercerus, Meibomius, Joſeph Scaliger, and eſpecially by the learned biſhop Montague, who ſtyles him "that magazine of learning, whoſe memory ſhall be honourable among not only the learned, but the righteous, for ever."

Saville, *Sir* George, afterwards marquis of Halifax, and one of the moſt conſiderable ſtateſmen of his time, was born about the year 1630, and ſome time after his return from his travels he was created a peer, in conſideration of his own and his father's merits. At the cloſe of the reign of Charles II. he ſtrenuouſly oppoſed the bill of excluſion; but propoſed ſuch limitations of the duke of York's authority, as ſhould effectually prevent him doing any harm. In 1682 he was created a marquis, and ſoon after he was made privy ſeal; but upon his refuſal to conſent to the repeal of the teſt, he was diſmiſſed from all public employments. In that aſſembly of the lords which met after king James's acceſſion, he was made preſident, and upon the king's return from Feverſham, he was ſent, together with the earl of Shrewſbury and lord Delamere, from the prince of Orange, to deſire his majeſty to quit the palace at Whitehall. In the convention parliament he was choſen ſpeaker of the houſe of lords, and ſtrenuouſly ſupported the motion for the vacancy of the throne, and the conjunctive ſovereignty of the prince and princeſs, upon whoſe acceſſion he was again made privy ſeal. In 1689 he quitted the court, and became a ſteadfaſt oppoſer of the meaſures of government till his death, which happened in April 1695. Grainger ſpeaks of him as "a perſon of unſettled principles, and a lively imagination, which ſometimes got the better of his judgment. He was deſervedly celebrated for his parliamentary talents; and, in the famous conteſt relating to the bill of excluſion, was thought to be a match for his uncle Shafteſbury. The pieces he has left us ſhew him to have been an ingenious, if not a maſterly writer; and his 'Advice to a Daughter' contains more good ſenſe in fewer words, than is, perhaps, to be found in any of his contemporary authors." His other principal works are, "The Anatomy of an Equivalent;" "A Letter to a Diſſenter;" "A rough Draught of a new Model at Sea," and "Maxims of State." Theſe have all been printed in one volume octavo. Under his name have alſo appeared the character of king Charles II., the character of biſhop Burnet, and hiſtorical obſervations upon the reigns of Edward I. II. III. and Richard II., with remarks upon their faithful counſellors and falſe favourites.

Saville, *Sir* **George,** a public-ſpirited and truly patriotic Engliſh baronet and ſenator, was deſcended from the Savilles, marquiſes of Halifax. He diſtinguiſhed himſelf by his oppoſition to the American war, a conteſt which was but the beginning of thoſe miſeries in which this country has ſo long been involved. He brought into parliament a bill to repeal the penal ſtatutes againſt the Roman Catholics, for which his perſon was inſulted, and his houſe deſtroyed by an abandoned rabble, during the infamous riots of June 1780. He was a moſt zealous friend to parliamentary reform, and encouraged the efforts of the late Mr. Pitt on that ſubject, who, as well as himſelf, thought the ſalvation of the country depended upon it. He was alſo one of the committee appointed by different counties in England to obtain this deſirable meaſure; and it appears from his anſwer to an addreſs of thanks preſented to him in January 1780, that he had ſome ſmall hopes of ſucceſs: "I moſt heartily wiſh," ſays he, "nay, I will venture to entertain ſome hope, that the voice of a complaining people will be attended to; and that every beneficial conſequence may enſue which the moſt ſanguine can promiſe themſelves from an application ſo conſtitutionally and temperately made." But at the diſſolution of parliament in the following autumn, he ſpeaks in a very deſponding tone: after giving an account of his conduct in parliament to his conſtituents, the freeholders of York, and of the miſerable ſtate of the country, he ſays, in offering himſelf a candidate for their ſuffrages, "I return to you, therefore, baffled and diſpirited, and I am ſorry that truth obliges me to add, with hardly a ray of hope of ſeeing any change in the miſerable courſe of public calamities." He was re-elected, and continued to exert himſelf in the great cauſe of his country, till May 1783, when, though extremely ill, he attended in the houſe to ſupport a motion made by Mr. Pitt for parliamentary reform, and zealouſly entered into the debate, to which it appears his ſtrength was unequal, and he very ſoon deſired leave to vacate his ſeat, being incompetent to perform the duties of an independent ſenator. On this occaſion he received a letter from Mr. Wyvill, the chairman of the committee, who, in the true ſpirit of friendſhip, alluding to an obſervation of ſir George Saville, that his attendance in ſupport of Mr. Pitt's motion would probably be the laſt action of his political life, ſays, "Theſe are circumſtances which I cannot recollect without feeling a ſincere concern and regret, mixed with that high reſpect and eſteem which are ſo juſtly due to the purity of your character. Accounts which have been juſt received of your relapſe, and dangerous ſtate of health, muſt give every private friend, every friend to the welfare of the public, the utmoſt anxiety. I ſhall only ſay, therefore, if your appearance in parliament, on the 7th of May laſt, ſhould unfortunately be your laſt ſervice to your conſtituents, a life of ſuch unſullied virtue could not be more conſiſtently cloſed than by that attempt effectually to correct the corruption of parliament." Sir George died on the 9th of January 1784, and his title became extinct.

SAVIN, St., in *Geography*. See St. *Savin*.

SAVINDROOG, a town and fortreſs of Hindooſtan, in Myſore. The fortreſs is ſituated on the ſummit of a mountain or rock, riſing, as it is ſaid, above half a mile perpendicularly from a baſe eight or ten miles in circumference. It is divided at the top by a chaſm into two hills, each of which has its peculiar citadel, capable of being maintained independently of the lower works. The whole mountain is encompaſſed by a wall, and wherever it was thought to be acceſſible, croſs walls and barriers were conſtructed, ſo as to give the whole edifice a ſtupendous and impregnable appearance. Neverthéleſs the Britiſh under Col. Stuart, on the 21ſt of December 1791, aſſaulted and took poſſeſſion of this fortreſs; 18 miles W. of Bangalore.

SAVINE, in *Botany*, a corruption of *Sabina*. See Juniperus.

Savine, *Indian*. See Bauhinia.

SAVINES, in *Geography*, a town of France, in the department of the Higher Alps, and chief place of a canton, in the diſtrict of Embrun; 4 miles S.W. of Embrun. The place contains 970, and the canton 2869 inhabitants, on a territory of 290 kiliometres, in 6 communes.

SAVINIAN, St. See St. *Savinian*.

SAVIO, a river of Italy, which runs into the Adriatic; 6 miles S.S.E. of Ravenna.

SAUJON, or Soujon, a town of France, in the department of the Lower Charente, and chief place of a canton, in the diſtrict of Saintes; 12 miles W.S.W. of Saintes. The place contains 2000, and the canton 9515 inhabitants, on a territory of 210 kiliometres, in 13 communes.

SAVIOUR. *Order of St.* Saviour. See Brigittins. By the conſtitutions of this order, it is principally appointed for women, who are to pay a particular honour and ſervice to the Virgin. The monks are only to afford them the ſpiritual aſſiſtances they may need, to adminiſter to them the ſacraments, &c.

The number of nuns is fixed to ſixty in each monaſtery, and that of monks to thirteen, according to the number of apoſtles, of which St. Paul makes the thirteenth. Four of them are to be deacons, to repreſent the four doctors of the church, and eight converts; the whole number making ſeventy-two, the number of the diſciples of our Saviour.

Setting aſide theſe circumſtances, and the habit, this order is under the rule of St. Auguſtin.

It was approved of by Urban V., and ſeveral ſucceeding popes. In 1603, Clement VIII. made ſome alterations in it, on account of the double monaſteries which then began to be built in Flanders, &c.

SAVITRI, in *Hindoo Mythology*, is a name of Surya, the regent of the ſun.

SAUKIES, or Saikies, in *Geography*, a tribe of Indians in North America, reſiding at Bay Puan, in the N.W. territory, near the Minomanies. They have a large and well-built town. It contains about 90 houſes, each large enough for ſeveral families. Theſe are built of hewn plank, neatly joined, and covered with bark ſo compactly as to keep out the moſt penetrating rains. Before the doors are placed comfortable ſheds, in which the inhabitants ſit, when the weather will permit, and ſmoak their pipes. The ſtreets are regular and ſpacious; ſo that it appears more like a civilized town than the abode of ſavages. The land near the town is very good. In their plantations, which lie adjacent to their houſes, and which are neatly laid out, they raiſe great quantities of Indian corn, beans, melons, &c.; ſo that this place is eſteemed the beſt market for traders to furniſh themſelves with proviſions of any kind within 800 miles of it. The Saukies can raiſe about 300 warriors, who are generally employed every ſummer in making incurſions into the territories of the Illinois and Pawnee nations,

tions, from whence they return with a great number of ſlaves. But thoſe people frequently retaliate, and, in their turn, deſtroy many of the Saukies. See the next article.

SAUKS, a nation of Indians on the Miſſiſippi, principally reſiding in four villages; the firſt at the head of the rapids de Moyen on the W. ſhore, conſiſting of 13 log lodges; the ſecond in a prairie on the E. ſhore, about 60 miles above; the third on the Rivière de Roche, about three miles from the entrance; and the laſt on the river Jowa. They hunt on the Miſſiſippi and its confluent ſtreams, from the Illinois to the river des Jowa, and on the plains W. of them, which border the Miſſouri. They are ſo perfectly conſolidated with the Reynards, that they can ſcarcely be termed a diſtinct nation. They raiſe a conſiderable quantity of corn, beans, and melons. They are more to be dreaded for their deceit and inclination for ſtratagem than for courage. The Reynards reſide in three villages; the firſt on the W. ſide of the Miſſiſippi, ſix miles above the rapids of the river de Roche; the ſecond about 12 miles in the rear of the lead-mines; and the third in Turkey river, half a league from its entrance. They hunt on both ſides of the Miſſiſippi, from the river Jowa, between the Prairie des Chicas, to a river of that name above the ſaid village. They raiſe a great quantity of corn, beans, and melons. The Jowas reſide on the rivers de Moyen and Jowa, in two villages: they hunt on the W. ſide of the Miſſiſippi, the river de Moyen, and weſtward to the Miſſouri. They cultivate ſome corn, but leſs than the Sauks and Reynards, and are leſs civilized than thoſe nations. The Sauks, Reynards, and Jowas, ſince the treaty of the two former with the United States, claim the land from the entrance of the Sauflioni, on the W. ſide of the Miſſiſippi, up the latter river to the des Jowa, above the Prairie des Chicas, and weſtward to the Miſſouri; but the limits between them are undefined. The number of warriors belonging to the Sauks or Saukies amount to 500, and of perſons to 2500. Pike's Account of Expeditions to the Sources of the Miſſiſippi, &c.

SAULCE, La, a town of France, in the Higher Alps; 9 miles S. of Gap.

SAULGE, St. See St. *Saulge*.

SAULGEN, a town of Swabia; 5 miles S.W. of Buchau.

SAULHEIM, a town of France, in the department of the Rhine and Moſelle; 14 miles E. of Creutznach.

SAULIEU, a town of France, in the department of the Côte d'Or, and chief place of a canton, in the diſtrict of Semur; 33 miles W. of Dijon. The place contains 2887, and the canton 12,192 inhabitants, on a territory of 285 kiliometres, in 15 communes. Here was anciently a college of the Druids, and a wood in which they performed their ſacrifices; and the ruins of a temple, dedicated to the ſun, are yet viſible. The chief trade of this town conſiſts in wood, ſhip-timber, ſtaves, and corn. N. lat. 47° 16′. E. long. 4° 17′.

SAULT, a town of France, in the department of the Vaucluſe, and chief place of a canton, in the diſtrict of Carpentras. The place contains 5590, and the canton 4644 inhabitants, on a territory of 325 kiliometres, in five communes.—Alſo, a town of France, in the department of the Lower Alps; 18 miles W. of Forcalquier.

Sault *de Navailles*, a town of France, in the department of the Lower Pyrenées; 6 miles N.E. of Orthes.

SAULTY, a town of France, in the department of the Straits of Calais; 12 miles S.E. of St. Pol.

SAULX, a town of France, in the department of the Upper Saône, and chief place of a canton, in the diſtrict of Læne; 9 miles S.W. of Luxeuil. The place contains 1285, and the canton 8034 inhabitants, on a territory of 152½ kiliometres, in 18 communes.

SAUM, in *Commerce*, a liquid meaſure in Germany and Switzerland. The ſaum at Baſil is a wine meaſure, containing 3 ohms, 96 pots old meaſure, or 120 pots new meaſure. The ohm of wine weighs 100lbs. of Baſil weight, and contains 2522 French, or 3106 Engliſh cubic inches, or 13¼ Engliſh gallons. At Berne, the land faſs contains 6 ſaums, 24 brents or brends, or 600 maaſſes: the common faſs contains 4 ſaums, 16 brents, or 400 maaſſes. The maas, or meaſure, called alſo pinte, is divided into 2 halves, 4 quarters, 8 ſemiquarters or bechers: this meaſure is a cylinder, 4 inches in diameter, and 9 inches high, and when full of ſpring water, it weighs 51 ounces, 2 quintlins, 2 dwt. Berne weight, or 59 ounces avoirdupois; 97 ſuch meaſures hold about 67 Engliſh wine pints. Four meaſures of milk anſwer to 5 of the above wine meaſures. Kelly's Un. Cambiſt.

SAUMAISE, Claude, in *Biography*. See Salmasius.

SAUMAPETTA, in *Geography*, a town of Hindooſtan, in Myſore; 12 miles S. of Dalmacherry.

SAUMAR, a river of Germany, which riſes near Corvey, and runs into the Weſer, 9 miles above Polle.

SAUMNAGUR, a town of Bengal; 15 miles S.W. of Midnapour.

SAUMUR, a town of France, and principal place of a diſtrict, in the department of the Mayne and Loire, before the revolution the capital of a government, called "Saumurois." The place contains 9585 inhabitants, in three cantons; the firſt containing 10,218, on a territory of 192½ kiliometres, in 9 communes; the ſecond containing 15,054, on 177½ kiliometres, in 16 communes; and the third, 9596 inhabitants, on 90 kiliometres, in 4 communes; 21 miles S.E. of Angers. N. lat. 47° 15′. W. long. 0° 3′.

SAUNDERS, Charles, in *Biography*, a dramatic writer in the reign of Charles II. While a king's ſcholar at Weſtminſter he wrote a play, called "Tamerlane the Great," to which Dryden wrote a prologue.

Saunders, Richard, who roſe to be a judge from being a common beggar. By accident his genius and talents were diſcovered by a lawyer of Clement's-Inn, who took him into his employment, and made him, in a ſhort time, his clerk. He afterwards ſtudied for the bar, became an eminent barriſter, and at length obtained the high office of chief juſtice of the court of king's bench. He died in the year 1683.

Saunders, in *Botany*. See Santalum.

There are three different woods brought under this name from the Eaſt Indies, in large billets, and ſaid to be the produce chiefly of the iſland of Timor, in the Indian ocean.

The *yellow* ſaunders is of a pale yellowiſh or browniſh colour, cloſe even grain, pleaſant ſmell, approaching to that of the roſe, and bitteriſh, aromatic, pungent taſte. Diſtilled with water, it yields a fragrant eſſential oil, thickening in the cold to the conſiſtence of a balſam, and approaching in ſmell to ambergris, or a mixture of ambergris and roſes. Rectified ſpirit extracts, by digeſtion, conſiderably more than water, and yields a rich yellow tincture. The ſpirit diſtilled off is ſlightly impregnated with the flavour of the wood; the remaining browniſh extract has a weak ſmell, and a moderate balſamic pungency. This wood is chiefly valued on account of its fragrance; hence the Chineſe are ſaid to fumigate their clothes with it, and to burn it in their temples in honour of their gods. It is thought not to poſſeſs any conſiderable ſhare of medicinal power. Hoffman conſiders its virtues as ſimilar to thoſe of ambergris;

and ſome others have eſteemed it in the character of a corroborant and reſtorative.

The *white* ſaunders is of a paler whitiſh colour, often with a yellowiſh tinge, and, being far weaker than the other, promiſes little medicinal virtue, and has been long neglected. Both the white and the yellow ſaunders are the wood of the ſame ſpecies of tree; yet the latter, which forms the central part of the tree, is not always to be found in ſufficient quantity to repay the trouble and expences of procuring it, eſpecially unleſs the trees be old; while the white, which is the exterior part of the wood, is always more abundant, and is conſequently much cheaper.

The *red* ſaunders (Pterocarpus ſantolinus), is of a dull red, almoſt blackiſh colour on the outſide, and deep brighter red within; its fibres are occaſionally curled, as in knots. It has no ſmell, and little or no taſte. This, though recommended as an aſtringent and corroborant, appears to have very little virtue. Its principal uſe is a colouring drug. To watery liquors it communicates only a yellowiſh tinge, but to rectified ſpirit a fine deep red. A ſmall quantity of an extract, made with this menſtruum, tinges a large one of freſh ſpirit of the ſame elegant colour, though it does not, like moſt other reſinous bodies, diſſolve in expreſſed oils; of diſtilled oils, there are ſome, as that of lavender, which receive a tincture from the wood itſelf, and from its reſinous extract, but the greater number does not.

This wood is often confounded with Braſil wood; but though in appearance they reſemble one another, they are eaſily diſtinguiſhed; becauſe Braſil wood gives out its red colour to water as well as alcohol, but ſaunders wood only to alcohol. Hence it is of no uſe in general dyeing; but it is occaſionally uſed for colouring ſpirits, eſpecially the red ſpirit employed for thermometers.

The true ſaunders wood is extremely hard, of a bright garnet red colour, and bears a fine poliſh. (See Pterocarpus *Santelinus*.) It is, however, only the inner ſubſtance of the wood that is uſed as a colouring matter; and the more florid red is moſt eſteemed. On being cut it manifeſts a fragrant odour, and this is ſaid to be moſt perceptible in old trees. Lewis Mat. Med. Woodv. Med. Bot.

Saunders, *Cape*, in *Geography*, a point of land in New Zealand, ſo called by captain Cook in 1770, in honour of ſir Charles Saunders, in S. lat. 45° 35′. W. long. 189° 4′. About three or four leagues to the S.W. of it, and very near the ſhore, there is a remarkable ſaddle-hill, which is a good direction to it in that quarter. From three to four leagues N. of this cape the ſhore forms two or three bays, in which appeared to be good anchorage and effectual ſhelter from the ſouth-weſterly and north-weſterly winds.—Alſo, a cape on the iſland of Georgia, beyond which is a pretty large bay, named by Cook Cumberland bay. Between Cape Saunders and Poſſeſſion bay, which lies in S. lat. 54° 5′. W. long. 37° 18′, and 11 leagues E. of Cape North, were vaſt tracks of ſnow or ice, not broken looſe when captain Cook viſited theſe ſeas in January 1775.

Saunder's *Iſland, Sir Charles*, an iſland diſcovered and ſo called by captain Wallis in July 1767, ſituated in the South Sea, about ſix miles long, with a mountain of conſiderable height in the middle, which ſeemed to be fertile. The inhabitants were few, and lived in ſmall huts. S. lat. 17° 28′. W. long. 151° 4′.—Alſo, an iſland in the South Atlantic ocean, ſo called in honour of ſir Charles Saunders by captain Cook, who diſcovered it in February 1775. It appeared to be eight or ten leagues in circuit, exhibiting a ſurface of conſiderable height, whoſe ſummit was loſt in the clouds, and, like all the neighbouring lands, covered with a ſheet of ſnow and ice, except on a projecting point on the N. ſide, and two hills ſeen over this point, which probably might be two iſlands. Theſe only were clear of ſnow, and ſeemed covered with a green turf. It is ſituated in S. lat. 57° 49′. W. long. 26° 44′; and N. diſtant 13 leagues from Cape Montagu. Cook's Second Voyage, vol. ii.

SAUNDERSON, Nicholas, in *Biography*, a celebrated Engliſh profeſſor of mathematics, was born in the year 1682, at Thurlſton, near Penniſton, in Yorkſhire, where his father had a ſmall eſtate, and a place in the exciſe. At the age of twelve months he loſt his eye-ſight, and even his eyes, by the ſmall-pox. At a very early age he afforded indications of conſiderable abilities, and was ſent to the free-ſchool of Penniſton, and there laid the foundation of that knowledge in the Greek and Latin languages, which he afterwards ſo much improved, as to hear with pleaſure and delight the works of Euclid, Archimedes, and Diophantus, read in the originals. Having finiſhed his ſchool education, his father undertook to inſtruct him in the rules of arithmetic, and very ſoon diſcovered that he had an excellent mathematical genius. At the age of eighteen he was introduced to the acquaintance of Richard Weſt, eſq. a conſiderable mathematician, who undertook to inſtruct him in the principles of algebra and geometry, and gave him every encouragement in his power to the proſecution of theſe ſtudies. Soon after this he found a kind and zealous friend in Dr. Nettleton, and it was to theſe gentlemen that he owed his firſt inſtitutions in the mathematical ſciences, but he ſoon ſurpaſſed his maſters, and became fitter to be teacher than pupil. He next went to an academy at Attercliff, near Sheffield, at which young men were educated for the miniſtry among Proteſtant diſſenters; here he remained but a ſhort time, preferring to purſue his ſtudies in his own way, rather than ſubmit to general plans laid down for a claſs. Hitherto he had been on his father's hands, who, on account of a numerous family, could ill bear the expences attendant upon his ſon's preſent purſuits; he began therefore to deviſe means of putting him into a method of ſupporting himſelf, and as his inclination led him to prefer Cambridge as a reſidence, it was determined he ſhould try his fortune there. He accordingly went to the univerſity in 1707, and took up his reſidence in Chriſt's college without being admitted a member of that houſe. The ſociety, well pleaſed with ſo extraordinary a gueſt, allotted him a chamber, gave him the uſe of their library, and indulged him in every privilege which could prove of any advantage to him. He ſoon commenced the duties of lecturer, and obtained great celebrity by his performances. Sir Iſaac Newton's Principia, Optics, and Univerſal Arithmetic, were the foundation of his lectures, and afforded him a noble field for the diſplay of his genius. Numbers induced from motives of curioſity, and many, no doubt, for the ſake of inſtruction, came to hear and admire a blind man give lectures on optics, diſcourſe on the nature of light and colours, explain the theory of viſion, the effects of glaſs in the refraction of the rays of light, the phenomena of the rainbow, and other objects of ſight.

As he undertook to inſtruct the collegians in the principles of the Newtonian philoſophy, he ſoon became acquainted with ſir Iſaac himſelf, and correſponded with him on the moſt difficult parts of his works. At this time Mr. Whiſton was the Lucaſian mathematical profeſſor in the univerſity, but when he was ejected from his fellowſhip (ſee Whiſton), Mr. Saunderſon's talents were known to be ſo much ſuperior to that of any other competitor, that application was made to the queen for a mandamus to confer upon him the degree of A.M. which was granted, and he was choſen

Mr. Whiſton's ſucceſſor, ſir Iſaac Newton intereſting himſelf greatly in his favour. Mr. Saunderſon's firſt performance as profeſſor was an inaugural ſpeech, drawn up in very elegant Latin. From this time he applied himſelf cloſely to reading lectures, and the inſtruction of his pupils. He continued to reſide at Chriſt's college till the year 1723, when he took a houſe at Cambridge, and very ſoon after married the daughter of a neighbouring clergyman, by whom he had a ſon and a daughter. In the year 1728 king George II. viſited the univerſity, and profeſſor Saunderſon attending upon him in the ſenate, was, by the royal mandate, created doctor of laws. Dr. Saunderſon was naturally of a ſtrong conſtitution, but by confining himſelf too cloſely to his ſtudies, he injured his health, and he died in April, in the year 1739. There is ſcarcely a branch of the mathematics in which he did not compoſe ſomething for the uſe of his pupils. Previouſly to his death he prepared for the preſs his "Elements of Algebra," which were publiſhed the year following his deceaſe in two volumes quarto. He left behind him many other writings, but none in a ſtate ſufficiently prepared for publication. Among theſe were ſome comments on the Principia of ſir Iſaac Newton, which were publiſhed in the Latin language at the end of his poſthumous treatiſe on "Fluxions," which was publiſhed in 1756. Dr. Saunderſon was a man of much wit and vivacity in converſation. He poſſeſſed a ſtrict regard to truth, and was ſuch an enemy to all ſorts of diſguiſe, that he thought it his duty to ſpeak his thoughts, at all times, and on all occaſions, with unreſtrained freedom. Hence his ſentiments on men and opinions were frequently expreſſed without reſerve, which created him many enemies.

"A blind man," ſays one of his biographers, "moving in the ſphere of a mathematician, ſeems a phenomenon difficult to be accounted for, and has excited the admiration of every age in which it has appeared. Tully mentions it as a thing ſcarcely credible in his own maſter in philoſophy, Diodorus, that he exerciſed himſelf in it with more aſſiduity after he became blind; and, what he thought next to impoſſible to be done, that without ſight, he taught geometry, deſcribing his diagrams ſo exactly to his ſcholars, that they could draw every line in its proper direction. St. Jerome relates a ſtill more remarkable inſtance in Didymus of Alexandria, who, blind from his infancy, was enabled to learn the ſublimeſt parts of geometry. But if we conſider that the ideas of extended quantity, which are the chief objects of mathematics, may as well be acquired by the ſenſe of feeling as that of ſight; that a fixed and ſteady attention is the principal qualification for this ſtudy, and that the blind are neceſſarily more abſtracted than others, we ſhall find reaſon to conclude that there is no branch of ſcience ſo much adapted to their circumſtances."

At firſt Dr. Saunderſon acquired moſt of his ideas by the ſenſe of feeling, and this he enjoyed in great perfection, ſo much ſo, that he could in a ſet of Roman medals diſtinguiſh the genuine from the falſe, though they had been counterfeited with ſuch exactneſs as to deceive a connoiſſeur who had examined them with a keen eye. Dr. Saunderſon's ear was alſo equally exact. He could readily diſtinguiſh the fifth part of a note. By the quickneſs of this ſenſe he could judge of the ſize of a room, and of his diſtance from the four ſides of it. He had an ingenious and peculiar method of performing arithmetical calculations, but for an account of this we muſt refer to ARITHMETIC, *Palpable*. See alſo the life of Dr. Saunderſon prefixed to his Algebra.

SAUNDERSVILLE, in *Geography*, a town of America, in Waſhington county, and ſtate of Georgia; 24 miles from Milledgville, the capital of Georgia.

SAUNKLEY, a town of Hindooſtan, in Candeiſh; 20 miles S. of Chuprah.

SAVO, in *Ancient Geography*, a river of Italy, in Campania, which ran near Sinueſſa, and ſerved as a boundary to New Latium.—Alſo, another river of Italy, near and N.E. of Vada Sabatia, in Liguria.

SAVOI, GASPARO, in *Biography*, a ſecond ſinger in our Italian opera, under the regency of Meſſrs. Vincent and Gordon, in 1765. Savoi had a very fine contralto voice, but was too idle to make the moſt of it by application and ſtudy. He was a more ingenious and accompliſhed virtuoſo in cookery than muſic; and would gladly have dreſſed any one's dinner, on condition that he ſhould be allowed to partake of it. Giardini had a very good portrait of him, painted by Gainſborough, with a muſic-paper in his hand; and on aſking Bartolozzi if he did not think it a good portrait?—"yes," he anſwered, "and I'll tell you what he is ſaying in contemplating that muſic-paper in his hand: 'this is one dam arda ſong, and I never ſhall a ſing it in all a mine life.' His voice, however, was ſo rich, ſweet, and powerful, that though he had no ſhake, and his execution was heavy and inarticulate, he was heard with pleaſure. He had in Vinto's Sofoniſba, in Piccini's Buonafigliuola, and in ſome of Sacchini's operas, eaſy airs, that diſplayed his fine voice, and ſo concealed his defects, that in ſinging them, he was always much and juſtly applauded.

SAVOK, in *Geography*, a river of England, in the county of Lancaſter, which runs into the Ribble, about three miles below Preſton.

SAVOLA, a town of Sweden, in Eaſt Bothnia; 18 miles S.E. of Braheſtad.

SAVOLAX, or SAWOLAX, a province of Sweden, in Eaſt Bothnia, bounded on the N. by Cajana, on the E. and S. by Ruſſia, and on the W. by Tavaſtland; about 200 miles long, and 100 broad. It conſiſts chiefly of woods, lakes, rivers, and moraſſes, and produces very little corn or paſture. The ſubſiſtence of the inhabitants is derived from ſowing buck-wheat, grazing, and breeding cattle, hunting, fiſhing, and making wooden ware. They alſo trade in tallow, butter, dried fiſh, hides and furs. The country abounds in elks and rein-deers. With reſpect to its eccleſiaſtical ſtate, it is under the juriſdiction of the biſhop of Borgo, and is divided into three provoſtſhips.

SAVONA, a fortified and pretty large town of Genoa, defended by a citadel on a high rock, the ſee of a biſhop, ſuffragan of the archbiſhop of Milan. The harbour has been partly choaked up by order of the republic, to hinder the approach of large ſhips: 20 miles W.S.W. of Genoa. N. lat. 44° 19'. E. long. 8° 31'.—Alſo, a river which runs into the bay of Naples, N. lat. 41° 7'. E. long. 14°.

SAVONAROLA, JEROME, in *Biography*, a celebrated Italian monk, was born at Ferrara in 1452. He was grandſon of an eminent phyſician, who had removed thither from Padua, and who with his father was ſolicitous to give him a good education. At the age of fourteen, being enthuſiaſtically diſpoſed, he repaired to Bologna, and put on the habit of a Dominican friar. Some years after this he mounted the pulpit at Florence, but with ſo little ſucceſs, that he determined to enter upon a different courſe. The reputation which he had acquired for learning and talents cauſed him to be invited in 1489, by Lorenzo de Medici, to return to Florence, and at this period he became a moſt popular preacher. By pretenſions to ſuperior ſanctity, and a fervid eloquence, he hurried away the feelings of his hearers, and gained a wonderful aſcendancy over their minds. The ſucceſs which he obtained encouraged him to aſſume the prophetic character, and to take ſor his topics the neceſſary reforms in the church, and the diſaſters impending Italy. While, however, he was regarded by the multitude as an inſpired prophet, he was conſidered by many people as a mere enthuſiaſt, and by others as a vile impoſtor. He now began not only to detach himſelf from his patron Lorenzo, but to decry his character, and predict his fall. Being made prior of St. Mark, he refuſed to pay the cuſtomary viſit to that head of the republic, and when Lorenzo came to St. Mark's, Savonarola avoided his preſence. Lorenzo was frequently urged to take meaſures againſt him, which he refuſed, either from his own natural lenity, or from ſome ſecret reſpect for his character; and when he was on his death-bed, in 1492, the monk obtained admiſſion to him, and ſpoke to him with the authority of his functions. Lorenzo meekly anſwered his queſtions, and requeſted his benediction. After the death of Lorenzo, and the expulſion of his ſon Piero, Savonarola took a leading part in the political concerns of Florence, and headed the citizens, who aimed at the eſtabliſhment of a popular conſtitution. He declared, that he was authorized to pronounce that the legiſlative power muſt be extended to the citizens at large; that he himſelf had been the ambaſſador of the Florentines to heaven; and that Chriſt had promiſed to be their peculiar king. Thus, by his influence chiefly, the form of government was changed in Florence from an ariſtocracy to a democracy. When the Florentines were courted by the other Italian ſtates to enter into a confederacy with them, to oppoſe any ſecond attempt that the French might undertake againſt Italy, preparations for which were making in France, Savonarola's perſuaſions prevailed to have all ſuch propoſals rejected. He flattered them with hopes, and foretold in his diſcourſes, that the calamities of the republic would be turned into proſperity and increaſe of dominion; denouncing, at the ſame time, terrible judgments to the court of Rome, and to the reſt of the Italian ſtates. The preacher and his predictions were deſpiſed by the more diſcerning, yet the bulk of the people paid an implicit credit to him, and to all that he ſaid, and among them not a few of the moſt conſiderable citizens, inſomuch that his adherents outnumbered his oppoſers, by which means many of them were elected into the magiſtracy, and other places of the greateſt truſt. In the year 1498 a multitude of complaints againſt him having been carried to Rome, in which he was accuſed of having reproached, in his ſermons, the conduct of that court and the vices of the clergy, he had been frequently ſummoned to appear before the pope, but hitherto had neglected to pay obedience to the commands of his holineſs, on which account he was at laſt publicly excommunicated. This ſentence obliged him to refrain from preaching for ſome months, till, finding his intereſt manifeſtly declining by his ſilence, he, in open contempt of the pontifical authority, reſumed his function, aſſerting that their cenſures againſt him were null and void, as contrary to the divine will, and the public welfare, and at the ſame time bitterly inveighing againſt the pope and the court of Rome. This kind of conduct occaſioned frequent tumults, for his enemies, daily gaining ground upon him, animated the populace, who above all things abhorred diſobedience to the pope. The pontiff, Alexander, alſo thundering out new briefs, and threatening to interdict the city, the magiſtrates commanded him to deſiſt from preaching. Nevertheleſs, the friars of his convent continued to propagate his doctrines, which were oppoſed by the religious of other orders. Theſe diſputes were carried on with great heat, and excited ſuch animoſities, that at length, to defend his cauſe, he procured the aſſiſtance of a friar of his own convent, named Fra. Domenico da Peſcia, who, in a ſort of fanatical madneſs, propoſed to confirm his maſter's doctrines by the ordeal of walking through the flames, provided any one of their adverſaries would do the ſame. The challenge was accepted by a Franciſcan friar, and a day was appointed for the trial. Savonarola, finding that the adverſe party were not to be intimidated, propoſed that Domenico ſhould be allowed to carry the hoſt with him into the fire. This was exclaimed againſt by the whole aſſembly as an impious and ſacrilegious propoſal. It was, however, inſiſted upon by Domenico, who thereby eluded the ordeal. But the reſult was fatal to the credit of Savonarola. The populace inſulted and turned againſt him, and in a pretty ſevere conflict they apprehended him, with Domenico, and another friar, and dragged them to priſon. The reſolution and eloquence of Savonarola diſconcerted his judges at the firſt examination, but upon the application of torture his conſtancy gave way, and he acknowledged the impoſture of his pretending to ſupernatural powers. He and his companions were condemned to be firſt ſtrangled and then burnt, and the ſentence was put into execution on the 23d of May 1498, before an immenſe crowd of ſpectators, a part of whom ſtill looked up to him as a ſaint and martyr, while the reſt execrated him as a hypocrite and ſeducer.

Such was Savonarola, concerning whoſe real character opinions long continued to be at variance, and even at this time they are ſaid by no means to be uniform. The friends of reformation, civil and religious, ſays the eloquent biographer of Lorenzo, would willingly regard him as a man who had elevated views and good intentions, though perverted by a ſpirit of fanaticiſm, and there ſeems no reaſon to doubt that he was really a friend to the liberty of Florence, and felt an honeſt indignation at the profligacy of the court of Rome, and the corruption of the Catholic church. At the ſame time deſign and artifice appear to have mixed with his enthuſiaſm, and the character of a leader of a party is as diſcernible in his conduct as that of a reformer. The great inſtrument by which he obtained his aſcendancy was eloquence, and perhaps no man ever poſſeſſed more of that kind which is calculated to operate upon a popular aſſembly. Several volumes of his ſermons have been publiſhed with other works, aſcetical, theological, and apologetical, which are now conſigned to oblivion. His numerous biographers, apologiſts, and cenſurers, indicate the ſtrong impreſſion made on the public by his actions and unhappy fate. Guicciardini's Hiſt. Roſcoe's Lorenzo.

SAVONIE'RES, in *Geography*, a town of France, in the department of the Indre and Loire, ſituated on the Cher; 8 miles S.W. of Tours.

SAVORGNANO, a town of Italy, in Friuli; 8 miles N.N.W. of Udina.

SAVORY, in *Botany*. (See SATUREIA.) Two ſpecies of this genus are well known under the names of *ſummer* ſavory, and *winter* ſavory.

The leaves of ſavory are a warm aromatic, of a grateful ſmell, and penetrating pungent taſte. They give out the whole of their active matter to rectified ſpirit, with a dark green tincture; to water they give a reddiſh colour and conſiderable ſmell, but little taſte. In diſtillation with water, they yield a ſmall quantity of a fragrant eſſential oil, very pungent, ſubtle, and volatile.

The extract obtained from diſtillation with rectified ſpirit ſmells agreeably, and has a warm, pungent, aromatic taſte. Winter ſavory is much uſed in the kitchens. Miller's Bot. Off.

SAVOU, or Coffin *Iſland*, in *Geography*, a ſmall iſland near the W. coaſt of Madagaſcar. S. lat. 17° 30′. E. long. 44° 22′.

SAVOUGE, a town of France, in the department of the Côte d'Or; 9 miles S. of Dijon.

SAVOY, in *Geography*, a country of Europe, anciently called "Sabaudia," bounded on the N. by the lake of Geneva, on the E. by Switzerland, the Milaneſe, and Piedmont, on the S. by Piedmont and France, and on the W. by France; about 80 miles from E. to W., and 66 from N. to S. In its whole extent Savoy includes the duchy of Savoy, or Savoy Proper, the duchy of Chablais, the duchy of Genevois, the lordſhip of Faucigny, the county of Tarantaiſe, and the county of Maurienne. It is moſtly over-run by lofty barren mountains and enormous rocks, very rarely interſperſed with vallies, that yield ſome grain, but moſtly paſture. The vicinity of the lake of Geneva, Montmelian, and St. Jeanne de Maurienne, afford ſome tolerable wine, and ſome parts of the country ſupply a good breed of cattle that furniſh Piedmont and the Milaneſe with oxen. Mules are alſo bred for exportation. But the greateſt part of the country is covered with huge mountains, among the higheſt of which we may reckon the *Glaciers*, which ſee. (See alſo Alps, Cenis, and *Mont* Blanc.) The chief rivers in this country are the Rhône, the Arve, the Siers, the Iſère, and the Arc; and of the lakes, the principal are thoſe of Annecy in Genevois, and Bourget in Savoy, the latter of which is famous for the delicate fiſh called *lavarette*. The Savoyards are generally poor; inſomuch that a farmer, with a yoke of oxen, two horſes, four cows, a few goats and ſheep, and a ſmall ſpot of land, is deemed a man of ſubſtance. The common bread is made of oats, though the more wealthy uſe wheat; the ordinary drink is milk and good water; their food, cheeſe, butter, walnuts, garden-ſtuff, and occaſionally, but not often, fleſh-meat. The inhabitants of the vallies, however, ſubſiſt on ſomewhat better fare. Accuſtomed to a temperate mode of life, they are healthy, chearful, and prolific. Both ſexes furniſh ſeveral inſtances of deformity; and the women in particular have wens that reach from ear to ear, which ſome aſcribe to the water. (See Cretin and Goitre.) The Savoyards are well-known emigrants through various parts of Europe, ſeeking a ſubſiſtence in France, England, and elſewhere, in quality of ſhowmen, chimney-ſweepers, ſhoe-blackers, &c.; and at times, being diligent and frugal, they return home with their ſavings. As moſt of them are chairmen and mule-drivers, they derive an additional means of ſupport from the paſſage of mount Cenis. In Savoy, every one ſpeaks French, and moſt of the towns and villages have their names in that language; but with regard to cuſtoms and diſpoſition, the inhabitants bear a great affinity to Germans. They are all Roman Catholics. The high court of juſtice, or the parliament, as it is called, ſat in Chambery. The king being, on account of Savoy, a member of the ancient kingdom of Arles, and a vaſſal of the empire, had a ſeat and vote in the diet of the Germanic body. Savoy had formerly its own courts, among whom Amadeus I., who lived in the 12th century, bore the title of marggrave; in Italy, Amadeus V. was the founder of the line of the counts of Savoy; but it is needleſs to trace the ſucceſſion; as in the year 1792 this country was over-run and ſubdued by the French republicans; the people being, for the moſt part, ready to receive them as friends rather than as enemies; and a decree of the national convention was paſſed in order to form it into a department of the republic, under the denomination of Mont *Blanc*, which ſee. The capital is Chambery.

Savoy, a townſhip of Berkſhire county, in Maſſachuſetts; incorporated in 1797; the county contains 32 townſhips and 35,907 inhabitants.

Savoy *Cabbage*, in *Gardening*, the common name of a hardy uſeful cabbage of the winter kind. See Brassica.

SAURA, in *Ancient Geography*, a town of Aſia, in the interior of Suſiana, on the banks of a ſmall river which ran into the Euphrates to the W. of that town.—Alſo, a town of Italy, in Magna Græcia, which belonged to the people called *Saunitæ*, in Japygia.

Saura, in *Geography*. See Sawara.

Saura, a town of Aſiatic Turkey, in the pachalic of Diarbekir; 40 miles S.W. of Diarbekir.

Saura, the name of a ſect of Hindoos, ſo called from being worſhippers ſolely or chiefly of Surya, or the ſun. See Surya.

SAURAT, in *Geography*, a town of France, in the department of the Arriege; 3 miles N.W. of Taraſcon.

SAUREK, a mountain of Arabia, in the province of Yemen; 24 miles E. of Taas.

SAURIN, Elias, in *Biography*, an eminent Piedmonteſe Proteſtant miniſter, was born in the year 1639. He was educated in grammar learning by his father, under whoſe inſtructions he made ſuch a proficiency, that at the age of 18 he entered upon his academical ſtudies with diſtinguiſhed advantage. He attended, ſucceſſively, ſeveral Proteſtant ſeminaries, and in 1661 was admitted to the miniſtry, and appointed paſtor of the church at Venterol. At this place, and at Embrun, he acquired ſo high a reputation for learning and talents, that in 1664 he would have been appointed profeſſor of divinity at Dié, had he not been driven from France by perſecution. Knowing the bitterneſs of his enemies, and what he had to expect from judges already prejudiced againſt him, he withdrew to Holland. Here he became paſtor of the Walloon church at Delft, and retained that ſituation till 1671, when he accepted the ſame office at Utrecht. He was one of the miniſters accuſed of hereſy by Jurieu; and he had a conteſt with Bayle. He died in 1703. His principal works were "An Examination of the Divinity of M. Jurieu;" "Reflections on the Rights of Conſcience;" "Treatiſe on the Love of God;" and another "Treatiſe on the Love of our Neighbour."

Saurin, James, a celebrated French Proteſtant preacher, the ſon of an eminent lawyer at Niſmes, was born in the year 1677. Upon the revocation of the edict of Nantes in 1685, his father retired with his family to Geneva, where the ſubject of this article made a conſiderable progreſs in learning while he was very young. At the age of 17 he went into the army, in which he ſerved with reputation till the year 1696, when the duke of Savoy, in whoſe employment he was, having made peace with France, he returned to his ſtudies at Geneva, which, at that period, was the reſidence of ſome of the beſt ſcholars in Europe. Under theſe profeſſors Saurin applied aſſiduouſly to ſeveral departments of literature, but particularly to the ſtudy of divinity. When he had completed his courſe of ſtudies, in 1700, he viſited Holland and England. In the former country his ſtay was very ſhort, but in the latter he continued almoſt five years, and preached among his fellow refugees in London. In 1703 he married, and in 1705 he returned to Holland, where he was deſirous of ſettling with a church, but as nothing of the kind offered, he accepted the office of chaplain to one of the principal families at the Hague. Soon afterwards he became one of the paſtors to a church of

French refugees, who were permitted to aſſemble in the chapel belonging to the palace of the princes of Orange at the Hague, in which he officiated during the remainder of his life. When the princeſs of Wales, afterwards queen Caroline, paſſed through Holland on her way to England, M. Saurin had the honour of paying his reſpects to her, and ſhe, upon her return, deſired Dr. Boulter, the preceptor to prince Frederic, the father of the preſent king, to write to M. Saurin, to draw up a treatiſe on the education of princes. The work was done, but never printed, and the author received a handſome preſent from the princeſs, and afterwards a penſion from George II. to whom he dedicated a volume of his ſermons. M. Saurin died in 1730. His addreſs was a happy compound of the affable and the grave; his voice was ſtrong, clear, and harmonious, and he never loſt the management of it. His ſtyle was pure, unaffected, and eloquent. In the introductions to his ſermons he uſed to deliver himſelf in a tone modeſt and low; in the argumentative part he was clear and plain, pauſing at the cloſe of each period, that he might diſcover by the countenances of his hearers whether they were convinced by his reaſoning; and in his perorations he was extremely pathetic and animated. His doctrine was that inculcated by the French Proteſtants in general, which was, what is known under the term moderate Calviniſm. He was a fine ſcholar, and took the greateſt intereſt in the concerns and ſpiritual welfare of his hearers. He was author of 12 volumes of Sermons. From theſe, ſelections, tranſlated into Engliſh, were publiſhed between the years 1775 and 1784, by the Rev. Robert Robinſon, in 5 vols. 8vo. Dr. Hunter tranſlated and publiſhed a ſixth volume in 1796. M. Saurin was author of many other works, but the moſt conſiderable of them is entitled "Diſcourſes Hiſtorical, Critical, and Moral, on the moſt memorable Events of the Old and New Teſtament," which form ſix large volumes folio, but they were not all written by M. Saurin; he died before the third was finiſhed, which was completed by M. Roques, who added a fourth on the Old Teſtament. To theſe M. Beauſobre ſubjoined two volumes on the New Teſtament. See Robinſon's Memoirs of M. Saurin, prefixed to vol. i. of his ſermons.

Saurin, Joseph, a celebrated French mathematician, was born in 1659. He received the elements of learning under his father, and made a rapid progreſs in acquiring the learned languages. He was early admitted into the miniſtry, but from the freedom of his diſcourſes he was obliged to quit the country, and in 1683 he went to Geneva. From thence he removed to Berne, where he was appointed paſtor of the church of Bercher. Here he lived very peaceably till he ventured to preach againſt ſome of the eſtabliſhed doctrines of the church, to which he had with difficulty conformed. By this conduct he raiſed a ſtorm among the neighbouring clergy which threatened his perſonal ſafety. Under theſe circumſtances he withdrew to Holland, and diſguſted with the conduct of his own brethren, he reſolved to renounce the Proteſtant communion, and to embrace that of Rome. Having informed M. Boſſuet, the biſhop of Meaux, of his intention, he was encouraged by that prelate to viſit him at one of his country houſes, and make an abjuration before him. This was in the year 1690. This change in his religious profeſſion he carefully concealed till he could have an opportunity of withdrawing his wife from Switzerland; the report, however, was ſoon made known, and in bringing away his lady, they were both arreſted on the frontiers. By the interpoſition of Lewis XIV. they ſoon obtained their liberty. He now fixed his reſidence at Paris, was received under the moſt flattering auſpices, and was introduced by Boſſuet to the king, who almoſt immediately ſettled a penſion upon him. He now devoted himſelf chiefly to mathematical purſuits, and acquired a high reputation from the important papers which, from time to time, he contributed to the Journal des Savans, and the Memoirs of the Academy of Sciences. In 1707 he was admitted a member of the Academy in the quality of geometrician. He died in 1737, at the age of 78. His mathematical and philoſophical papers in the "Mémoires" of the Academy are to be found in the volumes publiſhed between the years 1709 and 1727.

Saurin, Bernard-Joseph, a dramatic writer, ſon of the laſt, was educated for the profeſſion of the law, which he deſerted for the more pleaſant ſtudies of polite literature. He practiſed ſome time as an advocate, and afterwards became a member of the French Academy. He was author of a tragedy entitled "Spartacus," which was acted with great applauſe at the theatres. This was followed by a comedy in proſe, entitled "Mœurs du Temps," in which he painted, with great ſucceſs, the manners of the higher ranks of the times in which he flouriſhed. Of his other pieces the following may be mentioned; "Blanche et Richard," being an imitation from Thomſon's "Edward and Eleanora;" "Beverley," from the "Gameſter;" "L'Anglomane;" and "Le Mariage de Julie." Saurin was the intimate friend of Monteſquieu, Voltaire, and Helvetius, the latter of whom gave him a penſion of a thouſand crowns, and upon his marriage preſented him with a ſum equal to the capital of that annuity. He died at Paris, at a great age, in the year 1781. He was a member of the French Academy. The "Théatre de Saurin" was printed in two vols. 8vo. His ſongs have been inſerted in ſeveral collections.

SAURITES, a ſtone mentioned by Pliny, and ſuppoſed by the ancients to be found in the belly of a lizard. It ſeems to have been a kind of cornelian of a pale fleſh-colour.

SAURIUM, in *Ancient Geography*, a town of Spain, in the Tarragonenſis, according to Mela.

SAUROMATÆ. See Sarmatians.

SAURUNGPOUR, in *Geography*, a town of Hindooſtan, in the Malwa country; 43 miles N.E. of Ougein. N. lat. 23° 35′. E. long. 76° 32′.

SAURURUS, in *Botany*, from σαυρα, *a lizard*, and ȣρα, *a tail*, alluding to the ſhape and ſcaly appearance of the long taper ſpike of flowers. The ſame name had been given by Plumier, for the ſame reaſon, to a tribe of plants, now referred to the genus *Piper*.—Linn. Gen. 184. Schreb. 246. Willd. Sp. Pl. v. 2. 292. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 2. 337. Purſh v. 1. 252. Juſſ. 19. Lamarck Illuſtr. t. 276.—Claſs and order, *Heptandria Tetragynia*. Nat. Ord. *Piperitæ*, Linn. *Naïades*, Juſſ.

Gen. Ch. *Cal.* Catkin oblong, covered with florets. Perianth to each floret of one leaf, oblong, lateral, coloured, permanent. *Cor.* none. *Stam.* Filaments ſeven, capillary, long; anthers oblong, erect. *Piſt.* Germens four, ſuperior, ovate, pointed; ſtyles none; ſtigmas oblong, united to the inner apex of each germen. *Peric.* Berries four, ovate, of one cell. *Seed* ſolitary, ovate.

Eſſ. Ch. Calyx a catkin, with ſingle-flowered ſcales. Corolla none. Germens four. Berries four, with ſolitary ſeeds.

1. S. *cernuus*. Drooping Lizard's Tail. Linn. Sp. Pl. 489. Willd. n. 1. Ait. n. 1. Purſh n. 1. (Serpentaria repens, floribus ſtamineis ſpicatis, bryoniæ nigræ folio ampliore pingui; Pluk. Almag. 343. t. 117. f. 3, 4.)—Frequent in ſwamps and ſhady wet woods, from Canada to Carolina, flowering in Auguſt and September. *Purſh.* It was cultivated by Miller, and is ſtill preſerved in curious gardens, treated as a hardy aquatic. The *root* is perennial, ſomewhat creeping. *Stems* riſing a foot above the water,

ſimple, round, leafy. *Leaves* alternate, ſtalked, heart-ſhaped, entire, ſmooth, with many radiating ribs. *Spikes* ſolitary, greeniſh-white, axillary, ſtalked, recurved, about two inches long, ſhorter than the leaves.

SAURUS, in *Ichthyology*, a name given by ſome authors to the lacertus or longer gar-fiſh, called *aguglia imperiale* by the Italians, and the *girrock* by the Engliſh fiſhermen.

Saurus, the *lizard-fiſh*, is alſo a name given by Salvian, and ſome other writers, to a fiſh of the cuculus kind, reſembling the mackarel in figure and taſte, and more uſually called *trachurus*.

SAURZAH, in *Geography*, a town of Hindooſtan, in Oude; 30 miles N.W. of Lucknow.

SAUSAGE, or Saucidge, a term of ſome ſignificancy in commerce, denoting a popular food, prepared of ſome crude meat, uſually either pork or veal, ſhred ſmall, ſeaſoned, and put up in a ſkin, in manner of a pudding. The word comes immediately from the French *ſauciſſe*, which ſignifies the ſame, formed of the Italian *ſalciccia*, and that, according to Salmaſius, from the Latin *ſalciſium*, written for *ſalſum*, *ſalted.*

The moſt eſteemed confection of this kind is the Bologna ſauſage, which is much thicker than the common one, and is made with much ſucceſs in ſome cities in Italy, particularly Bologna, Venice, &c. whence great quantities are exported to other places.

It is made of raw pork, well beaten in a mortar, with a quantity of garlick, pepper in the grain, and other ſpices; the Italians are furniſhed with great part of the ſkins or guts for their ſauſages in England; the quantities of that commodity yearly exported are greater than one would imagine.

Sausage, in *War*. See Saucisse.

SAUSCH, in *Geography*, a town of the duchy of Carniola; 4 miles N. of Stein.

SAUSELLE, a town of Spain, in the province of Leon; 30 miles N.N.W. of Civdad Rodrigo.

SAUSSEMENIL, a town of France, in the department of the Channel; 3 miles N. of Valognes.

SAUSSENBERG, a landgraviate in the ſouth part of the Briſgau, belonging to the marggrave of Hochberg.

SAUSSURE, Horace Benedict de, in *Biography*, born at Geneva in the year 1740, was the ſon of Nicholas de Sauſſure, a member of the council of Two Hundred, known by his works on agriculture. From his father, and other diſtinguiſhed naturaliſts who adorned his native place, the ſubject of this article imbibed a great ardour for the ſtudy of nature, and he made ſo rapid a progreſs, that at the age of 22 he obtained the profeſſorſhip of philoſophy at Geneva, which he held with high reputation during a period of 25 years. His vacations from public duty were employed in travels, which, however, were devoted to the improvement of his mind, and to the increaſe of his ſtock of knowledge. He viſited France twice; the firſt time for the purpoſe of examining ſome extinct volcanoes in different parts, and the ſecond time in order that he might ſtudy the principles of aeroſtation. He alſo came over to England, became acquainted with Franklin, and went to Holland for ſcientific purpoſes. The ſtructure and elevation of mountains were the eſpecial objects of his enquiries, and upon a journey to Italy he carefully examined the curious iron mines of the now celebrated iſland of Elba, aſcended Veſuvius with ſir W. Hamilton, and he meaſured the height of mount Etna. Botany was likewiſe one of his purſuits, and he diſcovered ſeveral new ſpecies of lichens, and two kinds of tremella having an oſcillatory motion. In a correſpondence with Spallanzani he communicated to him ſeveral obſervations on infuſory animalcules, in order to prove that they follow the law of polypes in their reproduction. His ingenuity was diſplayed in the invention of ſeveral delicate inſtruments, ſuch as a "cyanometer," to aſcertain the degree of blue colour in the ſky; an "anemometer;" an "electrometer;" an inſtrument to detect the preſence of iron in minerals; and another to determine the force of magnetiſm; an "helio-thermometer," and a hair "hygrometer," which is much in uſe, and which is reckoned the moſt ingenious of all his inventions. It was, however, chiefly as an explorer of mountains that Sauſſure rendered his name celebrated. In 1760 he viſited the glaciers of Chamouni, and from this time he reſolved to make annual journeys in the Alps, till he had purſued their chains in every direction. In 1779 he had croſſed them fourteen times, in eight different tracks. The firſt volume of his travels through the Alps, publiſhed in this year, contains a circumſtantial deſcription of the environs of Geneva, and of an excurſion as far as Chamouni, a village at the foot of Mont-Blanc. During the troubles of Geneva in 1782, he made a vaſt number of curious and intereſting experiments, of which he publiſhed an account in 1783. This has been thought to be his beſt work. De Sauſſure reſigned his chair to Pictet, who diſcharged the duties of his office with high reputation. Still the philoſopher was intereſted on the ſubject of education, and projected a plan of reform in that conducted at Geneva. The deſign of this was to make young people, at a very early period, acquainted with the natural ſciences and mathematics. It was not, however, carried into effect. In 1786 he publiſhed his ſecond volume of travels, containing a deſcription of the Alps round Mont-Blanc, the whole having been examined with the eye of a mineralogiſt and geologiſt. He founded the "Society of Arts," to the operation of which Geneva is ſaid to have been much indebted for the ſtate of proſperity to which it arrived. Over that ſociety he preſided as long as he lived. In 1788 Sauſſure, with his eldeſt ſon, encamped for 17 days on the Col du Geant, which he employed in accurate and intereſting obſervations, both meteorological and geological. In theſe branches of knowledge he was confeſſedly one of the greateſt proficients in Europe, and his numerous writings on theſe and other ſcientific ſubjects, gave him admiſſion into the principal learned ſocieties in different countries. He was viſited by all the eminent and illuſtrious travellers who paſſed through Geneva, whom he inſtructed by his converſation, and gratified with the view of a cabinet, rich in the natural products that he had collected during his travels. When Geneva was united to the French republic he was made deputy to the National aſſembly. But this revolution, in its deſtructive courſe, ſwept away the greateſt part of his fortune, and its political ſtorms ruined the peace of his mind. In 1794 his health began to decline, and a ſevere paralytic ſeizure almoſt wholly deprived him of the uſe of his limbs; he was ſtill active in his mind, and prepared the two laſt volumes of his travels for the preſs, which appeared in 1796. They contain a maſs of new facts and obſervations of great importance to ſcience. During his illneſs he publiſhed "Obſervations on the Fuſibility of Stones by means of the Blowpipe." He was, in general, a Neptunian, that is, aſcribed the revolutions of the globe to water, and ſuppoſed it to be poſſible that mountains ſhould have been thrown up by elaſtic fluids diſengaged from the cavities of the earth. He died on the 22d of March 1799, in the 59th year of his age, lamented by his family, to whom he was dear; by his country, to which he had done honour; and by Europe at large, the knowledge of which he had greatly extended.

SAUSTRA Beady, in *Natural Hiſtory*, a name given by the people of the Eaſt Indies, to a kind of foſſile, to which they attribute great virtues in medicine.

Before it is given internally, it undergoes a hundred calcinations, and ſeveral preparations with the juices of herbs. When the operation is over, they ſay it will cure a thouſand diſeaſes. It has its name from thence, the word *ſauſtra* ſignifying with them *a thouſand.*

It is a talcy ſtone, and in its native ſtate is of a reddiſh colour.

SAUT, in the *Manege.* See SALTS.

SAUTGUD, in *Geography*, a town of Hindooſtan, in the Carnatic; 25 miles S.S.W. of Chittoor.

SAUTHEY, a river of Wales, in the county of Caermarthen, which runs into the Towy, about a mile S. from Llangadock.

SAVU, an iſland in the Eaſt Indian ſea, about eight leagues long from E. to W. The harbour in which Cook lay, when he viſited it in September 1770, is called Seba, from the diſtrict to which it belongs: it is ſituated on the N.W. ſide of the iſland, and well ſheltered from the S.W. trade wind, but open to the N.W. There are ſaid to be two other bays, where ſhips might anchor, the beſt of them being called Timo, and lying on the S.W. ſide of the S.E. point. The ſea-coaſt, in general, is low; but in the middle of the iſland there are hills of conſiderable height. At this time, which was the latter end of the dry ſeaſon, there had been no rain for ſeven months; and when this dry ſeaſon continues ſo long, there is no running ſtream of freſh water upon the whole iſland, but only ſmall ſprings, at a conſiderable diſtance from the ſea-ſide; and yet nothing, we are told, can be imagined ſo beautiful as the proſpect of the country from the ſhip. The level ground next to the ſea was covered with cocoa-nut trees, and a kind of palm, called "arecas;" and beyond them the hills, which roſe in a gentle and regular aſcent, were richly clothed, quite to the ſummit, with plantations of the fan-palm, forming an almoſt impenetrable grove. How much muſt even this proſpect be improved, when every foot of ground between the trees is covered with verdure, by maize, and millet, and indigo, can ſcarcely be conceived but by a powerful imagination not unacquainted with the ſtatelineſs and beauty of the trees that adorn this part of the earth. The dry ſeaſon commences in March or April, and ends in October or November. The principal trees of this iſland are the fan-palm, the cocoa-nut, tamarind, limes, oranges, and mangoes; and other vegetable productions are maize, Guinea corn, rice, millet, callevances, and water-melons. Here were alſo ſeen one ſugar-cane, and a few kinds of European garden ſtuff; particularly celery, marjoram, fennel, and garlic. For the ſupply of luxury, it has betel, areca, tobacco, cotton, indigo, and a ſmall quantity of cinnamon, and ſeveral other kinds of fruit. The tame animals are buffaloes, ſheep, goats, hogs, fowls, pigeons, horſes, aſſes, dogs and cats, all in great abundance. Of the fiſh which the ſea produces here, we have no account; turtles are ſometimes found upon the coaſt. The people are rather under the middling ſize; the women are ſhort and ſquat-built; their complexion is a dark brown, and their hair univerſally black and lank. The men are in general well-made, vigorous, and active, and exhibit a great variety in their features; but the women are, on the contrary, all alike. Both ſexes eradicate their hair; but the men ſuffer a little to remain upon their upper lips, which is always kept ſhort. The dreſs of both ſexes conſiſts of cotton cloths of their own manufacture, which being dyed blue in the yarn, and not uniformly of the ſame ſhade, exhibit clouds or waves of that colour. The ornaments of theſe people are very numerous; they conſiſted of gold chains worn round their necks, and rings which deſcended from one generation to another, beads worn about the neck and as bracelets on the wriſts, and alſo round the waiſts of the women. Both ſexes had their ears bored, but they affixed no ornaments to them. Almoſt all the men had their names traced upon their arms in indelible characters of a black colour, and the women had a ſquare ornament of flouriſhed lines, impreſſed in the ſame manner, juſt under the bend of the elbow. The houſes of Savu are all built upon the ſame plan, and differently in ſize, being large in proportion to the rank and riches of the proprietor. Some are 400 feet long and ſome not 20; all are raiſed upon poſts about four feet high; the roofs are thatched with palm leaves; and the ſpace within is generally divided lengthwiſe into three equal parts. The food of theſe people conſiſts of every tame animal in their country. The hog being firſt in eſtimation, and the horſe the ſecond; next to the horſe is the buffalo, then their poultry; and they ſeemed to prefer dogs and cats to ſheep and goats. Of fiſh they are not fond, and it is never eaten but by the poor people, and by them only on particular occaſions, when their ſituation or buſineſs will not allow of their obtaining any other ſuſtenance. The fan-palm is, at certain times, a ſuccedaneum to all other food, both for man and beaſt. A kind of wine, called toddy, is procured by inciſion from the buds of this tree; of the ſurplus, above that which is neceſſary for their common drink, they make both ſyrup and a coarſe ſugar. The leaves of this tree are uſed for thatching houſes, and for making baſkets, cups, umbrellas, and tobacco-pipes. The common method of dreſſing food is by boiling, and as firewood is very ſcarce, they are very ſaving of their fuel, and adopt expedients for uſing as little of it as poſſible. Both ſexes are ſlaviſhly addicted to the hateful and pernicious habit of chewing beetle and areca, which they practiſe inceſſantly, mixing with them a kind of white lime, made of coral ſtone and ſhells, and a ſmall quantity of tobacco. Thoſe who are not without a mouthful of this odious preparation are ſmoking; and they are accuſtomed to ſwallow the ſmoke. The natives of this iſland are diſtributed into five principalities or nigrees, each of which is governed by its reſpective raja or king; and though they are of a warlike diſpoſition, and always defend themſelves courageouſly againſt foreign invaders, they have lived, for time immemorial, in the ſtricteſt alliance and moſt cordial friendſhip with each other. It is ſaid that the iſland can raiſe, upon very ſhort notice, 7300 fighting men, armed with muſkets, ſpears, lances, and targets. Beſides theſe arms, each man is furniſhed with a pole-ax of a large ſize; and they are ſo dextrous with their lances, that at the diſtance of 60 feet they can throw them ſo exactly as to pierce a man's heart, and with ſuch force as to paſs through his body. There ſeemed to be diſtinction of rank between the raja and the land-owner; the inferior ranks conſiſt of manufacturers, labouring poor, and ſlaves. The ſlaves are connected with the eſtate, and both deſcend together. Although the land-owner may ſell his ſlave, he has no other power over his perſon, ſo much as even to correct him, without the privity and approbation of the raja. Some have 500 ſlaves, and ſome not half a dozen; the common price of each is a fat hog. When a great man goes out, he is commonly attended by two or more of them. In theſe attendants conſiſt their whole magnificence; for the raja himſelf has no other mark of diſtinction. The chief object of pride among theſe people is a long pedigree of reſpectable anceſtors. Every raja ſets up in the principal town of his province, or nigree, a large ſtone, which ſerves as a memorial of his reign. Many of theſe ſtones are ſo large, that it is difficult to conceive how they could have been brought to their preſent ſituation, eſpecially as it is the ſummit of a hill.

Theſe ſtones ſerve not only to record the reigns of ſucceſſive princes, but for tables at public feſtivals, which are proclaimed on occaſion of the death of any raja. Such is the profuſion at theſe feſtivals, and ſuch their duration, that they are ſucceeded by faſts, and the whole kingdom is obliged to ſubſiſt upon ſyrup and water if it happens in the dry ſeaſon, and no vegetables can be procured.

The religion of theſe people is an abſurd kind of Paganiſm, every man chooſing his own god, and determining for himſelf how he ought to be worſhipped; ſo that there are almoſt as many gods and modes of worſhip as people. In their morals, however, they are ſaid to be irreproachable, even upon the principles of Chriſtianity: every man has one wife; inſtances of theft are very rare; and when mutual injuries occur, the termination and ſettlement of them are referred to the determination of their king, as they wiſh to avoid debate and all occaſions of reſentment and ill-will. They appear to be healthy and long-lived. They are cleanly and delicate. The boats uſed in this iſland are a kind of proa.

This iſland was ſeized by the Portugueſe as ſoon almoſt as they found their way into this part of the ocean; but they were, in a ſhort time, ſupplanted by the Dutch. The iſlands in the vicinity of Savu are Timor and Rotte, three little iſlands called the "Solars," under the influence of the Dutch ſettlement at Concordia, and Ende, W. of the Solars, in the hands of the Portugueſe, who have a good town and harbour in the N.E. corner of it, called Larntuca. The inhabitants of each of theſe little iſlands have a language peculiar to themſelves; and it is an object of Dutch policy to prevent, as much as poſſible, their learning the language of each other. The language of Savu appears to have ſome affinity with that of the South-ſea iſlands, many of the words being exactly the ſame, and the numbers manifeſtly derived from the ſame ſource. The middle of this iſland lies in about S. lat. 10° 35′. W. long. 237° 30′. Hawkeſworth's Voyages, vol. i. p. 277, &c.

SAUVAGE'RE, La, a town of France, in the department of the Orne; 10 miles E. of Domfront.

SAUVAGES, Francis Boissier de, in *Biography*, a diſtinguiſhed phyſician, and the inventor of modern noſology, was the ſixth ſon of a military officer of rank, and was born at Alais, in Lower Languedoc, on the 12th of May, 1706. The means of education which his native town then afforded were very limited, and the only tutors whoſe aſſiſtance he had were men of indifferent attainments. Nevertheleſs his own talents enabled him to overcome theſe obſtacles, and his progreſs in literature and philoſophy was great and rapid. Having determined to adopt the profeſſion of medicine, he went to Montpellier in 1722, where he attended the courſes delivered by Chicoyneau, Aſtruc, and other celebrated profeſſors, and received the degree of doctor in 1726. The theſis which he defended on this occaſion attracted a good deal of notice, partly perhaps from the ſingularity of the ſubject; which was, "Si l'amour peut être guéri par les remèdes tirés des plantes?" He ſtill continued to purſue his ſtudies; and in 1730 went to Paris with a view to farther improvement in his profeſſion. He afterwards returned to Montpellier, where he obtained a profeſſorſhip in 1734. His reputation for ingenuity of ſpeculation and extenſive reading, and his knowledge of mathematical ſcience, ſeemed to retard his progreſs to practice; as it was hinted that he was a mere ingenious theoriſt; nevertheleſs his ſtudies never interfered with his attention to the diſeaſes which he was called upon to treat. He adopted with ardour the doctrine of Stahl reſpecting the influence of the *anima medica*, and was diſpoſed to combine this with the principles of the mechanical ſect. In 1740 Sauvages was appointed demonſtrator of the plants in the botanic garden, and in 1752 he was made profeſſor of botany; in the performance of the duties of which office he obtained the ſame celebrity, which he had acquired in the diſcharge of his other avocations. He married in 1748, and had two ſons and four daughters, who ſurvived him. A ſerious diſeaſe, which continued nearly two years, unfortunately cut him off in the midſt of his uſeful and honourable career, in the month of February, 1767, in the 61ſt year of his age.

Sauvages was a man of great ſimplicity of manners and openneſs of character. He was much loved by his pupils, becauſe he communicated freely all that he knew, and received with equal readineſs whatever information any one was enabled to give him. His knowledge came forth without pomp or diſplay, in the way of ordinary converſation, though the habit of teaching ſometimes impreſſed the formality of lecture upon his manner in private: nevertheleſs, the ability and information which he always evinced, ſhed a charm upon his ſociety. Sauvages was an able mathematician, an accurate obſerver of phenomena, and ingenious in deviſing experiments; and he was indefatigable in the performance of all uſeful labours. He had, however, a little too much bias to ſyſtems, ſo that he did not always conſult facts uninfluenced by prepoſſeſſion. He was a member of the moſt learned ſocieties of Europe, *viz.* of the Royal Society of London, of thoſe of Berlin, Upſal, Stockholm, and Montpellier, of the Academy "Naturæ Curioſorum," of the Phyſico-Botanical Academy of Florence, and of the Inſtitute of Bologna. He obtained the prizes given by many public bodies to the beſt eſſays on given ſubjects, and a collection of theſe prize-eſſays was publiſhed at Lyons in 1770, in two volumes, with the title of "Chef d'Œuvres de M. de Sauvages." The following is a liſt of his works. "Diſſertation ſur les Animaux vênimeux;" "Nouvelles Claſſes des Maladies dans un ordre ſemblable à celui des Botaniſtes, comprenant les genres et les eſpèces," Avignon 1732, in 12°. This is the ſkeleton of his great ſyſtem of noſology, which has celebrated his name, but which was not publiſhed in its complete form till after an additional labour of thirty years had been beſtowed upon it. "Memoire ſur les Eaux Minerales d'Alais, pour ſervir à l'Hiſtoire Naturelle de la Province," 1736; "Theoria Febris;" Monſpel. 1738, in which he ſupported the theory of Stahl; "Pathologia Methodica," 1739; "La Màniere d'elever les Vers à Soie," 1740; "Nova Somni Theoria," id.; "De Motuum Vitalium Cauſâ," 1741; "Inflammationis Theoria," 1743; "Mémoire ſur les Maladies des Bœufs du Vivarais," 1746; "Diſſertatio de vaſorum capillarium corporis humani ſuctu," 1747; "De Noctambulatione," 1748; "De Hemiplegia per Electricitatem ſanata," 1749; a prize-eſſay "Sur la nature et la cauſe de la Rage," id.; "Conſpectus Phyſiologicus," 1751; "Methodus foliorum; ſeu plantæ Floræ Monſpelienſis juxta foliorum ordinem, &c." Hag. 1751. This work contained about 500 plants, omitted in the Botanicon Monſpelienſe of Magnol. "Diſſertation ſur des Médicamens qui affectent certaines parties du corps plutôt que d'autres," Bourdeaux, 1752; "Nova pulſûs et circulationis Theoria," id.; "Embryologia, ſeu, Diſſertatio de Fœtu," 1753; "Synopſis morborum oculis inſidentium, genera et ſpecies exponens," id.; "Theoria Tumorum," id.; a prize diſſertation "Sur la manière dont l'air agit ſur le corps humain," 1754; "Phyſiologiæ Mechanicæ Elementa," 1755; "Theoria doloris," 1757. Three diſſertations in this and the following year, "De Reſpiratione difficili;" "De aſtrorum influxu in hominem ;" "De Viſione." In 1759 "Medicinæ Sinenſis Conſpectus ;" and "Theoria Convulſionis :" and in the three following years diſſertations "De Amblyopia," "De Suffuſione," "De Anima redivivâ," "De Catharticis," "De prognoſi Medicâ ex Necrologis eruendâ ;" and an anſwer to Eberhard, "De animi imperio in corp." His laſt work was the great reſult of more than thirty years' labour, "Noſologia Methodica, ſiſtens morborum claſſes, genera, et ſpecies, juxta Sydenhami mentem, et Botanicorum ordinem," Amſt. 1763, in five volumes, 8vo. ; a work with which his name will ſurvive as long as noſology is the ſubject of the ſtudy of the phyſician. We have entered at length into the plan and principles of the claſſification of diſeaſes propoſed by Sauvages, in a former article. (See Nosology.) He had himſelf collected many new obſervations and deſcriptions, with a view to incorporate them in a ſecond edition ; but he did not live to accompliſh this intention. Theſe materials, however, were uſed by Dr. Cramer, in a new edition, publiſhed at Amſterdam in 1678, in 2 vols. 4to. See Eloy Dict. Hiſt. de la Médecine.

SAUVAGESIA, in *Botany*, was ſo called by Linnæus in honour of his diſtinguiſhed friend and correſpondent de Sauvages, the celebrated phyſician of Montpellier, who preſented him with his own entire herbarium, collected in that neighbourhood, which is now incorporated with the Linnæan collection, each ſpecimen being diſtinguiſhed by the letter *m*.—Linn. Gen. 112. Schreb. 157. Willd. Sp. Pl. v. 1. 1185. Mart. Mill. Dict. v. 4. Juſſ. 426. Lamarck Illuſtr. t. 140.—Claſs and order, *Pentandria Monogynia*. Nat. Ord. doubtful, Linn. Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, in five deep lanceolate, acute, concave, ſpreading, permanent ſegments. *Cor.* Petals five, obtuſe, equal, ovate, inclining to rhomboid, the length of the calyx. Nectary of five ſmaller leaves, alternate with the petals, oblong, erect, ſurrounded with numerous ſhort hairs. *Stam.* Filaments five, awl-ſhaped, very ſhort ; anthers oblong, acute, ſhort. *Piſt.* Germen ſuperior, ovate ; ſtyle ſimple, the length of the ſtamens ; ſtigma ſimple, obtuſe. *Peric.* Capſule ovate, pointed, of one cell, ſplitting at the top into three valves, with inflexed margins. *Seeds* numerous, minute, ranged longitudinally.

Eſſ. Ch. Petals five. Nectary of five leaves, encompaſſed by hairs, alternate with the petals. Calyx of five leaves. Capſule of one cell, with three valves and many ſeeds.

1. S. *erecta*. Upright Sauvageſia. Linn. Sp. Pl. 294. Willd. n. 1. Jacq. Amer. 77. t. 51. f. 3. (S. Adima ; Aubl. Guian. v. 1. 251. t. 100. f. *a*. Iron herbaceus minor, foliis oblongis leviſſimè crenatis, ſtipulis ciliatis, floribus ſingularibus ad alas ; Browne Jam. 179. t. 12. f. 3.) —Native of mountainous paſtures in Martinico and Jamaica, but not common. *Stem* branched, leafy ; according to Jacquin always erect ; Browne deſcribes it as obliquely aſcending. *Leaves* alternate, more or leſs ſtalked, oblong, ſerrated, ſmooth above, from one to one and a half inch in length. *Stipulas* lanceolate, remarkably fringed. *Flowers* axillary, ſolitary, on ſhort ſtalks, with white *petals*, the *calyx* often purpliſh.

Lamarck ſeems, by his plate, to have intended making Browne's plant a different ſpecies from Jacquin's. We have noticed ſeveral different appearances, as to colour and luxuriance, in various dried ſpecimens of *Sauvageſia*, but ſcarcely any ſpecific diſtinctions.

SAUVASSANGES, in *Geography*, a town of France, in the department of the Puy de Dôme ; 15 miles S. of Ambert.

SAUVE, a town of France, in the department of the Gard ; 4 miles S.E. of St. Hypolite.

SAUVEL, a river of France, which runs into the Rhine near Straſburg.

SAUVER, or Sur, a river of France, which runs into the Rhine, between Seltz and Fort Louis.

Sauver, Fr. in *Muſic*, to reſolve a diſcord. (See Counterpoint, and Resolution.) A diſcord muſt be reſolved upwards or downwards diatonically, never by leaps. The ſharp 2d, ſharp 4th, and ſharp 7th, aſcend ; all other diſcords deſcend one degree upon a concord to the next baſs. Double diſcords, ſuch as the $^{9}_{4}$ and $^{9}_{7}$, muſt be doubly prepared and doubly reſolved. Rouſſeau regards the reſolution of every diſcord as a kind of cadence. See Cadence.

SAUVETAT, La, in *Geography*, a town of France, in the department of the Lot and Garonne ; 5 miles N.W. of Lauzun. N. lat. 44° 37′. E. long. 0° 14′.

SAUVETERRE, a town of France, in the department of the Aveyron, and chief place of a canton, in the diſtrict of Rodes ; 15 miles S.W. of Rodes. The place contains 823, and the canton 6629 inhabitants, on a territory of 220 kiliometres, in 16 communes. N. lat. 44° 13′. E. long. 2° 24′.—Alſo, a town of France, in the department of the Lower Pyrenées, and chief place of a canton, in the diſtrict of Orthes ; 9 miles S.W. of Orthes. The place contains 1611, and the canton 10,653 inhabitants, on a territory of 162½ kiliometres, in 30 communes.—Alſo, a town of France, in the department of the Gironde ; 21 miles E.S.E. of Bourdeaux.—Alſo, a town of France, in the department of the Lot and Garonne ; 10 miles E.N.E. of Montflanquin.

SAUVEUR, Joseph, in *Biography*, a French mathematician, was born at La Flêche in the year 1653. Till he was ſeven years old he was completely dumb, and even then the organs of ſpeech were not ſo effectually developed, but that he was ever afterwards obliged to ſpeak very ſlowly, in order to be intelligible. In early life he diſcovered a great turn for mechanics, and conſtructed a number of little machines. He was ſent to the college of Jeſuits for inſtruction in the claſſics and belles lettres ; but he could ſettle to nothing but arithmetic and geometry. He was deſigned for the church, and was ſent to Paris to ſtudy philoſophy and theology : but to theſe new departments of learning he devoted very little attention ; nevertheleſs, in a ſingle month he made himſelf maſter of the firſt ſix books of Euclid without the aid of a tutor, and entered upon other parts of the mathematics, for the ſtudy of which he felt a predominant bias. On account of the impediment in his ſpeech, he was adviſed to abandon all thoughts of the eccleſiaſtical profeſſion, and to engage in that of medicine : but he determined to devote himſelf entirely to his favourite ſcience, and to acquire ſuch an acquaintance with it, as to render himſelf independent, by teaching others. In this object he completely ſucceeded, and that ſo ſpeedily, that at the age of twenty-three he had become a faſhionable preceptor in mathematics, and had prince Eugene for his pupil. In 1680 he was choſen to teach mathematics to the pages of the dauphineſs, and in the following year he went to Chantilly, with another philoſopher, to make experiments on the waters at that place, by which he gained much credit, and the patronage of the prince of Condè, who frequently had recourſe to his talents, and beſtowed upon him many marks of his favour. In 1686 he was appointed mathematical profeſſor in the royal college. During his viſits to Chantilly, M. Sauveur conceived the deſign of writing a treatiſe on fortification, and in order that he might combine practice with theory, he went, in 1691, to the ſiege of Mons, and ſpent every day in the trenches. After the ſiege was over, he viſited, with the ſame view, all the ſtrong towns in Flanders, and on his return he was made mathematician to the court, with a penſion for life. In 1696 he was admitted a member of the Academy of Sciences: and upon the promotion of M. Vauban to be a marſhal of France in 1703, and his proceeding to join the army, M. Sauveur was, on his recommendation, nominated by the king his ſucceſſor in the office of examiner of the engineers, with a penſion, which he enjoyed till his death, in 1716, at the age of 63. He was twice married, and had children by both wives; and by the laſt a ſon, who, like himſelf, was dumb for the firſt ſeven years of his life. M. Sauveur was of a kind and obliging diſpoſition, and notwithſtanding the celebrity to which he had attained, he preſerved an humble deportment, and his original ſimplicity of manners. He uſed to lay it down as an axiom, that what one man could accompliſh in mathematics, another might if he choſe. This has been aſſerted by others beſides M. Sauveur, but certainly without any foundation in fact: mathematics, like every other branch of knowledge, requires talents as well as induſtry; and he whoſe abilities are the greateſt, will, cæteris paribus, be able to do much more than others. M. Sauveur ſtudied very cloſely the ſcience of muſic. He introduced a new diction in muſic, and invented a new doctrine of ſounds; and he was the firſt who diſcovered, by theory and experiment, the velocity of muſical ſtrings, and aſcertained the ſpaces which they deſcribe in their vibrations under all the circumſtances of tenſion and dimenſions. He invented the monochord and echometer. His writings on geometrical, muſical, and other ſubjects, are inſerted in different volumes of the Memoires of the Academy of Sciences from 1700 to 1716.

Sauveur had propoſed an expedient for a fixed pitch, or univerſal tone, to determine the baſis of all tones in the general muſical ſcale or ſyſtem; but his own reaſoning proves that there is no fixed tone in nature; and the very ingenious and very impracticable artifice by which he tried to find an arbitrator, proves but too plainly how far hypotheſes, or, if you will, the truths of ſpeculation, are from the ſimple rules of practice. There is no ſonorous body which is not affected by the perpetual atmoſpherical changes. Wood contracts and expands by heat and cold; ſtrings of all kinds lengthen and ſhorten by the ſame elements, whatever may be their tenſion. Even the *pierres ſonores*, the ſounding ſtones of China, muſt be affected, to a certain degree, in the open air, by the elements.

M. Sauveur was the inventor of the term *acouſtics* (from a Greek word which ſignifies *I hear*), which the Academie Royale adopted, and which implies the theory of ſounds and their properties. In his "Syſtem of Muſic," he gives at once the rules for determining the ratios of ſounds, and the notes which expreſs them.

He has alſo invented a kind of *chronomêtre*. It was a particular pendulum, intended to determine with accuracy the time of every muſical movement. The author propoſed to the Academy ſeveral expedients to that purpoſe. Rouſſeau was of opinion that none of them would ſucceed. But Romieu of Montpellier, the rival of Tartini in his "Terzo Suono," in a memoir read publicly at the academy of that city in 1751, ſays, that no one ever developed the nature of ſound as Sauveur has done; and adds, "I have often realized what he has advanced on the ſubject; and I do not believe that his excellent diſcovery can ever be overthrown."

Sauveur has given, in 1701, a general ſyſtem of intervals, and its application to every other ſyſtem, and to every inſtrument of muſic. In 1707 he gave a general method for forming a tempered ſyſtem of muſic, and the choice of that which ought to be followed. In 1711 he produced to the Academy a general table of tempered ſcales in muſic. "But all the ſyſtems of temperament which the imagination can ſuggeſt, (ſays M. Laborde, or rather his guide, the abbè Rouſſier,) ought henceforth to be laid aſide as uſeleſs, their abſurdity having been pointed out in the 'Memoir ſur la Muſ. des Anciens;' and as the twenty-one ſounds, of which the octave is compoſed, have certain ſtations or elevations in the ſcale, it would be madneſs to try to ſubſtitute others arbitrarily; but in the time of Sauveur this truth was ſtill unknown." Laborde.

SAUVIAT, in *Geography*, a town of France, in the department of the Upper Vienne; 6 miles N.E. of St. Leonard.

SAUVIGNEY-*les-Angirey*, a town of France, in the department of the Upper Saône; 6 miles E. of Gray.

SAVUS, in *Ancient Geography*, a navigable river of Pannonia, and one of the moſt conſiderable which fell into the Danube.—Alſo, a river of Africa, in the eaſtern part of Mauritania Cæſarienſis, which had its riſe about eight leagues to the ſouth of Icoſium, and ran into the ſea, between this town and Ruſtonium.—Alſo, a town of Venetia.

SAVUTO, in *Geography*, a river of Naples, which riſes in Calabria, and runs into the gulf of St. Eufemia, N. lat. 39° 8′. E. long. 16° 20′.—Alſo, a town of Naples, in Calabria Citra, on a river of the ſame name; 11 miles S. of Coſenza.

SAUX-*le-Duc*, a town of France, in the department of the Côte d'Or; 14 miles N.W. of Is ſur Tille.

SAUXILLANGES, a town of France, in the department of the Puy de Dôme, and chief place of a canton, in the diſtrict of Iſſoire; 6 miles E. of Iſſoire. The place contains 1744, and the canton 9957 inhabitants, on a territory of 180 kiliometres, in 16 communes.

SAUZA, a town of Naples, in Principato Citra; 6 miles N. of Policaſtro.

SAUZAY-*le-Poitiers*, a town of France, in the department of the Cher, and chief place of a canton, in the diſtrict of St. Amand; 7 miles S. of St. Amand. The place contains 631, and the canton 6096 inhabitants, on a territory of 287½ kiliometres, in 11 communes.

SAUZE'-*Veſſaly*, a town of France, in the department of the Two Sevres, and chief place of a canton, in the diſtrict of Melle; 7 miles S.E. of Melle. The place contains 1295, and the canton 9099 inhabitants, on a territory of 212½ kiliometres, in 12 communes.

SAUZET, a town of France, in the department of the Drome; 4 miles N.E. of Montelimart.

SAW, Serra, an inſtrument ſerving to divide into pieces divers ſolid matters, as wood, ſtone, marble, ivory, &c. The ſaw is one of the moſt uſeful machines, in the mechanic arts, ever invented. The fable which is perhaps founded on ſome ſurer tradition, attributes the invention of it to Icarus, who, vying with his father Dædalus, enriched the riſing arts with ſeveral diſcoveries. It is added he took the firſt hint from the ſpine or back-bone of a flat fiſh, ſuch as the ſoal. The ſaw is made of ſteel, with teeth; but thoſe differently filed, and turned, according to the uſe it is deſigned for. There is alſo a kind of ſaws without teeth, uſed in the ſawing of marble, and other ſtones.

The beſt ſaws are of tempered ſteel, ground bright and ſmooth: thoſe of iron are only hammer-hardened: hence, the firſt, beſides their being ſtiffer, are likewiſe found ſmoother, than the laſt. They are known to be well hammered by the ſtiff bending of the blade; and well or evenly ground, by the bending into a bow.

The edge, in which the teeth are, is always thicker than the back, in regard the back is to follow the edge. The teeth are cut and ſharpened by a triangular file; firſt fixing the blade of a ſaw in a whetting block.

When filed, the teeth are to be *ſet*, that is, to be turned alternately aſkew, or out of the right line, to make the wider kerf or fiſſure, that the back may follow the better. This is done by putting an inſtrument, called a *ſaw-wriſt*, between every other two teeth, and giving it a little wrench, which turns one of the teeth a little towards you, and the other a little from you. The teeth are always ſet ranker for coarſe cheap ſtuff, than for hard and fine; becauſe the ranker the tooth is ſet, the more ſtuff is loſt in the kerf; and if the ſtuff be hard, the greater is the labour of ſawing it.

The workmen who make the greateſt uſe of the ſaw, are the ſawyers, carpenters, joiners, eboniſts, ſtone-cutters, carvers, ſculptors, &c. The lapidaries too have their ſaw, as well as the workers in moſaic; but theſe bear little reſemblance to the common ſaws.

But of all mechanics there are none who have ſo many ſaws as the joiners; nor of ſo many different kinds. The chief are as follow:

Pit-ſaw, a large two-handed ſaw, uſed to ſaw timber in pits. It is ſet rank for coarſe ſtuff, ſo as to make a kerf or fiſſure of almoſt a quarter of an inch; but for finer ſtuff it is ſet finer.

Whip-ſaw, which is likewiſe two-handed, uſed to ſaw ſuch large pieces of ſtuff as the hand-ſaw will not eaſily reach.

The *Hand-ſaw* is made for a ſingle man's uſe; of which there are various kinds; as the

Ripping-ſaw, Tenon-ſaw, Saſh-ſaw: the two latter are ſtiffened by a narrow back of iron, as they are made very thin for fine work.

The *Two-hand*, or *Croſs-cut ſaw*, is much longer, and is uſed by two men.

The *Frame-ſaw* is a thin ſaw ſurrounded by a wooden frame, in which it is ſtretched very tight, to prevent its bending: it is uſed in a pit for cutting deals and vineers.

The *Compaſs-ſaw*, or *Turning-ſaw*, which is very narrow, has its teeth not uſually ſet out of a right line, like the above; but the cutting-edge is made thick, and the back thin, that it may freely be turned in a circular or compaſs-kerf.

The *Hack-ſaw* is made of a ſcythe jagged at the edge, and uſed for cutting off iron bolts.

The ſurgeons likewiſe uſe a ſaw to cut off bones. It is to be very ſmall, and light, in order to be managed with the more eaſe and freedom; the blade exceedingly fine, and the teeth exquiſitely ſharpened, to make its way more gently, and yet with more expedition, in amputations of limbs.

The ſaw is alſo a gardener's inſtrument, uſed in the pruning of trees, &c. It is chiefly applied in the cutting of old, dry, and conſequently hard woods, whether roots or branches, which might ſpoil the pruning-knife; and branches, which the knife could not well take off at one ſtroke.

Except on theſe occaſions, Quintiney always prefers the knife to the ſaw.

SAW-*fiſh*, in *Ichthyology*, the Engliſh name for the fiſh called by authors the *priſtis ſerra piſcis*, and *ſqualus priſtis* of Linnæus. It has theſe names from the form of its ſnout, which reſembles a large-toothed ſaw.

According to the new ſyſtem of Artedi, this is a ſpecies of ſqualus, and is diſtinguiſhed from the other ſpecies of the ſame genus, by the name of the ſqualus, with a long, pointed, and flattened ſnout, dentated on each ſide.

This fiſh, from its large ſize, is generally reckoned a kind of whale, but erroneouſly; for it is truly of the ſame genus with the galei or hound-fiſh. It is aſh-coloured on the back, and white on the belly; its head is of a heart-like ſhape, and flattened; its mouth is placed far below the end of the ſnout, and in the upper part of the head, as in the zygæna; its lips are rough and ſharp, like a file, but it has no other teeth; its head is terminated by a long and flat bony ſubſtance, furniſhed on each ſide with jags or points, like the deep teeth of a ſaw: there are from twenty to thirty of theſe teeth on each ſide; the body is round, and grows ſmall towards the tail. The ſword of this fiſh is ſometimes very long. It is found in the Weſtern ocean.

SAW-*wort*, in *Botany*. See SERRATULA.

SAWA, in *Geography*, a town of Africa, in the country of Sahara; 180 miles S.W. of Mourzouk. N. lat. 26°. E. long. 12° 10′.

SAWADABAD, a town of Hindooſtan; 3 miles W. of Benares.

SAWAN, a town of Bengal; 5 miles S.E. of Mauldah.

SAWAR, a town of Hindooſtan, in Bahar; 28 miles S. of Arrah.

SAWARA, or SAURA, *Upper*, an Indian town of North Carolina, on the Dan, in the county of Stoko; 23 miles N.W. of Guildford.

SAWARA, or *Saura, Lower*, an Indian town of North Carolina, on the Dan; 19 miles N.N.E. of Guildford.

SAWAY, a town on the S.E. coaſt of the iſland of Timor. S. lat. 9° 10′. E. long. 125° 10′.

SAWBRIDGEWORTH, or SABRIDGEWORTH, a market-town in the hundred of Braughin, and county of Hertford, England, is ſituated near the north-weſtern bank of the river Stort, at the diſtance of 12 miles N.E. from Hertford, and 25 miles N.N.E. from London. It occupies "a dry hill of gravel," and conſiſts of two ſtreets, interſecting each other at right angles. Henry VI. granted to the inhabitants the privileges of holding a weekly market on Wedneſday, and two annual fairs on the 23d of April, and the 19th of October; but at preſent the former right is little more than nominal. After the Conqueſt, the manor here was conferred by king William on Geoffrey de Magnaville, from whoſe family it was carried by marriage into that of William de Say, in the reign of king Richard I. Henry Bourchier, earl of Kent, became poſſeſſor of it in the ſame manner at a later period. This nobleman left an only daughter and heireſs, Anne, married to ſir William Parr, afterwards marquis of Northampton, who, having joined with the duke of Northumberland in his attempt to place lady Jane Grey on the throne, was condemned to death, after the acceſſion of queen Mary, and had his eſtates confiſcated to the crown. Since that period the manor has paſſed through various families, and is now the property of earl Hardwicke.

The church of Sabridgeworth is an ancient building in the earlieſt pointed ſtyle of architecture. It is divided into a nave, chancel, and aiſles, and has a maſſive, embattled tower at its weſtern extremity. The monuments are numerous, and among them are ſome fine old braſſes. One monument of the latter kind, in a ſmall chapel or chantry, diſplays two full-length figures, completely emaciated, and in winding-ſheets; which by the arms appear to have been intended to commemorate perſons connected with the family of the Plantagenets. Two other braſſes of a knight and his lady, in the ſame chapel, bear ſimilar arms; and adjoining are a very ancient tomb, and ſome curious braſſes of the Leventhorpes. In the chancel, under a rich canopy, is an altar-tomb, adorned with braſſes of a knight, his two wives, and their children. This monument has no inſcription; but Weever, in his "Funeral Monuments," attributes it to ſir Ralph Jocelyn, knt., who was twice lord-mayor of London, and whoſe family became ſeated at Hyde Hall, in this vicinity, as early as the thirty-third year of the reign of Henry III., by the marriage of Thomas Jocelyn with Maud, daughter and coheireſs of ſir John Hyde. Here are likewiſe monuments in memory of the Hewyts, ſome time lords of the manor. George, lord Hewyt, who was created a baron by king James II in 1689, and died the ſame year, is repreſented in armour, ſtanding upright, and ſurrounded by trophies. Sir Walter Mildmay, knt. and his lady, both lie buried, and have a monument in this church.

According to the parliamentary returns of 1811, Sabridgeworth contained 373 houſes, and 1827 inhabitants. The Hiſtorical Antiquities of Hertfordſhire, &c. by Sir Henry Chauncey, Knt. fol. London, 1700. Beauties of England and Wales, by E. W. Brayley, and John Britton, vol. vi. 8vo. 1806.

SAWING, the application of the ſaw, in dividing of timber, &c. into boards, &c.

There are wind-mills and water-mills which do the office of ſawing wood, with infinitely more expedition and eaſe than is performed by the hand. They conſiſt of ſeveral parallel ſaws, which are made to riſe and fall perpendicularly, by means of one of the grand principles of motion. A very few hands are here needed, *viz.* only to puſh forward the pieces of timber, which are laid on rollers, or ſuſpended by ropes, in proportion as the ſawing advances. Theſe mills are frequently uſed abroad; and have been alſo introduced in England; but the parliament, in conſideration of this, that they would ſpoil the ſawyers' trade, and ruin great numbers of families, thought fit to ſuppreſs them.

The mechaniſm of a ſawing-mill may be reduced to three principal things; the firſt, that the ſaw be drawn up and down as long as is neceſſary, by a motion communicated by water to the wheel; the ſecond, that the pieces of timber to be cut into boards be advanced by an uniform motion to receive the ſtrokes of the ſaw, for here the wood is to meet the ſaw, and not the ſaw to follow the wood, therefore the motion of the wood and that of the ſaw ought immediately to depend the one on the other: the third, that when the ſaw has cut through the whole length of the piece, the whole machine ſtops of itſelf, and remains immoveable, for fear, leſt having no obſtacle to ſurmount, the force of the water ſhould turn the wheel with too great rapidity, and break ſome part of the machine.

M. Felibien mentions a kind of long ſaws, invented by one Miſſon, inſpector of the marble quarries in the Pyreneans; by means of which ſtones are ſawed even in the rock itſelf, whence they are taken. He adds, that ſome of them were made twenty-three feet long; but does not deſcribe either their form or application: he only ſays, they are of iron, and without teeth.

The common ſawing-mill is ſo well known, as to require ſcarcely any deſcription. The ſaw is made to work vertically, being ſtretched in a wooden frame, which ſlides up and down, within another fixed frame, exactly the ſame as a window ſaſh riſes and falls in its frame: the motion is given to it by a crank placed beneath, and revolving by a wheel and pinion from the water-wheel; a fly-wheel is fixed upon the axis of the crank to equalize the movement, and the pinion is ſo proportioned, that the crank will make three or four turns to one of the water-wheel. The timber is faſtened upon a carriage, which is an horizontal frame, ſliding on the floor of the mill; and being ſufficiently narrow to paſs through the inſide of the vertical or moving ſaw-frame, it will carry the tree through, and ſubject it to the action of the ſaw: the carriage is provided with a rack, which is engaged by the teeth of a pinion, and this gives the means of advancing the carriage when the pinion is turned, which is done by means of a large ratchet-wheel, with a click moved by levers, connected with the ſaw-frame. In this manner, when the ſaw-frame riſes, the click ſlips over a certain number of teeth of the ratchet-wheel, but when it deſcends to make the cut, the click turns the ratchet-wheel round, and advances the wood forwards juſt as much as the ſaw will cut into it during its deſcent. The trees are generally dragged up an inclined plane, through a door at one end of the mill, and being placed upon the carriage, they go through the mill, and are divided by the ſaw into two or more pieces, which are carried forwards, and go out at a door on the oppoſite ſide of the mill, where a boat receives them. Sometimes the ſaw-frame is fitted up with ſeveral ſaws ſtretched parallel to each other, and at ſuch diſtances, that they will divide the whole tree into ſeveral boards of any required thickneſs at one operation.

A great improvement in ſawing-machines has been made by Mr. Brunel, by which they are enabled to cut more timber in a given time, with any given power, and alſo cut much more correctly, and without winding in the ſurfaces which the ſaws divide. A capital mill on this plan has been conſtructed by Mr. Maudſlay for the arſenal at Woolwich; it is driven by a ſteam-engine, which is a pattern of elegance in its appearance, as much as of perfection in its contrivance; the motion is communicated from this to the cranks of the four ſaw-frames, by leather belts, which are here very judiciouſly applied in lieu of cog-wheels, becauſe theſe will ſlip and yield if any thing ſhould get into the movements, but cog-wheels would in a ſimilar caſe break every thing to pieces. Each crank has an independent fly-wheel to regulate its motion, in addition to the great fly-wheel of the ſteam-engine. The vertical or moving frames for the ſaws are made of iron, but the ſides are hollow, and filled up with wood, by which means they are very ſtrong, but of no greater weight than neceſſary. The moſt ingenious part of the contrivance conſiſts in the means of ſtretching all the ſaws in the frame, ſo that they will be exactly parallel to each other, and all ſtrained to an equal degree of tenſion. The ſaws are ſo fitted in the frame, that they can be removed in a few minutes, and a new ſet of ſharp ſaws put in. Each ſaw has a piece of metal rivetted to it at each end, which are formed like hooks. The hook at the lower end of the ſaw is hooked into a proper receſs made in the lower croſs-bar of the ſaw-frame, and the upper hook is engaged with the hook of a ſhackle or link, which hangs upon the upper croſs-bar, and has wedges through it, by means of which it can be drawn tight to ſtrain the ſaw. As there is nothing to determine the parts of the croſs-bars where the hooks of the ſaws ſhall hang upon them, they can be ſet at any required diſtance aſunder; but to retain them, pieces of hard wood are put in between the blades of the ſaw at the upper and lower ends, and the ſpaces being thus filled up, they are bound tight by ſcrews, which are tapped into the ſides of the ſaw-frame. As the tenſion of the different ſaws would be very uncertain, if it depended merely upon driving the wedges of their ſhackles by a hammer, the inventor has applied a very ingenious kind of ſteelyard, to ſtrain each of the ſaws in its turn. It conſiſts of the following parts: a ſtrong axis is extended acroſs the fixed frame, in which the ſaw-frame ſlides, and above the top of this frame; from one ſide of this axis a lever proceeds, which has a weight fixed at the end, and from the oppoſite ſide of the axis proceed two ſhort levers, which are connected by links with a ſtrong croſs-bar, ſituated juſt over the upper croſs-bar of the ſaw-frame, when it is at its greateſt point of elevation. This ſteelyard croſs-bar has a link or ſhackle upon it, which can be united by a key with any one of the ſhackles upon the upper croſs-bar of the ſaw-frame, which ſhackles are, as before-mentioned, united by their hooks with the upper end of their reſpective ſaws; by this means the lever, with its weight, becomes a ſteelyard to draw up any one of the ſaws with a determinate force, and it can be applied ſucceſſively to all the different ſaws. In uſing this apparatus, the band or ſtrap of the crank-ſhaft is caſt off, to ſtop the motion of the ſaw-frame; the crank is turned round, to elevate the frame to the higheſt point; two wedges are then put in between the top of the ſaw-frame and a fixed part of the ſtationary frame, and this holds the ſaw-frame faſt whilſt the ſteelyard is applied, otherwiſe it would tend to draw up the frame, and ſtrain the crank and crank-rod. The ſharp ſaws are now put into the ſaw-frame, by hooking them upon the lower croſs-bar thereof, and uniting the upper hooks to the ſhackles on the upper croſs-bar: the pieces of wood are next put between the ſaws, according to the gauge of the wood which is intended to be ſawn, and bound faſt by the ſcrews, as before-mentioned. The loaded end of the ſteelyard is now lifted up by a rope paſſing over a pulley, and the link upon the croſs-bar of the ſteelyard is united with the ſhackle of one of the ſaws by means of its keys; then ſuffering the ſteelyard to deſcend, it ſtretches the ſaw: the wedge of the ſhackle for the ſaw is thruſt in by the hand as far as it will go, and thus retains the ſaw at the tenſion to which the ſteelyard had ſtrained it. The ſhackle of the ſteelyard is then diſengaged from this ſaw and removed to the next, and thus, in turn, all the ſaws are equally ſtrained, a circumſtance which is of great importance, becauſe any ſaw which is more ſlack than another will be liable to bend and cut crooked, when the grain of the wood tends to divert it from its true direction.

The carriages of this mill are very admirably contrived to hold the trees firmly, and to fix them in a little time: they are advanced, as the ſaws cut, by a rack and pinion, with a ratchet-wheel; and the click of the ratchet is moved by means of an excentric wheel, or camm, upon the axis of the crank. There is alſo a contrivance, by which the ſaw-frame is allowed to retreat a ſmall quantity in its aſcent, ſo that the teeth of the ſaw will be quite clear from the wood, when they return, that is, when they aſcend, and do not cut. Mr. Brunel has directed the execution of ſeveral other ſaw-mills upon the ſame principle, particularly a very large one in the dock-yard at Chatham.

Circular Sawing-Machines.—Theſe act by a circular ſteel plate, having teeth, like thoſe of a pit-ſaw, cut all round its circumference. This ſaw is fixed upon an axis, and made to revolve by bands or ſtraps with great rapidity. The wood being preſented to it, is cut by a continuous motion; and as this admits of a far greater velocity than can be given to any reciprocating machine, the circular ſaw cuts a ſurpriſing quantity of wood, not leſs from this circumſtance than becauſe it is always in action; whereas the reciprocating ſaw only cuts in one direction, and all the time occupied in the return is loſt. Attempts have been made to make reciprocating ſaw-frames cut double, by having the different ſaws reverſed, that is, ſome ſo placed that they ſhall cut in aſcending, and the others in deſcending; but this did not ſucceed, becauſe the ſaws which do not cut will not allow the others to advance into the wood, at leaſt without great friction upon the back of the returning ſaws.

The circular ſaw is uſually fixed in a horizontal table, or bench, which has a cleft, through which the ſaw comes up; the ſpindle being ſituated under the bench, and acroſs the direction of its length. A ſegment or portion of the ſaw is, therefore, left projecting above the bench; and the piece of wood being laid flat thereupon, it is advanced forwards to the ſaw, and cut with the greateſt facility, and is certain to be cut ſquare; but if the ſections are required to be at any other angle or bevel, the bench is inclined to ſuit it. A long parallel ruler is fixed down upon the bench, and this is capable of being brought nearer or farther from the ſaw, and thus forms a guide, againſt which the piece of wood is held; by this the ſaw cuts always to the ſame width; but the width can be varied at pleaſure.

The time of the introduction of this valuable machine is not well aſcertained. Circular ſaws, for cutting the teeth of watch and clock wheels, have been in uſe ſince the time of Dr. Hook; but we do not know who firſt applied the ſame to ſawing wood in the large way. Mr. Taylor of Southampton uſed them in his manufactory many years ago; but, we believe, they were moſt completely introduced by Mr. George Smart, and have ſince become very general for all kinds of purpoſes. (See the articles CANTEEN, COMB-CUTTING, and MACHINERY, *Block*, where deſcriptions of machines acting with circular ſaws will be found.) It only remains here to mention an improvement in the mode of mounting them, by Mr. Maudſlay. The firſt ſaws, as the moſt ſimple method, were made with ſharp conical points at each end of the ſpindle, and theſe were received into conical holes at the ends of ſcrews, fitted through the ſolid frame of the machine; or, otherwiſe, the points were made upon the ends of the fixed ſcrews, and the holes in the ends of the ſpindle. In either caſe, the parts were made of hardened ſteel, and the moſt accurate and convenient circular motion was thus obtained. But if this method is uſed on a large ſcale, and with a great velocity, the oil cannot be kept in the ſockets, and the friction will then cauſe the points of contact to heat: by heating, they expand, and thus increaſe the friction and the preſſure, ſo that the heat is rapidly increaſed, till the metal becomes ſoft, and will twiſt off the points. The reaſon of the eſcape of the oil is, that the centrifugal force induces the oil to mount up the cone, and thus eſcape from the point, where it is chiefly wanted. The ſaw-ſpindles made by Mr. Maudſlay have double conical ſockets, and the oil is introduced by a ſmall hole into the ſmalleſt part of the double cones, where they join; by this means, the centrifugal force draws the oil into the fitting, inſtead of throwing it out, as in the other inſtance.

An ingenious circular ſaw was preſented to the Society of Arts, by John Trotter, eſq., in 1805, and the Society complimented the inventor with their gold medal. It is called a curvilinear ſaw, being made concave, that is, like a circular diſh or bowl, inſtead of a flat circular plate. If this is a ſegment of a ſphere, the ſaw will cut ſegments of circles, inſtead of ſtraight lines. This is very uſeful for fellies of wheels, &c.; but by varying the curve of the ſaw, any required curve of a moderate bend may be cut.

Other circular ſaws have been made like the trepan uſed by ſurgeons; the ſize, of courſe, being determined by the ſize required to be cut. See MACHINERY, *Block.*

A patent has been obtained for a circular ſaw, or rather a ſaw with a continuous motion, which conſiſts of an endleſs ſteel band or blade, cut with teeth, and extended over two wheels placed at a diſtance aſunder, juſt like the endleſs ſtraps which are uſed to communicate motion from one wheel to another. The wood is applied to that part of the blade which is extended between the two wheels. We have not been informed if it is found to ſucceed in practice; but we fear there would be many difficulties in making ſuch endleſs belts of ſteel.

SAWKOSIN, in *Geography*, a town of the duchy of Warſaw; 33 miles N. of Ploczko.

SAWKUL, a town of Hindooſtan, in the circar of Mahur; 22 miles N. of Mahur.

SAWMBEAH, a town of Hindooſtan, in Bahar; 16 miles N.E. of Bahar.

SAWMILL Creek, a river of Maryland, which runs into the Potomack, N. lat. 39° 6′. W. long. 77° 20′.

SAWPOUR, a town of Hindooſtan, in the circar of Bopal; 6 miles S.E. of Bopaltol.

SAWREE, a river of Guzerat, which runs into the ſea; 10 miles S.E. of Puttan Sumnaut.

SAWTU, a town of America, in the ſtate of Georgia; 50 miles W.S.W. of Tugeloo.

SAWYER, *Sir* Robert, in *Biography*, an eminent lawyer, who flouriſhed in the reigns of Charles II. and James II., was a great admirer of lord chief juſtice Hale, whoſe virtues he imitated. He was attorney-general from 1681 to 1687, when he was removed from his office by James II., becauſe he nobly refuſed to aſſiſt him in his arbitrary meaſures, and hence he has a claim to the gratitude of poſterity.

Sawyer's *Ferry*, in *Geography*, a poſt-town of South Carolina; 14 miles N. of Nixonton.

Sawyer's, or *Afferadores Iſland*, a ſmall iſland on the W. coaſt of Mexico; which has on its S.E. ſide a ſmall creek of its name, into which boats can enter only at high water; 12 miles from the bar of Realejo.

SAX, a town of Switzerland, which gives name to a bailiwick in the canton of Zurich, on the Rhine; 8 miles S.E. of Appenzel.—Alſo, a town of Spain, in the province of Valencia, near which is an ancient citadel, built on the ſummit of a rock; 15 miles W. of Alicant.

SAXAPAHAW, the upper part of the N.W. branch of Cape Fear river, in North Carolina; formed by Aramanche and Deep rivers, and capable of navigation for boats about 50 miles.

SAXAZA, a town of Sweden, in the province of Warmeland; 38 miles N.W. of Carlſtadt.

SAXE, Maurice, *Count of*, in *Biography*, a celebrated general, born at Goſlar in 1696, was the natural ſon of Frederic Auguſtus I. elector of Saxony and king of Poland, by the counteſs of Konigſmarck. At a very early period he diſplayed a moſt decided taſte for arms. It was with difficulty that he was taught to read and write: the only means of inducing him to attend to his leſſons, was to promiſe him ſome military exerciſe when they were finiſhed. While he was a child he ſerved in the allied army, commanded by thoſe great maſters of the art of war, prince Eugene and the duke of Marlborough. He was preſent with the Saxon troops at the ſiege of Lille in the year 1708, and at that of Tournay, and at the battle of Malplaquet in the following year. Upon all occaſions he exhibited the moſt determined and enterpriſing valour, and in the campaign of 1710 he obtained the public eulogies of the allied generals. He accompanied the king of Poland to the ſiege of Straſburg in 1711, where he ſo much diſtinguiſhed himſelf, that a regiment of cavalry was raiſed for him, with which he fought againſt the Swedes at the battle of Gadebuſch. Soon after his mother procured him a marriage with the counteſs of Loben, a lady of fortune and beauty, by whom he had a child, which died in infancy. Count Saxe was, however, too much attached to licentious pleaſure to be able to live happily in a domeſtic union: he obtained a divorce in 1721, after which he never married again. In the mean time he had been purſuing his military career, and in 1717 he ſerved in Hungary under prince Eugene againſt the Turks. After the treaties of Utrecht and Paſſarowitz, having no longer a field for the exerciſe of his valour, he withdrew to France, in which he was fixed by a brevet of mareſchal-de-camp, granted to him in 1720 by the regent, duke of Orleans. He there engaged with great ardour in the ſtudy of all the branches of mathematics connected with the military art, and in tactical improvements. In the year 1722 he obtained the command of a German regiment in the French ſervice; he diſciplined it in a new method of exerciſe, the merit of which cauſed the chevalier Folard to predict that he would become one of the firſt generals of his time. On the death of the duke of Courland in 1725, count Saxe was inſtigated to become a candidate for the ſucceſſion to that ſovereignty, but he was in the end unſucceſsful, and after a long ſtruggle he gave it up, and returned to Paris. He there employed himſelf in cultivating his mind, and in his favourite military ſtudies, of which one of the fruits was a work which he entitled "Mes Reveries," full of ingenious and original thoughts on military ſubjects. In the new war which broke out in 1733, in conſequence of the death of the king of Poland, count Saxe declined the command of the Poliſh army offered him by his brother, the elector, and joined the French army on the Rhine, under the marſhal-duke of Berwick. His brilliant ſervices cauſed him, in 1734, to be advanced to the rank of lieutenant-general. After a ſhort peace in Europe, the death of the emperor Charles VI. occaſioned a new war, and in 1741 count Saxe took Prague by eſcalade, and then reduced Egra. In 1744 he was created a marſhal of France, and at the ſame time the chief command of an army in Flanders was given him. At this period he was in extremely ill health, and being aſked how he could venture in ſo weak a condition to take upon himſelf ſuch a burden, conſidering his ſituation, he replied, "my buſineſs is not to live, but to march." In 1745 he gained the famous battle of Fontenoy, during the heat of which he mounted on horſeback, though in ſuch a ſtate of debility, that his death was almoſt every moment expected. The fruits of this victory were all the principal towns in Flanders, of which Bruſſels ſurrendered the laſt in February 1746. The marſhal was greatly diſtinguiſhed in the campaigns of 1747 and 1748, which laſt was followed by the peace of Aix-la-Chapelle, and marſhal Saxe was appointed commandant-general of all the conqueſts in the Low Countries. He now, with his well-earned fame, retired to his eſtate in France, which had been given him by the king of France, where he paſſed his time in the ſociety of men of letters and artiſts. He only once quitted this retreat, and that was for the purpoſe of viſiting the king of Pruſſia at Berlin, where he was received with the higheſt honours. He died at the early age of 54, being worn out with the labours of his military life. In his laſt illneſs he ſaid to his phyſician, Senac, "I have had a fine dream," ſuch did he mean had been his life, which to others, certainly, had been ſomething more than a dream. By, and under his command, thouſands had been cut off in the prime of life; but generals and monarchs ſeldom regard the lives of their men, except as materials adapted to their uſe, and formed for their glory. Marſhal Saxe, though extremely licentious in his manners, remained attached to the Lutheran religion, and he was interred with great funeral pomp in the principal Lutheran church at Straſburgh, where a magnificent mauſoleum was erected to his memory. Marſhal Saxe, though ardent and enterpriſing, was, notwithſtanding our obſervation of commanders in general, ſparing of the lives of his ſoldiers. He was juſt to the merit of his officers, zealouſly diſplaying their ſervices, and ſupporting their intereſt at court. "He had," ſays his biographer, "a romantic imagination, and formed various projects of ambition beſides that reſpecting the dukedom of Courland; among theſe was a deſign upon the crown of Corſica, and ſeveral plans for ſettlements in America: and it is even ſaid that he had an idea of collecting the ſcattered nation of the Jews, and placing himſelf at their head." His "Reveries" have been ſeveral times reprinted; the beſt edition is that of Paris, 2 vols. 4to. 1757.

SAXE-COBURG, in *Geography*. See Coburg.

SAXE-GOTHA. See Gotha.

Saxegotha, a town or rather village in South Carolina, on the ſouthern bank of Cangaree river, about 48 miles N.W. of Auguſta, in Georgia.

SAXE-LAUENBURG, *Duchy of*, a principality of Germany, bounded on the N.W. by the duchy of Holſtein, on the N.E. and E. by the duchy of Mecklenburg, and on the S. and S.W. by the principality of Luneburg. The country is generally level and partly ſandy, covered with heath: but ſome parts of it produce corn and flax. The paſtures are conſiderable; and great profit is made of the acorns and beech-maſts collected in the woods. The lakes and rivers abound in various kinds of fiſh. The duchy contains four towns, and about 32,000 inhabitants, who are Lutherans: manufactures are little known among them. The exports conſiſt chiefly of rye, butter, cheeſe, timber, and fiſh. This country was formerly a part of Slavia Tranſalpina, and its inhabitants, who were a tribe of the Weſtern Slavi, or Wendi, were named Polabers. Henry the Lion, duke of Saxony and Bavaria, ſubjugated theſe Polabers, and held their country as his abſolute property. The imperial inveſtiture of it, together with a ſeat and vote among the princes of the empire, was firſt obtained by George I. king of England, as elector of Hanover, in the year 1716. This duchy, though dependent on the privy council of Hanover, had nevertheleſs its own regency.

SAXELEN, or Saxlen, a town of Switzerland, in the canton of Underwalden, on the lake of Sarnen; 12 miles S.S.E. of Lucern.

SAXEN, a town of Sweden, in the province of Medelpadia; 25 miles W. of Sundſwall.—Alſo, a town of Germany, belonging to Nuremberg, inſulated in Anſpach; 3 miles W.N.W. of Lichtenau.

SAXENBURG, an iſland in the South Atlantic ocean, diſcovered by John Lindeſtz, a Dutchman, in 1670. S. lat. 30° 45'. W. long. 20°.

Saxenburg, or *Sachſenburg*, a town of the duchy of Carinthia, on the Drave, belonging to the archbiſhop of Salzburg. Near it are three citadels and a ſtrong paſs; 38 miles W. of Clagenfurt. N. lat. 46° 45'. E. long. 13° 10'.

SAXI, ſometimes ſpelt Sassi, Joseph Anthony, in *Biography*, an Italian writer in eccleſiaſtical hiſtory, was born at Milan in the year 1673. He was educated to the eccleſiaſtical profeſſion, and for ſome time taught the belles lettres in his native city. He afterwards diſcharged the duties of a miſſionary. In 1703 he was admitted a doctor of the Ambroſian college at Milan, and eight years afterwards he was appointed director of that college, and of the library attached to it. He died about the year 1756. He was author of many theological, hiſtorical, and chronological works, of which the titles of the following may be mentioned; "Epiſtola ad Card. Quirium de Literatura Mediolanenſium," 4to. "De Studiis Mediolanenſium Antiquis et Novis." "Archiepiſcoporum Mediolanenſium Series critico-chronologica." "Hiſtoria Getarum." Some of the works of Saxi have been inſerted in the collection "Rerum Italicarum Scriptor." by Muratori.

SAXIFRAGA, in *Botany*, an appellation given by ſome old writers to ſeveral rock plants, which by inſinuating their roots into the crevices of ſtones, ſeparate or break them to pieces. This is expreſſed by the name itſelf, derived from *ſaxum*, a ſtone, and *frango*, to break; and the plants in queſtion were conſequently ſuppoſed likely to be uſeful in breaking down the *calculus* in the human bladder. We meet with few more abſurd hypotheſes, in the darkeſt ages of medical or botanical ſcience. Tournefort and Linnæus have retained this name, for a beautiful genus of herbaceous, principally mountain, plants, to ſome of which it had been long ago applied; whilſt others had been referred to *Sedum*. They often occupy the fiſſures and broken edges of rocks; ſo far anſwering to the original idea of the name before us.—Linn. Gen. 223. Schreb. 301. Willd. Sp. Pl. v. 2. 638. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 448. Prodr Fl. Græc. Sibth. v. 1. 275. Ait. Hort. Kew. v. 3. 64. Purſh v. 1. 310. Juſſ. 309. Tourn. t. 129. Lamarck Illuſtr. t. 372. Gærtn. t. 36. (Geum; Tourn. t. 129)—Claſs and order, *Decandria Digynia*. Nat. Ord. *Succulentæ*, Linn *Saxifragæ*, Juſſ.

Gen. Ch. *Cal.* Perianth more or leſs completely inferior, of one leaf, in five deep, ſhortiſh, rather acute, permanent ſegments. *Cor.* Petals five, ſpreading, contracted at the baſe, often ſomewhat unequal. *Stam.* Filaments ten, awl-ſhaped; anthers roundiſh. *Piſt.* Germen roundiſh, pointed, with two beaks, ending in two ſhort ſpreading ſtyles; ſtigmas obtuſe. *Peric.* Capſule nearly ovate, membranous, of one cell, with two beaks, and opening at the top between them. *Seeds* numerous, minute.

Obſ. *Saxifraga* of Tournefort ſhould have the germen inferior, being ſurrounded, near the top, with the receptacle of the flower, or rim of the calyx, while *Geum* of the ſame author has a ſuperior germen, ſeated upon that part; but theſe preciſe limits are not always diſcoverable, there being ſeveral intermediate ſpecies, whoſe germen is half ſuperior.

Eſſ. Ch. Calyx five-cleft, permanent. Petals five. Capſule with two beaks, of one cell, burſting between the beaks. Seeds numerous.

The ſpecies of *Saxifraga* have proved nearly as puzzling to botaniſts as thoſe of *Roſa*, and there is ſtill as much diverſity of opinion about them. Linnæus defines 38 in his *Species Plantarum*, to which four are added in *Syſt. Veg.* ed. 14. Willdenow has 49. Practical alpine botaniſts, and eſpecially Picot Lapeyrouſe, in his Flore des Pyrenées, v. 1. have raiſed to the dignity of ſpecies, ſeveral ſuppoſed varieties of other authors, beſides deſcribing ſome that are indubitably new. We ſhall take a general view of the whole, correcting ſome miſtakes, and offering a few remarks. The genus is divided into four tolerably natural ſections.

Sect. 1. *Leaves undivided. Stem ſlightly leafy.*

S. *Cotyledon.* Pyramidal Saxifrage. Linn. Sp. Pl. 570. Fl. Lapp. ed. 2. 146. t. 2. f. 2. Willd. n. 1. Ait. n. 1. Fl. Dan. t. 241. (S. multiflora; Ehrh. Exſicc. 74. S. n. 977; Hall. Hiſt. v. 1. 419. Cotyledon pyramidale, lato crenato, et retuſo folio, polyanthos; Bocc. Muſ. 109. t. 86.)—Radical leaves aggregate, tongue-ſhaped, with ſharp cartilaginous ſerratures. Stem panicled, ſomewhat leafy. Calyx hairy and viſcid. Petals unſpotted.—Native of the Lapland and Swiſs mountains; common in a luxuriant ſtate in gardens, where it is a hardy perennial, much admired for its large pyramidal panicle of innumerable ſnow-white *flowers*, produced chiefly in the early part of ſummer. The *leaves* are dark green, rather fleſhy, ſmooth, forming denſe roſe-like tufts; their edges furniſhed with ſharp, imbricated, white, callous ſerratures. *Stem* five or ſix inches high in a wild ſtate; two or three feet when cultivated; reddiſh, hairy, bearing ſeveral alternate leaves; its flowering branches ſlender, purpliſh, hairy and viſcid, repeatedly ſubdivided. *Bracteas* linear. *Petals* obovate, three-ribbed, pure white, without any dots or ſtains.—Notwithſtanding the opinion of ſome botaniſts, the figure in Fl. Lapp. certainly belongs to this ſpecies.

S. *calloſa*. Callous Saxifrage. Sm. in Dickſ. Dr. Pl. 63. (S. lingulata; Bellardi Append. ad Fl. Pedem. 20. S. longifolia; Lapeyr. Pyren. v. 1. 26. t. 11. Sanicula montana crenata, folio longiore, pediculo folioſo; Pluk. Phyt. t. 222. f. 1. Aizoum ſerratum alterum; Cord. Hiſt. 92. Sedum ſerratum, longiore folio, marginibus argenteis; Moriſ. ſect. 12. t. 9. f. 20.)—Radical leaves aggregate, linear-oblong, with cartilaginous marginal warts. Stem panicled, ſomewhat leafy. Calyx naked and ſmooth. Petals unſpotted.—Found on the rocky mountains of Piedmont, towards the ſea, flowering in Auguſt. We have ſeen it in Mr. Roſcoe's garden at Allerton, near Liverpool, and elſewhere, but rarely in flower. Moſt botaniſts ſeem to have confounded this with the foregoing, yet nothing can be more diſtinct; eſpecially in the *leaves*, which are much narrower, more glaucous, and edged with a row of white callous warts, inſtead of being ſerrated. The *panicle* is neither hairy nor viſcid, the *calyx* being likewiſe perfectly ſmooth and naked. *Petals* of a leſs conſpicuous and brilliant white than in *S. Cotyledon*. Dr. Bellardi has well diſtinguiſhed this ſpecies, but his name appears to us leſs correct than the older one which we have retained; the *leaves* being much leſs lingulate than in the firſt ſpecies.

S. *Aizoon*. Marginated Saxifrage. Jacq. Auſtr. v. 5. 18. t. 438, excluding the reference to Linnæus. Willd. n. 2. Ait. n. 2. Dickſ. Dr. Pl. 64. (S. roſulenta; Ehrh. Exſicc. 5. S. ſedi folio anguſtiore ſerrato; Segu. Veron. v. 1. 448. t. 9. f. 1. Aizoum ſerratum; Cord. Hiſt. 92.)—Radical leaves aggregate, tongue-ſhaped, with ſharp cartilaginous ſerratures. Stem racemoſe, ſomewhat leafy. Calyx naked and ſmooth. Petals dotted.—Not unfrequent in alpine ſituations on the continent of Europe, nor is it rare in gardens, flowering in June and July, being perennial, like the laſt, and perfectly hardy. The whole plant is ſmaller than *S. calloſa*, being hardly a foot high, with much fewer *flowers*, rather racemoſe than panicled; the *petals* cream-coloured, with tawny or reddiſh dots, which, however, are ſaid by Jacquin to be occaſionally wanting. The ſerratures of the *leaves* are acute, imbricated, and each marked with a dot, or minute excavation, as in *S. Cotyledon;* but the *leaves* themſelves are very much ſmaller than in that ſpecies, from which the preſent is alſo clearly diſtinguiſhed by its ſmooth *calyx;* ſmaller, and differently coloured, *petals;* racemoſe *infloreſcence*, and very diſſimilar aſpect. The form of the ſerratures, as well as the broader and ſhorter figure of the *leaves*, to ſay nothing of the *petals* and *infloreſcence*, render this plant abundantly diſtinct from our *calloſa*. Perhaps *S. recta* of Lapeyrouſe, t. 15, ought to be added as a ſynonym. Linnæus confounded theſe three ſpecies together, nor has Willdenow diſtributed their ſynonyms properly. We have aimed only at a few certain ones, thoſe of the earlier writers being involved in much obſcurity. Haller perhaps included our *calloſa* under his n. 978, which is properly the preſent ſpecies.

S. *mutata*. Saffron-coloured Saxifrage. Linn. Sp. Pl. 570. Willd. n. 3. Ait. n. 3. Jacq. Ic. Rar. t. 466. Curt. Mag. t. 351. (S. n. 979; Hall. Hiſt. v. 1. 420. t. 16. f. 2.)—Radical leaves aggregate, tongue-ſhaped, with a cartilaginous, ſomewhat notched, fringed border. Stem panicled, leafy, hairy and viſcid like the calyx. Petals lanceolate.—Found on the alps of Carniola, Switzerland, and Italy; requiring ſome ſhelter with us in winter, and apparently very difficult of culture, being extremely rare. Mr. Curtis raiſed it from ſeeds ſent by Mr. Davall; but the late Mr. Blackburne appears to have cultivated this ſpecies in 1779. Its beauty is great, though not ſtriking at firſt ſight. In ſize the plant nearly approaches *S. Cotyledon;* but the *leaves* are not ſerrated, though denſely fringed; and the copious very remarkable *flowers* have narrow orange-coloured *petals; ſtamens* and *ſtyles* of the ſame hue, with a purple centre, or floral *receptacle*. Haller's figure is a better repreſentation of the wild plant, except the *petals*, than thoſe of Jacquin or Curtis.

S. *penſylvanica*. Pennſylvanian Saxifrage. Linn. Sp. Pl. 571. Willd. n. 4. Ait. n. 4. Purſh n. 10. (S. penſylvanica, floribus muſcoſis racemoſis; Dill. Elth. 337. t. 253. f. 328.)—Leaves elliptic-lanceolate, hairy, obſcurely notched. Stem leafleſs. Flower-ſtalks alternate, bearing corymboſe heads.—In wet meadows, from New York to Virginia, flowering in June. *Purſh*. Preſerved in curious botanic gardens only, the ſmall greeniſh tufted *flowers* having no pretenſions to beauty. The *ſtem* is from one to two feet high, with ſeveral large erect radical *leaves*, or five inches long.

To this are nearly akin *S. eroſa*, Purſh n. 11; and *S. hieracifolia*, Willd. n. 5. Waldſt. and Kitaib. Pl. Rar. Hungar. v. 1. 17. t. 18. The latter is cultivated in Kew garden, flowering in June. Its *leaves* are ſmooth, with a wavy, minutely fringed, edge. Nor is *S. androſacea*, Linn. Sp. Pl. 571. Willd. n. 6. Ait. n. 6. Jacq. Auſtr. t. 389, ſo widely different as, at firſt ſight, it appears. The *leaves*, though but an inch long, are more or leſs hairy, and though uſually entire, are ſometimes notched near the end. The *ſtem* indeed, about three inches high, bears but one or two *flowers*, five times the ſize of *S. penſylvanica*, with white *petals*.

S. *media*. Intermediate Saxifrage. Gouan Illuſtr. 27. Poiret in Lamarck's Dict. v. 6. 673. Illuſtr. t. 372. f. 6. Sm. Fl. Græc. Sibth. t. 376, unpubliſhed. (S. cæſia; Linn. Mant. 382, but not Sp. Pl. 571. S. calyciflora; Lapeyr. Pyren. v. 1. 28. t. 12.)—Radical leaves aggregate, tongue-ſhaped; with a cartilaginous entire margin; dotted on the upper ſide. Petals obtuſe, ſhorter than the calyx.—This rare and beautiful ſpecies is ſaid to grow on limeſtone rocks among the Pyrenean mountains. Dr. Sibthorp met with it on the ſummit of the Bithynian Olympus. The perennial *roots* bear numerous denſe roſe-like tufts, of ſmooth, glaucous, fleſhy, obovate or tongue-ſhaped, *leaves*, half an inch or more in length, remarkable for a row of depreſſed dots, each accompanied by a callous deciduous ſcale, near the cartilaginous entire margin. The *ſtems* are ſimple, four or five inches high, racemoſe, purpliſh, hairy, viſcid, clothed with alternate hairy *leaves*, ſmaller than the radical ones, and tinged with purple. *Flowers* axillary, ſolitary, nearly ſeſſile, from all the leaves of the upper half of the ſtem, and forming a denſe, hairy, dark purple, bracteated, often drooping, cluſter or ſpike. *Calyx* inferior, hairy, of a deep blood-colour, its ſegments converging, ſo as nearly to conceal the dull crimſon obovate *petals*. *Anthers* brown. *Germen* and *ſtyles* red. Willdenow has overlooked this *Saxifraga*, which has not as yet found its way into our gardens.

S. *cæſia*. Grey Saxifrage. Linn. Sp. Pl. 571. Willd. n. 7. Ait. n. 7. Jacq. Auſtr. t. 374. Scop. Carn.

v. 1. 295. t. 15. (S. n. 982; Hall. Hiſt. v. 1. 421. S. alpina minima, foliis cæſius deorſùm recurvis; Segu. Veron. v. 1. 449. t. 9. f. 2. Sedum alpinum tertium Cluſii; Ger. Em. 516. Sedi aut phylli ſpecies minima alpina; Geſn. Faſc. 24. t. 11. f. 30.)—Radical leaves aggregate, ſpatulate, recurved, imbricated downwards; fringed at the baſe; dotted on the upper ſide. Petals thrice as long as the calyx.—Native of the alps of Germany, Switzerland, and Italy, often found near the limits of perpetual ſnow, flowering in July and Auguſt. *Roots* perennial, long, much branched, crowned with numerous, denſe, almoſt globular, tufts of glaucous *leaves*, not a quarter the ſize of the laſt, and though dotted in a ſimilar manner, differing eſſentially in their recurved gibbous form, and imbricated poſition. The *ſtems* are ſlender, two or three inches high, moſtly reddiſh, hairy and viſcid, bearing a few ſmall, ſcattered, linear, recurved leaves, and terminating in from one to four white *flowers*, with rather large obovate *petals*. The ſimilar dots on the radical *leaves* cauſed Linnæus to confound this with the laſt, but they have ſcarcely any other character in common. The remark in his *Mantiſſa* 382, concerning an Italian variety of *cæſia*, and copied by Willdenow under this ſpecies, belongs to the *media*. We can hardly account for the expreſſion of *caule multifloro* in the Linnæan character of *cæſia*.

S. *diapenſoides*. Diapenſia-leaved Saxifrage. Bellardi Append. ad Fl. Pedem. 20. t. 3.—Radical leaves aggregate, imbricated upwards, keeled, abrupt, ſomewhat fringed, without dots. Stem hairy, with few flowers.—Native of the fiſſures of rocks on the moſt lofty alps of Piedmont. We have a ſpecimen from Dr. Bellardi himſelf, which has much of the habit of *cæſia*, but the *leaves* are not recurved, nor dotted; and if fringed at all, it is about their blunt abrupt extremities. The *ſtem* and its *leaves* are very hairy and glutinous. *Flowers* varying from one to four, uſually three, white, larger than the laſt, from which we believe this plant perfectly diſtinct, being rather more akin to the following.

S. *burſeriana*. Burſer's Saxifrage. Linn. Sp. Pl. 572. Willd. n. 8. Wulf. in Jacq. Miſc. v. 1. 152. t. 17. f. 3. (S. alpina, foliis glaucis acutis, monanthos, caule folioſo; Segu. Veron. v. 3. 201. t. 5. f. 2.)—Radical leaves aggregate, awl-ſhaped, acute, triangular, ſmooth. Stem hairy, ſingle-flowered.—Native of the alps of Carinthia and the north of Italy. Larger than the laſt, with ſmooth pointed *leaves*, and very large white ſolitary *flowers*, whoſe *calyx*, like the *ſtem* and its *leaves*, is reddiſh and hairy, as in the preceding. Such is the plant of Burſer, Jacquin, and Seguier; conſequently of Linnæus in his *Sp. Pl.*; though no ſpecimen anſwering to this deſcription exiſts in his herbarium. What is there preſerved, ſent by Vandelli, and mentioned in Willdenow (after Linn. Syſt. Nat. ed. 12. v. 2. 303), has thicker *leaves*, and a corymboſe *ſtem*, with ſeven *flowers*, rather ſmaller than in the kind with a ſolitary *flower*. Its *ſtem*, *calyx*, &c. are equally reddiſh, hairy, and viſcid. This is Haller's *S. foliis craſſis pungentibus, caule viſcido paucifloro*, Act. Helvet. v. 6. 10. n. 39; and is conſidered by Jacquin and Vandelli, with apparent juſtice, as a diſtinct ſpecies.

S. *bryoides*. Thread-moſs Saxifrage. Linn. Sp. Pl. 572. Willd. n. 11. Ait. n. 66. Scop. Carn. v. 1. 295. t. 15. Jacq. Miſc. v. 2. 49. t. 5. f. 1. (S. n. 969; Hall. Hiſt. v. 1. 416.)—Radical leaves aggregate, lanceolate, pointed, ſmooth, with a cartilaginous fringed margin. Stem with few flowers. Calyx obtuſe, nearly ſmooth.—Frequent on the alps of Germany, Switzerland, and Italy; ſometimes preſerved in curious gardens. It is allied to the two laſt, but the *ſtems* are almoſt entirely ſmooth, bearing ſeveral fringed, obtuſe, green, ſmooth and ſhining *leaves*, and uſually one *flower*, occaſionally two or three. The *calyx* is a little hairy at the baſe. *Petals* white, dotted in their lower half with yellow. *Germen* entirely ſuperior.

We now come to a ſomewhat different tribe, with more dilated *leaves*; for the moſt part beautifully ſpotted and parti-coloured *petals*; and generally a ſuperior *germen*; compriſing Tournefort's genus of *Geum*. Several of them are of Britiſh or Iriſh growth.

S. *ſtellaris*. Starry Saxifrage. Linn. Sp. Pl. 572. Willd. n. 13. Ait. n. 9. Fl. Brit. n. 1. Engl. Bot. t. 167. Fl. Dan. t. 23. Jacq. Coll. v. 1. 202. t. 13. Scop. Carn. v. 1. 292. t. 13. Purſh n. 2. (S. n. 973; Hall. Hiſt. v. 1. 418.)—Leaves ſerrated. Stem naked, branched. Petals pointed. Capſule entirely ſuperior. Calyx reflexed.—Frequent throughout Europe, about the borders of alpine rivulets, in ſhady ſituations; and found alſo in Labrador and Canada. Abundant on the mountains of Wales, Scotland, and Weſtmoreland, in a black boggy ſoil, flowering in June and July. The perennial *roots* bear ſeveral lax roſaceous tufts of obovate, green, pliant, rather fleſhy and ſlightly hairy *leaves*, with a few broad and diſtant ſerratures, but no cartilaginous edge. *Flower-ſtems* from three to ſix inches high, panicled, more or leſs hairy, naked, except a few ſimple or divided *bracteas*. *Flowers* ſolitary at the end of each branch. *Petals* ovate with a ſhort claw, white, except two yellow ſpots near the baſe. *Germen* violet. *Capſule* green, with a purple ring.

S. *craſſifolia*. Thick-leaved Saxifrage. Linn. Sp. Pl. 573. Willd. n. 14. Ait. n. 10. Linn. fil. Dec. 2. 27. t. 14. Curt. Mag. t. 196. (S. n. 78; Gmel. Sib. v. 4. 166. t. 66.)—Leaves coriaceous, roundiſh-oval, abrupt, ſtalked, ſerrated, ſmooth. Stem naked. Panicle denſe, cymoſe.—Native of the mountains of Siberia. A very common hardy perennial in our gardens, into which Dr. Solander is ſaid to have introduced it in 1765. The great ſize of every part, particularly the broad ſhining coriaceous *leaves*, diſtinguiſh this plant from its congeners. The very copious light purple *flowers*, whoſe parts or diviſions are often greatly multiplied, make a handſome appearance in March and April.

The Hortus Kewenſis, on the authority of Mr. Haworth, diſtinguiſhes as a ſpecies, by the name of *cordifolia*, what we have always conſidered as a variety with leaves heart-ſhaped at the baſe.

S. *nivalis*. Cluſtered Alpine Saxifrage. Linn. Sp. Pl. 573. Willd. n. 15. Ait. n. 12. Fl. Brit. n. 2. Engl. Bot. t. 440. Fl. Dan. t. 28. Lightf. Scot. 221. t. 12. Purſh n. 6. (S. foliis oblongo-rotundis dentatis, floribus compactis; Raii Syn. 354. t. 16. f. 1.)—Leaves obovate, ſerrated. Stem naked. Flowers crowded. Capſule half inferior. Calyx ſpreading.—Native of the alps of Lapland, Greenland, Scotland, and Wales, growing in the moiſt and ſhady clefts of rocks, flowering in July. Mr. Dickſon has received it from Labrador and Canada, and we have a Pennſylvanian ſpecimen from the Rev. Dr. Muhlenberg. This is moſt allied to *S. ſtellaris*, next to which it ought to ſtand; but the broader, thicker, more copiouſly ſerrated *leaves*; denſe tuft of *flowers*; and eſpecially the ſpreading half-ſuperior *calyx*; afford clear marks of diſtinction. The *petals* are white, with two green ſpots, and a green tip; their outſide often purpliſh.

S. *ſarmentoſa*. Chineſe Saxifrage. Linn. Suppl. 240. Willd. n. 18. Ait. n. 13. Curt. Mag. t. 92. Ehrh. Exſicc. 25. Thunb. Jap. 182. (S. ſtolonifera; Jacq. Miſc. v. 2. 327. Ic. Rar. t. 80. Meerb. Ic. t. 23. Sekika, vulgò Kiſinſo; Kæmpf. Amoen. 870.)—Leaves

roundiſh, toothed, hairy. Scyons creeping. Two of the petals elongated.—This elegant and ſingular ſpecies, a native of China and Japan, is very hardy in European gardens, thriving in ſhady places, or running over rock-work, and flowering about June and July. The trailing ſhoots ſpread like thoſe of a ſtrawberry plant, and as widely, taking root, and producing young offsets here and there. The *leaves* are ſmooth above, variegated with ſhades of green; red and hairy beneath, like the *footſtalks*. *Stem* a foot or more in height, leafleſs, panicled, many-flowered, more or leſs hairy. *Calyx* half inferior, nearly ſmooth. Three of the *petals* are ovate, pink, with red ſpots; while the other two, at the lower ſide of the *flower*, are lanceolate, thrice as long, white and unſpotted. On the contrary ſide to theſe longer *petals*, is an orange-coloured glandular *nectary*. The irregularity of the *flower* has induced ſeveral botaniſts to think this ſpecies ought to conſtitute a diſtinct genus, and Linnæus was once evidently of the ſame opinion, his own ſpecimen being marked *Rupifraga ſerpens*. Mr. Purſh would add to the genus in queſtion the *S. leucanthemifolia* of Michaux, whoſe petals are likewiſe unequal; but that plant has not come under our obſervation.

S. *punctata*. Dotted-flowered Saxifrage. Linn. Sp. Pl. 574. Willd. n. 19. Ait. n. 14. (Sedum bicorne ſerratum, pallidiore folio rotundiore, floribus punctatis; Moriſ. v. 3. 478. ſect. 12. t. 9. f. 17.)—Leaves roundiſh, broadly toothed, with long footſtalks. Stem panicled, leafleſs, with linear bracteas. Calyx erect. Germen partly inferior.—Gathered by Gmelin in Siberia. Moriſon ſpeaks of his plant as common in gardens, yet we ſcarcely recollect to have ſeen the true *punctata* in any collection. Gmelin's ſpecimen has ſeveral radical *leaves*, of a roundiſh form, an inch wide, veiny, minutely hairy, of a light graſs green, with broad, deep, callous-pointed teeth, or ſerratures, but deſtitute of any cartilaginous edge; the baſe tapering down into a *footſtalk*, which is three or four times as long as the leaf, and bordered at the baſe with a ſtipulaceous membrane. *Stem* a foot high, ſtriated; leafleſs below; panicled and ſomewhat corymboſe above, with numerous, very ſmall *flowers*, on hairy *ſtalks*, with ſmall entire *bracteas*. *Calyx* embracing about one-fourth of the germen, its ſegments erect, or ſomewhat ſpreading, broad, ſhort and obtuſe. Of the *petals* we cannot judge. The *germen* is ovate, much longer than the calyx.

S. *leucanthemifolia*. Ox-eye-leaved Saxifrage. Lapeyr. Pyren. v. 1. t. 25. (S. Cluſii; Gouan Illuſtr. 28, excluding the ſynonym of Cluſius. Saniculæ alpinæ aliquatenùs affinis; Bauh. Hiſt. v. 3. 708.)—Leaves oblong, broadly toothed; wedge-ſhaped and entire at the baſe, with bordered footſtalks. Stem panicled, leafy, with lanceolate bracteas. Calyx reflexed. Germen entirely ſuperior.—Found on the borders of mountain rivulets, in the ſouth of France and north of Italy. This is nearly akin to the laſt, but beſides the eſſential differences indicated in the above character, the *leaves* are more hairy; the *flowers* larger, with white unſpotted *petals*; and the *panicle* is accompanied at its primary diviſions with deeply-toothed *leaves*. Bauhin's figure and deſcription, cited by Gouan, anſwer well to our plant.

S. *umbroſa*. London pride, or None-ſo-pretty. Linn. Sp. Pl. 574. Willd. n. 20. Ait. n. 15. Fl. Brit. n. 3. Engl. Bot. t. 663. (Geum folio ſubrotundo minori, piſtillis floris rubro; Magn. Hort. 88. t. 14.)—Leaves obovate, bluntiſh, with a cartilaginous notched margin; tapering at the baſe. Stem naked, panicled. Calyx reflexed, inferior.—Found by Tournefort on hills in the weſtern part of Spain. It grows on ſeveral of the Iriſh mountains, as well as in Yorkſhire, and is one of the moſt popular of our garden flowers, thriving amid the London ſmoke, and flowering from April to June. The *leaves* form large roſe-like tufts, and are more rigid and coriaceous than in the two laſt-deſcribed ſpecies, as well as quite ſmooth; often purple beneath; their edges white and horny, bluntly ſerrated; the baſe tapering, in a wedge-like ſhape, into the flat footſtalk, which varies in length. *Stem* from nine to eighteen inches high, erect, panicled, red and hairy, with a few ſmall ſcattered entire *bracteas*. *Flowers* numerous, erect, without ſcent. *Calyx* reddiſh. *Petals* obtuſe, white or fleſh-coloured, beautifully ſpotted with yellow near the baſe, and dark red towards the extremity. *Germen* deep red, entirely ſuperior. *Capſule* purpliſh.

S. *hirſuta*. Hairy Oval-leaved Saxifrage. Linn. Sp. Pl. 574. Willd. n. 21. Ait. n. 16. Lapeyr. Pyren. v. 1. 45. t. 23. Engl. Bot. t. 2322.—Leaves oval, ſomewhat heart-ſhaped, abrupt, with a cartilaginous notched margin. Stem naked, panicled. Calyx reflexed, inferior.—Native of the Pyrenées, as well as of the mountains of Ireland, in which laſt country it was diſcovered by Mr. I. T. Mackay. This is an intermediate ſpecies between *umbroſa* and *Geum*; poſſibly a variety of one or the other. The hairineſs of the *ſtem*, which gave riſe to the name, is variable. The *flowers* moſt reſemble the laſt deſcribed; but the *leaves* differ in their rounder figure, and in being heart-ſhaped, not decurrent nor wedge-ſhaped, at the baſe, with ſmaller blunter notches. Their *footſtalks* are hairy. Magnol's plate, cited by Linnæus, is ſaid by Lapeyrouſe to be, in its general aſpect, good, but in the details incorrect. To us it ſeems rather to repreſent the following, to which we venture therefore to transfer the ſynonym in queſtion.

S. *Geum*. Kidney-leaved Saxifrage. Linn. Sp. Pl. 574. Willd. n. 23. Ait. n. 18. Lapeyr. Pyren. v. 1. 46. t. 24. Engl. Bot. t. 1561. (Geum folio circinnato, acutè crenato, piſtillo floris rubro; Magn. Hort. 87. t. 13. Sedum montanum rotundifolium minus album, non guttatum; Moriſ. v. 3. 478. Sanicula montana minor; Cluſ. Pann. 441.)—Leaves roundiſh-kidney-ſhaped, ſharply toothed. Stem naked, panicled. Calyx reflexed, inferior.—Native of the Hungarian, Pyrenæan and Iriſh mountains. Mr. Mackay found it in the county of Kerry. This differs from the laſt in its ſhorter, more kidney-ſhaped *leaves*, whoſe edges are leſs preceptibly cartilaginous. The *petals* are white, with one yellow ſpot only, and a purpliſh claw. We have ſome Iriſh ſpecimens, the teeth of whoſe *leaves* are broad and abrupt, more like the figure of Lapeyrouſe than that of Magnol, or Engl. Bot. The *petals* moreover have each two red ſpots, beſides the yellow ſtain. Can this be a diſtinct ſpecies, or only an intermediate variety, or mule? All the three laſt deſcribed are very nearly akin, and yet appear to have ſufficient marks of difference; but their ſeeming varieties are extremely puzzling.

S. *cuneifolia*. Wedge-leaved Saxifrage. Linn. Sp. Pl. 574. Willd. n. 22. Ait. n. 17. Waldſt. and Kitaib. Hung. v. 1. 43. t. 44. (S. n. 974; Hall. Hiſt. v. 1. 418. Cotyledon altera olim Matthiolo; Bauh. Hiſt. v. 3. 684. Cotyledonis aut Sedi ſpecies quædam; Geſn. Faſc. 29. t. 12. f. 37.)—Leaves wedge-ſhaped, very obtuſe, with wavy teeth. Stem naked, panicled. Calyx inferior, reflexed after flowering.—Native of the alps of Styria and Switzerland. Sent to Kew in 1768 by M. de Sauſſure. This is nearly allied to the three laſt, but in all its parts about half the ſize, and ſcarcely at all hairy, except the *flowerſtalks*. The *leaves* are quite ſmooth and even; often purple underneath. *Panicle* ſlender, of but few *flowers*. *Petals* white, and as far as we can diſcover, deſtitute of ſpots.

Calyx at firſt ſpreading, but reflexed as the flower begins to fade.

Sect. 2. *Leaves undivided. Stem entirely leafy.*

S. *oppoſitifolia.* Purple Saxifrage. Linn. Sp. Pl. 575. Fl. Lapp. ed. 2. 148. t. 2. f. 1. Willd. n. 24. Ait. n. 19. Fl. Brit. n. 4. Engl. Bot. t. 9. Curt. Lond. faſc. 6. t. 27. Fl. Dan. t. 34. (S. n. 980 ; Hall. Hiſt. v. 1. 420. Sedulis alpinis cognata ; ut et Herniaria petræa ; Geſn. Faſc. 26. t. 9. f. 32, 33.)—Leaves oppoſite, ovate, obtuſe, fleſhy, fringed ; the lower ones imbricated, keeled and abrupt. Germen half inferior.—Native of rocky alpine precipices throughout Europe, flowering in the ſpring. Frequent in gardens, where, if cultivated in pots and ſheltered in a frame in winter, it makes a beautiful appearance with its copious purple bloſſoms, in March and April. The *ſtems* are branched, proſtrate and entangled, compoſing denſe, leafy, evergreen tufts, very variable in luxuriance. *Leaves* alſo very variable ; the lower ones ſhort and abrupt, marked at the end with one depreſſed point, like thoſe of *S. cæſia ;* thoſe of the flowering branches larger, flatter, and more diſtant. *Flowers* larger than the leaves, terminal, moſtly ſolitary. *Petals* of a purpliſh crimſon, unſpotted.

The *retuſa* of Gouan's Obſ. t. 18. f. 1. Lapeyr. Pyren. v. 1. 38. t. 18 ; figured alſo in Petiver's Gazophylacium, t. 65. f. 14 ; appears from an examination of many ſpecimens, to be but a more ſtarved or condenſed ſtate of *S. purpurea ;* while the *biflora* of Allioni, Lapeyr. Pyren. v. 1. 37. t. 17, is a more luxuriant and dilated form of the ſame plant, in conſequence of a more favourable ſoil and climate. This laſt is Haller's n. 981, and we muſt allow its firſt appearance to be very different from our ordinary *purpurea.*

S. *aſpera.* Rough Saxifrage. Linn. Sp. Pl. 575. Willd. n. 25. Ait. n. 20. Jacq. Auſtr. v. 5. 44. append. t. 31. (Sedum alpinum foliis crenatis aſperis ; Geſn. Faſc. 22. t. 6. f. 27.)—Leaves lanceolate, alternate, fringed. Stems procumbent. Germen ſuperior.—A common plant on the loftieſt alps of Europe, but not of Britiſh growth. The *ſtems* form tufts, as in the preceding ; but the *leaves* are alternate, long, acute, almoſt linear, and the *flowers* cream-coloured, ſomewhat panicled, on long ſlender ſtalks.

S. *Hirculus.* Yellow Marſh Saxifrage. Linn. Sp. Pl. 576. Willd. n. 26. Ait. n. 21. Fl. Brit. n. 5. Engl. Bot. t. 1009. Curt. Lond. faſc. 6. t. 26. Fl. Dan. t. 200. (S. n. 972 ; Hall. Hiſt. v. 1. 417. t. 11. Chamæciſtus friſicus ; Ger. Em. 1284. Hirculus friſicus ; Cluſ. Cur. Poſt. 5, 6.)—Leaves lanceolate, alternate, without teeth or fringe. Stem erect. Germen ovate, ſuperior.—Native of turfy bogs in Lapland, Siberia, Germany, Switzerland, and England. It has long been known on Knutsford moor, Cheſhire, and has lately been diſcovered, by Mr. John Binks, on Cotherſtone fell, near the junction of the Blackbeck with the Baulder, Yorkſhire. It flowers in Auguſt, and is a handſome as well as peculiar ſpecies. The *roots* creep by means of leafy ſcyons. The *ſtems* are from ſix to twelve inches high, ſimple, erect. *Leaves* an inch or more in length, tapering into a footſtalk, obtuſe, ſmooth, except an occaſional ruſty ſhaggineſs on ſome of the uppermoſt, at the back. *Flowers* one, two, or three at the ſhaggy top of the ſtem, large and ſhowy. *Calyx* reflexed. *Petals* elliptical, ribbed, of a full yellow, beautifully dotted with red in their lower half, and furniſhed with two remarkable protuberances juſt above the baſe. *Stamens* yellow, ſlender. *Germen* green. It is ſtrange that this and the following ſhould ever have been confounded.

S. *aizoides.* Yellow Mountain Saxifrage. Linn. Sp. Pl. 576. Willd. n. 27. Ait. n. 22. Fl. Brit. n. 6. Engl. Bot. t. 39. (S. autumnalis ; Willd. n. 28. Fl. Dan. t. 72. Scop. Carn. v. 1. 293. t. 14. S. n. 971 ; Hall. Hiſt. v. 1. 417. Sedum alpinum primum Cluſii ; Ger. Em. 516.)—Leaves alternate, linear, with fringe-like teeth. Stem decumbent at the baſe. Germen depreſſed, half inferior.—Native of lofty mountains throughout Europe, in wet boggy ſpots, flowering all ſummer long. Few plants vary more in ſize and luxuriance ; and, like all theſe alpine *Saxifragæ,* the *leaves* are very variable in ſize and compactneſs, being often deprived of their uſual rigid fringe. Hence authors have made two ſpecies. Several *flowers* terminate each branch, and are very handſome, of a more or leſs deep yellow, dotted with crimſon. The depreſſed half-inferior *germen,* often red at the top, clearly diſtinguiſhes this, in its eſſential character, from *S. Hirculus,* to which indeed the whole plant has but little reſemblance.

S. *rotundifolia.* Round-leaved Spotted Saxifrage. Linn. Sp. Pl. 576. Willd. n. 29. Ait. n. 23. Curt. Mag. t. 424. Lapeyr. Pyren. v. 1. 50. t. 26. Sm. Fl. Græc. Sibth. t. 377, unpubliſhed. (S. n. 975 ; Hall. Hiſt. v. 1. 418. Sanicula alpina ; Geſn. Faſc. 19. t. 10. f. 25. Camer. Epit. 764. S. guttata ; Ger. Em. 788.)—Radical and ſtem-leaves kidney-ſhaped, toothed, ſtalked. Stem panicled. Calyx inferior, ſpreading. Found on the alps of Auſtria, Switzerland, Savoy, Crete and Greece, chiefly in ſhady ſituations. It has been cultivated in our gardens from the time of Gerarde, and flowers abundantly in May. The *roots* are fibrous and perennial. *Stem* a foot or more in height, erect, leafy, unbranched, except at the top, where it forms a large hairy panicle of moſt elegant *flowers,* whoſe white *petals* are copiouſly dotted with crimſon. Their *calyx,* though altogether inferior, is never reflexed at any ſtage of growth. The *leaves* grow on long hairy ſtalks, and reſemble thoſe of *S. Geum* and its allies, to which this ſpecies, except in having a leafy *ſtem,* is moſt nearly related.

Sect. 3. *Leaves lobed. Flowering-ſtems erect.*

S. *granulata.* White, or Granulated, Meadow Saxifrage. Linn. Sp. Pl. 576. Willd. n. 30. Ait. n. 25. Fl. Brit. n. 7. Engl. Bot. t. 500. Curt. Lond. faſc. 1. t. 30. Woodv. Suppl. t. 232. Fl. Dan. t. 514 (S. alba ; Ger. Em. 841. S. quarta ; Camer. Epit. 719.)—Leaves kidney-ſhaped, lobed. Stem panicled. Root granulated. Germen half-inferior. This ſpecies inhabits dry gravelly paſtures and meadows, ſometimes moiſt ſituations, or ſhady banks, in moſt parts of Europe. In England it is not a general plant, though frequent in Norfolk and other gravelly counties, but not in the mountainous or micaceous tracts. The little granular knobs of the perennial *root* have, on account of their ſhape, been fooliſhly ſuppoſed good for the gravel or ſtone. The *ſtems* are a foot high ; ſimple below. *Herbage* downy, or rather hairy. *Flowers* looſely panicled, large, white, and, as in all of this ſection, unſpotted. *Calyx* brown or reddiſh, hairy and viſcid. The radical *leaves* have long ſtalks. A variety with double *flowers* is common in gardens, making an elegant appearance in May.

S. *bulbifera.* Bulbous Meadow Saxifrage. Linn. Sp. Pl. 577. Willd. n. 31. (Saxifragia bulboſa altera bulbifera montana ; Column. Ecphr. 318. t. 317. Sedum rotundifolium erectum ſoboliferum ; Moriſ. ſect. 12. t. 9. f. 24.)—Leaves roundiſh-kidney-ſhaped, lobed. Flowers cymoſe. Germen half-inferior. Stem bearing axillary bulbs.—Native of ſhady, ſtony paſtures, among the mountains of Italy and Switzerland, flowering in April and May. Seguier, Haller, and by their perſuaſion Linnæus, have conſidered this as a variety of the laſt ; while Gunner has miſtaken for it a ſlight variety of *S. cernua,* figured in Fl. Dan. t. 390, taking from Linnæus the character of *germen inferior,* which however exiſts not in this variety, any more than in *cernua* itſelf. *S. bulbifera* is truly diſtinct from *granulata*, which it moſt reſembles, in the *root* being an aſſemblage of ſmall, erect, crowded, oval knobs, not of round ones connected by a fibre; but eſpecially in the cymoſe *infloreſcence*, which, like the *ſtem*, is beſet with bulbs or knobs. The whole plant too is more hairy, and the *flowers* not half ſo large. It is a ſtranger in the Engliſh gardens. Moriſon's figure is copied from the excellent one of Columna. The *germen* is rather more inferior in this ſpecies than in the *granulata*.

S. *cernua*. Drooping Bulbous Saxifrage. Linn. Sp. Pl. 577. Fl. Lapp. ed. 2. 140. t. 2. f. 4. Willd. n. 32. Ait. n. 25. Fl. Brit. n. 8. Engl. Bot. t. 664. Fl. Dan. t. 22, and t. 390.—Leaves palmate, ſtalked. Stem with aggregate axillary bulbs. Germen ſuperior. Petals blunt.—Native of alpine rills in Lapland, more rarely in Scotland. Mr. Dickſon diſcovered this plant on the ſummit of Ben Lawers, flowering in July. Mr. W. Hooker found it, though not abundantly, in Iceland. It is much ſmaller and more delicate than either of the laſt-deſcribed, as well as nearly ſmooth. The *ſtem* and *bulbs* are purple. *Flower* terminal, white, ſolitary, moſtly drooping. Sometimes the *ſtem* has a few alternate branches, tipped with granular bulbs. We are now ſatisfied that both the above plates of *Fl. Dan.* repreſent one ſpecies.

S. *rivularis*. Alpine Brook Saxifrage. Linn. Sp. Pl. 577. Fl. Lapp. ed. 2. 142. t. 2. f. 7. Willd. n. 33. Ait. n. 26. Fl. Brit. n. 9. Engl. Bot. t. 2275. Fl. Dan. t. 118. Purſh n. 15.—Leaves palmate, ſtalked; the uppermoſt ſpatulate. Stem with few flowers. Root fibrous. Germen half-inferior.—Native of mountain rills in Lapland, Labrador, and the Highlands of Scotland, flowering in June and July. The fibrous, partly creeping, *root*; ſmaller ſize, and perfect ſmoothneſs, of the *herb*; and half-inferior *germen*; diſtinguiſh this from the laſt. The *petals* too are much ſmaller in compariſon with the ſegments of the *calyx*.

S. *ſibirica*. Siberian Saxifrage. Linn. Sp. Pl. 577. Willd. n. 36.—Leaves kidney-ſhaped, palmate, hairy. Stem and flower-ſtalks capillary. Root fibrous. Germen ſuperior.—Native of Siberia. This has the habit of *S. cernua*, but the *leaves* are more deeply divided and very hairy, nor is there any appearance of bulbs. The *flowers* are few, large, white, rather drooping, ſolitary at the ends of the capillary ſtalks, and the *petals* are ovate, not, as in *cernua*, obovate with taper claws. Fl. Dan. t. 22. exactly repreſents the petals of *S. ſibirica*, yet we cannot ſuppoſe it to have been drawn from this ſpecies.

S. *geranioides*. Crane's-bill-leaved Saxifrage. Linn. Sp. Pl. 578. Willd. n. 34. Ait. n. 27. Lapeyr. Pyren. v. 1. 66. t. 43. Gouan. Obſ. 28. t. 18. f. 2, from the author. — Radical leaves kidney-ſhaped, five-lobed, ſubdivided; ſtem-leaves digitate, with linear ſegments. Stem corymboſe, many-flowered. Calyx hairy; its ſegments linear-lanceolate, ſuperior.—Native of the Pyrenees; kept in ſome curious gardens, as a hardy perennial, without difficulty, flowering in the ſpring. The *leaves* are numerous on the ſpreading lower *branches*. Flowering *ſtems* erect, almoſt leafleſs, bearing numerous whitiſh *flowers* in compound corymboſe *panicles*, with remarkably elongated *petals* and *calyx*. *S. pedemontana*, Allion. Pedem. v. 2. 73. t. 21. f. 5, 6, communicated to us by the author himſelf, appears to be a variety of *geranioides*, whoſe *leaves* are more elongated into a wedge-like form at the baſe, and their ſegments uſually leſs compound and divaricated. Poſſibly *S. pedatifida*, Ehrh. Exſicc. n. 15. Sm. Tr. of Linn. Soc. v. 10. 340. Engl. Bot. t. 2278. Ait. n. 29; which is *quinquefida* of Don's Cambridge Catalogue; may be, on the other hand, a more divided-leaved variety of the ſame ſpecies.

S. *trifurcata*. Shining-calyxed Saxifrage. Schrad. Hort. Gotting. 13. t. 7. (S. ceratophylla; Sims in Curt. Mag. t. 1651. Ait. n. 28.) — Smooth. Leaves three-lobed, channelled, acute; the ſegments of the radical ones three-cleft, falcate. Stem panicled. Calyx varniſhed.—Native of Spain. Introduced into England in 1804. It flowers in May and June, and requires the ſhelter of a frame in winter. The *leaves* have a peculiarly rigid ſmooth aſpect. *Flowers* white; their *calyx* ſuperior, as in all this tribe.

S. *ajugifolia*. Bugle-leaved Saxifrage. Linn. Sp. Pl. 578. Willd. n. 55. Ait. n. 30. Lapeyr. Pyren. v. 1. 56. t. 31.—Leaves ſomewhat palmate, with three or five flat, linear, obtuſe, roughiſh ſegments; the floral ones undivided. Stem aſcending, panicled. Calyx downy and viſcid.—Native of the Alps and Pyrenees, in lofty ſituations. The very narrow blunt ſegments of the copious *leaves*, which clothe the numerous, tufted, radical branches, diſtinguiſh this from all the preceding. The *flowers* are ſmall, cream-coloured or greeniſh, ſometimes tinged with purple. *Calyx* hairy and viſcid, the ſegments of a much ſhorter and broader proportion than in *S. geranioides*. Few botaniſts have been well acquainted with this ſpecies, the Swiſs and Italians having generally taken it for *hypnoides*. Lapeyrouſe's *ladanifera*, t. 42, is ſurely no more than a variety. The name *ajugifolia* ſeems to refer to *Ajuga-Chamæpitys* of Fl. Brit. Though Linnæus erroneouſly made that plant a *Teucrium*, Camerarius had called it *Ajuga*. *S. intricata*, Lapeyr. Pyren. t. 33; and one ſent by Dr. Bellardi under the name of *elongata*, are very nearly allied to *ajugifolia*, though we dare not, from the examination of dried ſpecimens alone, ſay they are the ſame.

S. *tridactylites*. Rue-leaved Saxifrage. Linn. Sp. Pl. 578. Willd. n. 38. Ait. n. 32. Fl. Brit. n. 10. Engl. Bot. t. 501. Curt. Lond. faſc. 2. t. 28. (Paronychia rutaceo folio; Ger. Em. 624.) — Leaves wedge-ſhaped, with three or five ſegments; the uppermoſt undivided. Stem panicled. Calyx ſuperior, one-fourth as long as the germen.—Common on walls, ſandy ground, and ſometimes on alpine rocks, throughout Europe, flowering in the early ſpring. The *root* is ſmall and annual, a very unuſual circumſtance in this genus. *Herb* downy, viſcid, reddiſh, varying much in luxuriance, but the whole *ſtem* is more or leſs copiouſly panicled, from one to ſix inches high. *Flowers* ſmall, white, with a large, urn-ſhaped, downy, inferior *germen*, and minute *calyx*.

S. *petræa*. Buſhy Rock Saxifrage. Linn. Sp. Pl. 578. Wulf. in Jacq. Coll. v. 1. 200. Jacq. Ic. Rar. t. 81. (Saſſifragia bianca petrea; Pon. Bald. 183. Segu. Veron. v. 1. 447. Cluſ. Hiſt. v. 2. 337. Sedum tridactylites alpinum majus album; Bauh. Pin. 284. Moriſ. ſect. 12. t. 9. f. 28. Sanicula alpina; Pluk. Phyt. t. 222. f. 3.)—Leaves palmate, in three deep, jagged, ſomewhat three-cleft, lobes. Stem lax, much branched and leafy throughout. Calyx ſuperior, with ovate ſegments. Petals emarginate. Stalks elongated, ſingle-flowered. — Found by Pona and Seguier, flowering in June and July, on the precipices of mount Baldus; and by Wulfen in a rocky foreſt, near Haaſberg, in Carinthia. It is one of the rareſt of its genus, as well as the leaſt underſtood, Linnæus having aſſiſted in embroiling its hiſtory; and all other writers, except Wulfen and Seguier, having confounded it with other plants. Willdenow's enumeration of ſynonyms is, above all others, faulty; nor do we know whether this ſpecies is entitled to a place in Mr. Aiton's work, but we rather believe not. Linnæus has, in the firſt place, erred in taking for Pona's plant, before he had ſeen the true one, a mere luxuriant Lapland ſpecimen of *S. tridactylites*. (See Fl.

Lapp. n. 173, and Fl. Suec. ed. 2. n. 375.) Willdenow, led as it ſeems by Vahl, has referred to *petræa* the *adſcendens* of many authors, but not of Linnæus, and has made a diſtinct ſpecies, by the name of *rupeſtris*, n. 37, of the plant of Wulfen and Jacquin. The true *petræa*, ſent by Seguier to Linnæus, and firſt defined in Syſt. Nat. ed. 10. v. 2. 1027, appears to be an annual plant, having a ſingle, ſmall, tapering *root*. *Stems* one or more, about ſix inches high, branched from the bottom throughout, in an alternate manner, round, downy, looſely ſpreading, of a weak and delicate habit, many-flowered, often purpliſh. *Leaves* ſeveral at the root, and many ſcattered about the ſtem, all ſtalked, hairy, light green, rather fleſhy and tender, divided, frequently almoſt to the baſe, into three principal lobes, which are variouſly cut, and often ſomewhat three-lobed; the upper leaves are leſs divided, and thoſe of the ultimate branches quite entire. *Flower-ſtalks* lateral and terminal, ſolitary, ſimple, long, ſlender, hairy, ſingle-flowered. Segments of the *calyx* about the length of the hairy germen, entirely ſuperior, ovate, obtuſe, three-ribbed, ſlightly downy, pale or whitiſh. *Petals* thrice as long as the calyx, obovate, emarginate as in Pona's figure, white, unſpotted, triple-ribbed. We truſt that this deſcription, and the figures cited, will prevent all poſſibility of miſtake in future.

S. *adſcendens*. Wedge-leaved Saxifrage. Linn. Sp. Pl. ed. 1. 405. ed. 2. 579. Allion. Pedem. v. 2. 72. t. 22. f. 3. Wulf. in Jacq. Coll. v. 1. 197. t. 11, and t. 12. f. 1, 2. (S. petræa; Willd. n. 39, excluding the Linnæan ſynonyms. Ait. n. 33. Fl. Dan. t. 68. Gunn. Norv. v. 2. 30. t. 9. S. hypnoides; Scop. Carn. v. 1. 296. t. 16. S. n. 987; Hall. Hiſt. v. 1. 422. Sedum tridactylites alpinum majus tertium; Bauh. Prodr. 131.)—Leaves wedge-ſhaped, toothed at the extremity. Stem ſolitary, erect, leafy, panicled. Calyx ſuperior, with ovate ſegments. Petals ſomewhat emarginate.—Common on the lofty mountains of Norway, Carinthia, Switzerland, &c. Haller heſitated to ſeparate this plant from the common *tridactylites*, and moſt other authors have taken it for the *petræa*. From both it is unqueſtionably diſtinct. Wulfen aſſerts the *root* to be perennial, though fibrous. The *ſtem* is always ſolitary, from two to five inches high, erect, ſtout, round, downy, leafy; for the moſt part ſimple below, though more or leſs branched above. *Leaves* numerous, eſpecially at the root, all wedge-ſhaped, tapering down into a broad flat ſtalk, which is very ſhort in the upper ones; their ſubſtance coriaceous, with ſeveral ſtraight ribs; their ſurface a little hairy and viſcid; their lateral margins ſtraight and entire; the extremity abrupt, ſtrongly and variouſly toothed. The *infloreſcence*, in ſmall plants, is ſimply racemoſe; but uſually panicled in a corymboſe manner, the primary *flower* being larger than the reſt, and ſurmounted by them. Their partial ſtalks, as well as the *petals*, are much ſmaller than in *S. petræa*, and the whole plant more ſtraight, cloſe, and erect. Linnæus deſcribed it from Burſer's ſpecimen, as appears by a mark in his own copy of Bauhin's Pinax; but he ſubſequently miſtook for the ſame the *petræa* of Gouan, which latter is the *adſcendens* of his Mantiſſa 2, 384. The younger Linnæus ſeems to have intended calling our preſent ſpecies *præmorſa*, a much better name than *adſcendens*; for whatever might accidentally be the poſture of Burſer's ſpecimen, the ſtem is naturally very ſtraight and upright, ſo that *ſtricta* would have been more appoſite.

S. *aquatica*. Water Saxifrage. Lapeyr. Pyren. t. 28, 29. (S. petræa; Gouan. Obſ. 29. t. 18. f. 3. S. adſcendens; Linn. Mant. 2. 384, excluding Allioni's ſynonym. Willd. n. 40. Ait. n. 34? S. n. 990; Hall. Hiſt. v. 1. 423. S. pyrenaica tridactylites latifolia; Tourn. Inſt. 253.)—Leaves in three deep, palmate, deeply cut lobes. Stem panicled, erect, leafy. Calyx ſuperior, with ovate ſegments. Petals entire. Stalks ſomewhat corymboſe.—Native of the Pyrenées. Notwithſtanding Gouan's poſitive aſſertion that this plant proved, on compariſon, the ſame with Seguier's *petræa* from mount Baldus, we can aver that they are diſtinct. Copious original ſpecimens, from both authors, are now before us, and the accounts of more recent ones have illuſtrated the ſubject better than it was formerly underſtood. The preſent is a perennial plant, a foot high at leaſt; the main *ſtem* erect, or aſcending, ſtout, leafy, downy, ſimple and unbranched, except that all its upper part is panicled, with numerous crowded corymboſe *flowers*. *Leaves* commonly more deeply divided and jagged than even in *petræa*; quite unlike thoſe of *adſcendens*. Segments of the *calyx* twice as large as in *petræa*, and more firm in texture. *Petals* narrower, and entire, deſcribed by Gouan as either white, or of a fine ſulphur colour; in one of his ſpecimens they have five or ſeven ribs, in another only three. We do not find the *germen* at all ſuperior, as his figure in ſome meaſure expreſſes it. Willdenow moſt unaccountably refers to this plant *S. decipiens* of Ehrhart.

S. *moſchata*. Muſky Alpine Saxifrage. Willd. n. 41. Ait. n. 35. Fl. Brit. n. 12. Engl. Bot. t. 2314. Lapeyr. Pyren. v. 1. 61. t. 37, 38. Wulf. in Jacq. Miſc. v. 2. 128. t. 21. f. 21? (S. n. 985; Hall. Hiſt. v. 1. 421.)—Radical leaves aggregate, thin, linear-lanceolate, undivided, rarely three-cleft, triple-ribbed. Stem nearly naked, corymboſe, with very few flowers.—Found on the mountains of Germany, Switzerland, Scotland, Dauphiny, and the Pyrenées, flowering in May or June. The perennial branching *roots* are crowned with many denſe roſe-like tufts of oblong, obtuſe, flat, blunt *leaves*, for the moſt part undivided, but a few of them are occaſionally divided, or three-cleft. *Stems* two or three inches high, bearing a few ſcattered, moſtly undivided *leaves*, and terminated by one, two, or ſometimes as many as five *flowers*, in a corymboſe form, the later ſurmounting the earlier ones. The ſegments of the *calyx* are ſuperior, ovate, obtuſe, about the length of the *germen*, but leſs hairy. *Petals* twice as long, obovate, triple-ribbed, buff-coloured; their ribs, like the *ſtamens* and *ſtyles*, tinged with red. The whole herb is glutinous, and minutely hairy, exhaling a muſky aromatic ſcent.

S. *muſcoides*. Moſſy-tufted Saxifrage. Wulf. in Jacq. Miſc. v. 2. 123. Willd. n. 42. (S. cæſpitoſa; Scop. Carn. v. 1. 293. t. 14. S. n. 988; Hall. Hiſt. v. 1. 422. S. pyrenaica, foliis partim integris, partim trifidis; Hall. Opuſc. It. Helvet. 292. t. 1. Segu. Veron. v. 1. 451. t. 9. f. 4. ſuppl. 205.)—Radical leaves aggregate, linear, three-cleft, rarely undivided, ribbed. Stem nearly naked, with very few, ſomewhat racemoſe, flowers.—Native of the mountains of Carniola, Carinthia, Switzerland, and the Pyrenées. Differs from the laſt conſiderably in aſpect, and eſſentially in its thicker, narrower, more linear or wedge-ſhaped, ſtrongly ribbed *leaves*, almoſt always three-cleft nearly half way down. The *ſtems* are three or four inches high, ſlender, bearing a very few undivided or three-cleft *leaves*, and one, two, or more yellowiſh *flowers*, ſmaller than the preceding, and rather racemoſe than corymboſe. The Swiſs botaniſts, miſled indeed by Linnæus himſelf, uſually take this for his *cæſpitoſa*, which is very diſtinct. Wulfen's figure in Jacq. Coll. v. 2. t. 21. f. 21, is certainly taken from *muſcoides*, whatever may be intended in his letter-preſs. We believe the ſame is figured in Lapeyrouſe, Pyren. t. 35.

S. *cæſpitoſa*. Tufted Alpine White Saxifrage. Linn.

Sp. Pl. 578. Willd. n. 43. Ait. n. 36. Fl. Brit. n. 11, excluding the reference to Scopoli. Engl. Bot. t. 794. Gunn. Norv. v. 2. 135. t. 7. f. 3, 4. (S. n. 989; Hall. Hiſt. v. 1. 423.)—Radical leaves aggregate, linear-wedge-ſhaped, undivided, three-cleft, or five-cleft, fleſhy; ribbed beneath. Stem nearly naked, with very few, ſomewhat corymboſe, flowers.—Native of the mountains of Lapland, Switzerland, Ireland and North Wales, flowering in June. The dark-green fleſhy *leaves* are tufted about the *root*, or radical ſhoots, and are commonly digitate, with a wedge-ſhaped baſe, ſlightly hairy and viſcid, without any particular ſmell. *Stem* two or three inches high, bearing a few divided or entire leaves, and one or more large white *flowers*, with obovate triple-ribbed *petals*. If there be more than one, the earlier *flowers* are always inferior to the others. The *calyx* is almoſt completely ſuperior, with broad ovate ſegments.

We are diſpoſed to conſider as varieties of the preſent ſpecies, the two following.

S. *groenlandica.* Linn. Sp. Pl. 578. Ait. n. 37. Lapeyr. Pyren. v. 1. 39. t. 19. (S. tridactylites groenlandica, caulibus valdè folioſis; Dill. Elth. 337. t. 253. f. 329.)—This is found on the Pyrenées as well as in Greenland, and ſeems to differ only in its ſmaller ſize and more condenſed habit; for the flattened woolly ſtigmas, indicated by Lapeyrouſe, do not eſſentially differ from the ordinary *cæſpitoſa*. Gunner has figured this variety in his v. 2. t. 7. f. 1.

S. *hirta*, Donn. Cant. ed. 5. 107. Engl. Bot. t. 2291, appears to be, on the other hand, a more dilated and luxuriant form of *cæſpitoſa*. Mr. I. T. Mackay has favoured the writer of this with a ſtill more luxuriant ſpecimen than that in Engl. Bot., bearing nine flowers, the root of which, when taken from the lofty top of Brandon mountain in the county of Kerry, bore plants of the common ſize and aſpect of wild *cæſpitoſa*. *S. lævis* of Donn and Haworth, found by Mr. Mackay in the ſame ſpot, is evidently a ſmooth variety of *hirta*, more ſlender in all its parts. Theſe ſpecimens teach us caution in eſtabliſhing ſpecies of *Saxifraga*, and prove that too many of this particular tribe have been made by our Britiſh cultivators. Willdenow conſiders Allioni's *pedemontana*, like his *hypnoides*, as belonging to *cæſpitoſa*. What the latter may be we are not certain, but the former we have little ſcruple in referring, as above, to *geranioides*. The long *calyx* is totally unlike *cæſpitoſa*.

S. *tricuſpidata*, Willd. n. 44. Fl. Dan. t. 976, ſeems by its ſpotted *petals*, akin to ſeveral ſpecies in the ſecond ſection, notwithſtanding its lobed *leaves*; but we have ſeen no ſpecimen.

S. *palmata*. Palmate Saxifrage. Fl. Brit. n. 13. Engl. Bot. t. 455. Ait. n. 38. (S. decipiens; Ehrh. Herb. 5?)—Leaves hairy, palmate, with a linear-wedge-ſhaped baſe; the lower five-lobed; upper three-lobed. Shoots aſcending. Stem erect, leafy, with a denſe panicle of few flowers. Petals roundiſh. Found by Mr. Griffith, on the rocks of Cwm Idwell, North Wales, flowering in May. This is *S. petræa* of Withering, and we have been diſpoſed to conſider it as the *cæſpitoſa* of Fl. Dan. t. 71. How far it is permanently diſtinct from the real *cæſpitoſa*, may admit of ſome doubt. It is extremely like Ehrhart's own ſpecimens of his *decipiens*, except the roundiſh, not obovate, *petals*; nor are we ſure how far circumſtances may affect even that character, as our various ſpecimens differ among themſelves.

S. *platypetala*. Broad-petalled Saxifrage. Sm. Tr. of Linn. Soc. v. 10. 341. Engl. Bot. t. 2276.—Leaves in three or five briſtle-pointed ſegments. Shoots procumbent. Stem ſomewhat leafy. Petals obovate, nearly orbicular.—Native of Snowdon, according to Mr. D. Turner; and of the mountains of Clova, in Anguſhire, according to the late Mr. G. Don. This is ſufficiently diſtinct from all the foregoing, if it be not a variety of *hypnoides*, hereafter deſcribed. The three, five, or ſeven, narrow divaricated lobes of the *leaves*, are each tipped with a hair or briſtle-like point. *Shoots* long, trailing, leafy. *Flowers* large, white, panicled, uſually four. *Calyx* briſtle-pointed. *Petals* almoſt orbicular in their limb, each with three ribs, of which the external ones ſend off many ſmall lateral branches. *Stalks* and *calyx* covered with brown glandular viſcid hairs. *Germen* partly ſuperior.

S. *elongella*. Long-ſtalked Saxifrage. Donn. Cant. ed. 5. 107. Sm. Tr. of Linn. Soc. v. 10. 340. Engl. Bot. t. 2277.—Leaves in three or five briſtle-pointed ſegments; their baſe elongated; the uppermoſt linear and undivided. Flower-ſtalks very long and naked.—Gathered by Mr. G. Don on a rock by a river called Lintrathen, a mile and a half north of Airly caſtle, Anguſhire, flowering in June. The creeping *ſtems* ſend off many leafy ſhoots. The lower *leaves* on each branch, and one or two below the flower-ſtalk, are undivided, and nearly linear; the reſt, from a long narrow baſe, divide ſuddenly into three ſhort, acute, nearly equal lobes, the lateral ones rarely cloven. All the *leaves* are more or leſs fringed with ſoft hairs, and their points tipped with a ſmall briſtle. The greateſt peculiarity of this ſpecies conſiſts in its ſolitary, ſimple, terminal, naked *flower-ſtalks*, very ſlightly glandular, each about two inches tall, and bearing a very large white *flower*, whoſe obovate *petals* are ribbed in a ſimilar manner to the laſt. By culture one or two lateral divided *flower-ſtalks* are ſometimes produced; but this is accidental. Strictly ſpeaking, this might be referred to the next ſection, but it would be offering great violence to nature.

S. *hypnoides*. Moſſy Saxifrage, or Ladies' Cuſhion. Linn. Sp. Pl. 579. Willd. n. 49. Ait. n. 40. Fl. Brit. n. 14. Engl. Bot. t. 454. Fl. Dan. t. 348. Lapeyr. Pyren. t. 32. (Sedum alpinum trifido folio; Moriſ. ſect. 12. t. 9. f. 26.)—Leaves linear; undivided or three-lobed, briſtle-pointed. Shoots procumbent. Stem ſomewhat leafy, with a corymboſe panicle. Petals elliptic-oblong.—Native of the mountains of Derbyſhire, Weſtmoreland, Scotland, and Wales, as well as of Norway and the Pyrenées; but we can find no certain proof of its being a Swiſs or German plant, ſo many things having been by various authors miſtaken for it, that we dare not truſt the reports of any. Nothing is more commonly cultivated in gardens, where it thrives much on ſhady walls or rock-work, flowering in the early part of ſummer. The long entangled leafy *ſhoots* form denſe moſſy tufts of a light green. The *leaves* are ſcarcely ever more than three-cleft, moſtly undivided, ſomewhat fringed; thoſe on the proſtrate ſhoots often bearing pale, axillary, bulb-like, oval buds, as deſcribed by Lapeyrouſe, but this is a caſual circumſtance. *Flowers* from three to ſix or eight in each level-topped panicle. *Petals* much narrower and more oblong than in *S. platypetala*, triple-ribbed, the mid-rib ſometimes branched at the top. *Germen* not quite half ſuperior.

Section 4. *Leaves lobed. Stems procumbent.*

S. *cymbalaria*. Yellow Proſtrate Saxifrage. Linn. Sp. Pl. 579. Willd. n. 45, excluding Tournefort's ſynonym. Sm. Fl. Græc. Sibth. t. 378, unpubliſhed. (S. orientalis; Jacq. Obſ. faſc. 2. 9. t. 34. Willd. n. 47. S. exigua, foliis cymbalariæ; Buxb. Cent. 2. 40. t. 45. f. 2. Geum orientale rotundifolium ſupinum, flore aureo; Tourn. Cor. 18.)—Leaves kidney-ſhaped, with about ſeven lobes; the uppermoſt three-lobed, or undivided. Stems procumbent. Petals ovate, with two dots near the baſe.—Found on Parnaſſus, Delphi, and other Grecian mountains, in moiſt ſhady ſituations, by Dr. Sibthorp and Mr. Hawkins. Tournefort had long ago brought this plant from the Eaſt, but its preciſe place of growth was not recorded. The *roots* are perennial, creeping, tufted. *Stems* about a ſpan long, compoſing lax procumbent tufts, branched, leafy, round, ſmooth, and ſlender. *Leaves* ſmooth and ſhining, much reſembling thoſe of *Antirrhinum Cymbalaria*, but not tinged with purple; thoſe on the ſtem frequently oppoſite; their *footſtalks* ſlender, thrice as long as the leaves. *Flowers* rather ſmall, yellow, ſolitary, on long, ſlender, ſolitary, chiefly terminal, partly axillary, ſtalks. *Calyx* ſmooth, reflexed, perfectly inferior. *Petals* with ſhort claws, ovate, obtuſe, each marked near the baſe with two tranſverſe, prominent, orange-coloured points, in a ſlightly bordered cavity, or depreſſion.

S. *hederacea*. Ivy-leaved Saxifrage. Linn. Sp. Pl. 579 Willd. n. 46. Ait. n. 39 Sm. Fl. Græc. Sibth. t. 379, unpubliſhed. (S. cretica annua minima, hederaceo folio; Tourn. Cor. 18.)—Leaves ovate, ſlightly three-lobed; the uppermoſt oblong, undivided. Stem thread-ſhaped, proſtrate, flaccid. Petals rounded, with claws.—Gathered by Tournefort, as well as by Sibthorp, on moiſt ſhady rocks in Crete and Cyprus. The *root* is fibrous and annual. *Stems* numerous, ſpreading in every direction, proſtrate, from ſix to twelve inches long, repeatedly branched, ſlender, ſmooth. *Leaves* oppoſite, roundiſh, ſmooth and ſhining, unequal, longer than their *footſtalks*. *Flowers* axillary and terminal, very ſmall, ſolitary, on long ſlender ſtalks; their ſize and aſpect like ſome *Arenaria* or *Sagina*. *Calyx* ſpreading, concave, ſmooth. *Petals* white and ſpotleſs, each with a claw of its own length. *Germen* in ſome degree inferior, ſo as to juſtify Tournefort's idea of the genus, though the greater portion is ſuperior and ovate, as in the laſt. Miller is ſaid to have cultivated this ſpecies in 1752, but we have never met with it in any garden. Our ſpecimens have been compared with thoſe of Tournefort.

S. *mollis*. Tender-leaved Saxifrage. (Geum orientale, cymbalariæ folio molli et glabro, flore magno albo; Tourn. Cor 18. Voyage, v. 2. 148, with a plate.)—Leaves kidney-ſhaped, with about ſeven lobes; the uppermoſt undivided. Stems procumbent. Petals obovate, triple-ribbed.—Gathered by Tournefort, in the clefts of perpendicular rocks on mount Ararat, flowering in Auguſt. Several botaniſts have confounded this rare ſpecies with one or other of the two laſt deſcribed; but they are all perfectly diſtinct, as appears by Tournefort's own ſpecimens. The preſent agrees moſt in character, and mode of growth, with *S. cymbalaria*, to which Willdenow refers it, nor was Jacquin ſatisfied of their being eſſentially different. Their *leaves* indeed are ſimilar, but moſt fleſhy in the plant before us, and its *flowers* are totally unlike *cymbalaria*, being large and white, with obovate, green-ribbed, unſpotted *petals*, and downy *flower-ſtalks*, characters belonging to many ſpecies in the laſt ſection. The form of the *leaves* and *petals*, as well as the perfectly ſuperior *germen*, and whole habit of the plant, diſtinguiſh this ſpecies from the weak, trailing, ſmall-flowered *S. hederacea*.

We have not numbered the ſpecies of *Saxifraga*, becauſe we have not aimed at a complete view of the whole, but merely an illuſtration of ſuch as required it. A few, even of the Linnæan ones, are therefore not mentioned, becauſe we had nothing new to remark concerning them. Still leſs have we undertaken to define the limits of ſpecies in various authors, of which we had acceſs to no ſpecimens. Several of thoſe we have ſeen are involved in uncertainty; for inſtance, *S. pectinata* of Mr. Purſh, n. 17, a plant of Mr. Menzies, with five *ſtyles*, and five bivalve *capſules*, conſequently no *Saxifraga*. *S. cuneata*, Willd. n. 48. (S. cuneifolia; Cavan. Ic. v. 3. 25. t. 248.), is erroneouſly placed in the laſt ſection of the genus, and evidently, as far as can be judged by the figure, belongs to the ſame tribe as *cæſpitoſa*, of which it may even be a variety, not very remote from *hirta*, Engl. Bot. t. 2291.—Horticulturiſts make many more ſpecies of this elegant genus than we are diſpoſed to admit, and we preſume not to decide, but rather to contribute to the maſs of practical obſervation; for the uſe of thoſe, who with a ſtill more complete ſtock of original ſpecimens, and with more time for inveſtigation than preſent circumſtances allow us, may hereafter further elucidate the matter.

SAXIFRAGA, in *Gardening*, contains plants of the low, hardy, herbaceous, perennial kind, of which the ſpecies cultivated are, the pyramidal ſaxifrage (S. cotyledon); the white ſaxifrage (S. granulata); the thick-leaved ſaxifrage (S. craſſifolia); the London pride (S. umbroſa); the moſſy ſaxifrage, or ladies' cuſhion (S. hypnoides); the China ſaxifrage (S. ſarmentoſa); and the round-leaved ſaxifrage (S. rotundifolia). And there are other ſpecies that may be cultivated where great variety is wanted.

In reſpect to the firſt ſort it is obſerved, that when the plants are ſtrong they produce very large pyramids of flowers, which make a fine appearance; and being kept in the ſhade, and ſcreened from wind and rain, continue in beauty a conſiderable time. There are ſeveral varieties.

The ſecond ſort varies with double flowers, in which ſtate it is cultivated as an ornamental plant.

In regard to the third ſort it is obſerved, that the ſtem changes every year into root; that which flowers one year loſing its leaves during the winter, turning to the ground, becoming black, and putting forth fibres: and after the plant has flowered, the ſtem puts forth branches from the axils of the leaves, which have the panicles of flowers for the next year included in their gems. According to Curtis, the leaves are large, red on the under, and of a fine ſhining green on their upper ſurface, and may be ranked among the more handſome kinds of foliage: the flowering ſtems, according to the richneſs and moiſture of the ſoil in which they are planted, riſe from one to two or even three feet high; at top ſupporting a large bunch of purple pendulous flowers, expanding in April and May, and, if the ſeaſon prove favourable, making a fine appearance. It is likewiſe remarked, that there is another ſaxifrage in gardens, exceedingly like this in appearance, but differing, in producing larger bunches of flowers, and in having larger, rounder, and more heart-ſhaped leaves.

The fourth ſort has the names of none-ſo-pretty, and London pride.

Method of Culture.—The firſt ſort may be readily increaſed by planting off-ſets taken from the ſides of the old plants in ſmall pots filled with freſh light earth, placing them in the ſhade during the ſummer, but letting them be expoſed to the influence of the ſun in winter: all the off-ſets ſhould be taken off, as by that means they will flower much ſtronger: the young plants afford flowers the ſecond year. The ſecond ſort may likewiſe be increaſed in the ſame way, which ſhould be planted out where they are to remain in July, when the ſtems decay, in freſh undunged earth, giving them a ſhady ſituation till winter: they ſhould be ſet out in large tufts, and when in the open ground have a ſhady place aſſigned them.

The third ſort may be increaſed with little trouble by parting the roots, and planting them out in the ſpring or autumn in the open ground, or in pots in the former ſituation, being protected in ſevere weather, and in the latter removed to the greenhouſe or a garden-frame.

The fourth may alſo be raiſed by off-ſets in the ſame way, a ſhady ſituation being choſen.

The fifth ſort is eaſily increaſed by planting its trailing rooted branches in the autumn where they are to remain: it ſhould have a moiſt ſoil and ſhaded ſituation.

The ſixth may be readily raiſed by the runners, which may be planted in pots to be placed in the greenhouſe, though it will bear the open air in mild winters in a warm ſheltered ſituation.

And the laſt may be increaſed by parting the roots and planting them out in the early autumn: it ſhould have a moiſt ſhady ſituation, with a rather ſtiff loamy ſoil.

They all afford ornament and variety in the clumps, borders, and other parts of pleaſure-grounds; except the ſixth, which muſt have a place in the greenhouſe collection.

Saxifraga, *Saxifraſa*, in the *Materia Medica*. We have two very different plants under this name, ſo that the writers on this ſubject ſeem often ſtrangely to contradict one another in their deſcriptions, when they are really deſcribing two different plants. The one is the *ſaxifraga antiquorum*. This is a low plant, ſomewhat reſembling thyme, and its ſeed is of an agreeable ſmell, and warm and acrid taſte. The other is the common white meadow ſaxifrage, the *ſaxifraga alba*, or *S. granulata*, a plant of ſix or eight inches high, with roundiſh leaves and large white flowers. The root of this ſpecies is granuloſe, or made up of a number of ſmall knobs, and theſe are in moſt places uſed in the ſhops under the name of ſaxifrage ſeed.

The ſeeds, which are numerous, very ſmall, and black, and which were adminiſtered by infuſing them in white wine, or by a decoction in common water, as well as the leaves and roots of ſaxifrage, were once in great eſteem as aperients and diuretics, in obſtructions of the menſes, ſtranguries, and nephritic caſes, whence the name; but they have of late loſt their credit.

Linnæus deſcribes the taſte of this plant to be acrid and pungent, which, ſays Dr. Woodville, we have not been able to diſcover: neither the tubercles of the root, nor the leaves, manifeſt to the organs of taſte any quality likely to be of medicinal uſe; and therefore, though this ſpecies of ſaxifrage has been long employed as a popular remedy in nephritic and gravelly diſorders, yet we do not find, either from its ſenſible qualities, or from any publiſhed inſtances of its efficacy, that it deſerves a place in the Materia Medica. The ſuperſtitious doctrine of "ſignatures" ſuggeſted the uſe of the root, which is a good example of what Linnæus has termed radix granulata. The bulbs or tubercles of ſuch roots anſwer an important purpoſe in vegetation, by ſupplying the plants with nouriſhment and moiſture, and thereby enabling them to reſiſt the efforts of that drought to which the dry ſoils they inhabit peculiarly expoſe them. Woodv. Med. Bot.

SAXIFRAGÆ, in *Botany*, the eighty-fourth natural order in Juſſieu's ſyſtem, the ſecond of his fourteenth claſs; ſee Ficoideæ. The characters of the order are theſe.

Calyx ſuperior, or more frequently inferior, in four or five diviſions. *Petals* four or five, rarely wanting, inſerted into the upper part of the calyx, and alternate with its ſegments. *Stamens* as many, or moſtly twice that number, inſerted into the ſame place. *Germen* ſimple, ſuperior, or rarely inferior. *Styles* and *ſtigmas* two. *Fruit* often capſular, of one or two cells, with many ſeeds, its ſummit with two valves, the partition formed by their inflexion. *Corculum* incurved, ſurrounding a farinaceous or ſomewhat fleſhy maſs. *Stem* generally herbaceous. *Leaves* alternate, rarely oppoſite; ſometimes thickiſh, or fleſhy.

Sect. 1. *Fruit ſuperior, capſular,* terminating in *two beaks.*

Heuchera, *Saxifraga*, *Tiarella*, and *Mitella*. To theſe the late Mr. Dryander properly added *Galax*.

Sect. 2. *Fruit inferior, capſular or pulpy.*

Chryſoſplenium and *Adoxa*.

Sect. 3. *Genera allied to the Saxifragæ.*

Weinmannia, *Cunonia*, and *Hydrangea*.

Mr. Saliſbury in Sims and Konig's Ann. of Bot. v. 1. 513, has ſuggeſted the propriety of eſtabliſhing another ſection of this order, *with an indefinite number of ſtamens*, which is exemplified in *Bauera*, a genus named by the writer of this, and not by his friend ſir Joſeph Banks, in honour of thoſe eminent botaniſts and draughtſmen, the two brothers of the name of *Bauer*. The author of *Bauera* however diſclaims all fanciful compariſons between the plant and the perſons whoſe name it bears, as well as all invidious ones between the reſpective merits of the parties, which in his opinion are equal and unrivalled.

SAXIFRAGE, Burnet. See Pimpinella and Aniſe. The roots of the greater burnet ſaxifrage with a white umbel have a hot and pungent, but not very durable, taſte; their virtue is extracted partially by water, and completely by rectified ſpirit. When large quantities are diſtilled with water, there ſeparates from the water a ſmall portion of a yellowiſh eſſential oil, extremely acrid and fiery. The leaves and ſeeds of the plants have likewiſe a conſiderable acrimony; the leaves leſs than the ſeeds, and both leſs than the roots. This pungent root is in great eſteem among the Germans, as a warm ſtimulating reſolvent, aperient, diaphoretic, &c. in weakneſs of the ſtomach from viſcid phlegm, infarctions of the breaſt, tumours and obſtructions of the glands, impurities of the blood, and, in general, wherever tenacious humours are to be attenuated, or the fluid ſecretions promoted. It is an uſeful ingredient in our officinal compound arum powder; and it is alſo employed as a maſticatory for ſtimulating the ſalival glands, and in gargariſm for diſſolving viſcid mucus in the fauces. Lewis Mat. Med.

Saxifrage, *Golden*. See Chrysosplenium.

Saxifrage, *Red*, *Saxifraga rubra*, a name given by ſome botanic authors to the filipendula, or dropwort.

Saxifrage, *Yellow*, *Saxifraga lutea*, a name given by Fuchſius, and ſome other authors, to the common melilot.

SAXKIOBING, in *Geography*, a ſea-port town of Denmark, in the iſland of Lapland, trading chiefly in corn; 15 miles E. of Naſcow.

SAXMUNDHAM, a market-town in the hundred of Plomeſgate, and county of Suffolk, England, is ſituated on an eminence, at a ſhort diſtance from the river Alde, and diſtant 89 miles N.E. from London. The houſes are in general well-built, but the ſtreets are narrow and unpaved. The market day is Thurſday, weekly; and there are two annual fairs, on Holy Thurſday, and on the 23d of September. Here was formerly a houſe of induſtry, which was deſtroyed in Auguſt, 1766, by a riotous mob, under the pretence of releaſing the poor, but in reality to defeat an act of parliament which had juſt paſt reſpecting them. On this occaſion it was neceſſary to call in the aſſiſtance of the military, and in conſequence of reſiſtance ſeveral lives were loſt. At the ſouthern extremity of the town ſtands Hurts-Hall, a ſeat belonging to Charles Long, eſq. The houſe has been partly rebuilt, and conſiderably enlarged, by the preſent proprietor; and has attached to it a large extent of ground judiciouſly laid out, and embelliſhed with a fine lake, which, in one place, is open to the view, and in another is deeply naſſus, Delphi, and other Grecian mountains, in moiſt ſhady ſituations, by Dr. Sibthorp and Mr. Hawkins. Tournefort had long ago brought this plant from the Eaſt, but its preciſe place of growth was not recorded. The *roots* are perennial, creeping, tufted. *Stems* about a ſpan long, compoſing lax procumbent tufts, branched, leafy, round, ſmooth, and ſlender. *Leaves* ſmooth and ſhining, much reſembling thoſe of *Antirrhinum Cymbalaria*, but not tinged with purple; thoſe on the ſtem frequently oppoſite; their *footſtalks* ſlender, thrice as long as the leaves. *Flowers* rather ſmall, yellow, ſolitary, on long, ſlender, ſolitary, chiefly terminal, partly axillary, ſtalks. *Calyx* ſmooth, reflexed, perfectly inferior. *Petals* with ſhort claws, ovate, obtuſe, each marked near the baſe with two tranſverſe, prominent, orange-coloured points, in a ſlightly bordered cavity, or depreſſion.

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In regard to the third ſort it is obſerved, that the ſtem changes every year into root; that which flowers one year loſing its leaves during the winter, turning to the ground, becoming black, and putting forth fibres: and after the plant has flowered, the ſtem puts forth branches from the axils of the leaves, which have the panicles of flowers for the next year included in their gems. According to Curtis, the leaves are large, red on the under, and of a fine ſhining green on their upper ſurface, and may be ranked among the more handſome kinds of foliage: the flowering ſtems, according to the richneſs and moiſture of the ſoil in which they are planted, riſe from one to two or even three feet high; at top ſupporting a large bunch of purple pendulous flowers, expanding in April and May, and, if the ſeaſon prove favourable, making a fine appearance. It is likewiſe remarked, that there is another ſaxifrage in gardens, exceedingly like this in appearance, but differing, in producing larger bunches of flowers, and in having larger, rounder, and more heart-ſhaped leaves.

The fourth ſort has the names of none-ſo-pretty, and London pride.

Method of Culture.—The firſt ſort may be readily increaſed by planting off-ſets taken from the ſides of the old plants in ſmall pots filled with freſh light earth, placing them in the ſhade during the ſummer, but letting them be expoſed to the influence of the ſun in winter: all the off-ſets ſhould be taken off, as by that means they will flower much ſtronger: the young plants afford flowers the ſecond year. The ſecond ſort may likewiſe be increaſed in the ſame way, which ſhould be planted out where they are to remain in July, when the ſtems decay, in freſh undunged earth, giving them a ſhady ſituation till winter: they ſhould be ſet out in large tufts, and when in the open ground have a ſhady place aſſigned them.

The third ſort may be increaſed with little trouble by parting the roots, and planting them out in the ſpring or autumn in the open ground, or in pots in the former ſituation, being protected in ſevere weather, and in the latter removed to the greenhouſe or a garden-frame.

The fourth may alſo be raiſed by off-ſets in the ſame way, a ſhady ſituation being choſen.

The fifth ſort is eaſily increaſed by planting its trailing rooted branches in the autumn where they are to remain: it ſhould have a moiſt ſoil and ſhaded ſituation.

The ſixth may be readily raiſed by the runners, which may be planted in pots to be placed in the greenhouſe, though it will bear the open air in mild winters in a warm ſheltered ſituation.

And the laſt may be increaſed by parting the roots and planting them out in the early autumn: it ſhould have a moiſt ſhady ſituation, with a rather ſtiff loamy ſoil.

They all afford ornament and variety in the clumps, borders, and other parts of pleaſure-grounds; except the ſixth, which muſt have a place in the greenhouſe collection.

SAXIFRAGA, *Saxifraſa*, in the *Materia Medica*. We have two very different plants under this name, ſo that the writers on this ſubject ſeem often ſtrangely to contradict one another in their deſcriptions, when they are really deſcribing two different plants. The one is the *ſaxifraga antiquorum*. This is a low plant, ſomewhat reſembling thyme, and its ſeed is of an agreeable ſmell, and warm and acrid taſte. The other is the common white meadow ſaxifrage, the *ſaxifraga alba*, or *S. granulata*, a plant of ſix or eight inches high, with roundiſh leaves and large white flowers. The root of this ſpecies is granuloſe, or made up of a number of ſmall knobs, and theſe are in moſt places uſed in the ſhops under the name of ſaxifrage ſeed.

The ſeeds, which are numerous, very ſmall, and black, and which were adminiſtered by infuſing them in white wine, or by a decoction in common water, as well as the leaves and roots of ſaxifrage, were once in great eſteem as aperients and diuretics, in obſtructions of the menſes, ſtranguries, and nephritic caſes, whence the name; but they have of late loſt their credit.

Linnæus deſcribes the taſte of this plant to be acrid and pungent, which, ſays Dr. Woodville, we have not been able to diſcover: neither the tubercles of the root, nor the leaves, manifeſt to the organs of taſte any quality likely to be of medicinal uſe; and therefore, though this ſpecies of ſaxifrage has been long employed as a popular remedy in nephritic and gravelly diſorders, yet we do not find, either from its ſenſible qualities, or from any publiſhed inſtances of its efficacy, that it deſerves a place in the Materia Medica. The ſuperſtitious doctrine of "ſignatures" ſuggeſted the uſe of the root, which is a good example of what Linnæus has termed radix granulata. The bulbs or tubercles of ſuch roots anſwer an important purpoſe in vegetation, by ſupplying the plants with nouriſhment and moiſture, and thereby enabling them to reſiſt the efforts of that drought to which the dry ſoils they inhabit peculiarly expoſe them. Woodv. Med. Bot.

SAXIFRAGÆ, in *Botany*, the eighty-fourth natural order in Juſſieu's ſyſtem, the ſecond of his fourteenth claſs; ſee FICOIDEÆ. The characters of the order are theſe.

Calyx ſuperior, or more frequently inferior, in four or five diviſions. *Petals* four or five, rarely wanting, inſerted into the upper part of the calyx, and alternate with its ſegments. *Stamens* as many, or moſtly twice that number, inſerted into the ſame place. *Germen* ſimple, ſuperior, or rarely inferior. *Styles* and *ſtigmas* two. *Fruit* often capſular, of one or two cells, with many ſeeds, its ſummit with two valves, the partition formed by their inflexion. *Corculum* incurved, ſurrounding a farinaceous or ſomewhat fleſhy maſs. *Stem* generally herbaceous. *Leaves* alternate, rarely oppoſite; ſometimes thickiſh, or fleſhy.

Sect. 1. *Fruit ſuperior, capſular,* terminating in *two beaks.*

Heuchera, Saxifraga, Tiarella, and *Mitella.* To theſe the late Mr. Dryander properly added *Galax.*

Sect. 2. *Fruit inferior, capſular or pulpy.*

Chryſoſplenium and *Adoxa.*

Sect. 3. *Genera allied to the Saxifragæ.*

Weinmannia, Cunonia, and *Hydrangea.*

Mr. Saliſbury in Sims and Konig's Ann. of Bot. v. 1. 513, has ſuggeſted the propriety of eſtabliſhing another ſection of this order, *with an indefinite number of ſtamens,* which is exemplified in *Bauera,* a genus named by the writer of this, and not by his friend ſir Joſeph Banks, in honour of thoſe eminent botaniſts and draughtſmen, the two brothers of the name of *Bauer.* The author of *Bauera* however diſclaims all fanciful compariſons between the plant and the perſons whoſe name it bears, as well as all invidious ones between the reſpective merits of the parties, which in his opinion are equal and unrivalled.

SAXIFRAGE, BURNET. See PIMPINELLA and ANISE. The roots of the greater burnet ſaxifrage with a white umbel have a hot and pungent, but not very durable, taſte; their virtue is extracted partially by water, and completely by rectified ſpirit. When large quantities are diſtilled with water, there ſeparates from the water a ſmall portion of a yellowiſh eſſential oil, extremely acrid and fiery. The leaves and ſeeds of the plants have likewiſe a conſiderable acrimony; the leaves leſs than the ſeeds, and both leſs than the roots. This pungent root is in great eſteem among the Germans, as a warm ſtimulating reſolvent, aperient, diaphoretic, &c. in weakneſs of the ſtomach from viſcid phlegm, infarctions of the breaſt, tumours and obſtructions of the glands, impurities of the blood, and, in general, wherever tenacious humours are to be attenuated, or the fluid ſecretions promoted. It is an uſeful ingredient in our officinal compound arum powder; and it is alſo employed as a maſticatory for ſtimulating the ſalival glands, and in gargariſm for diſſolving viſcid mucus in the fauces. Lewis Mat. Med.

SAXIFRAGE, *Golden.* See CHRYSOSPLENIUM.

SAXIFRAGE, *Red, Saxifraga rubra,* a name given by ſome botanic authors to the filipendula, or dropwort.

SAXIFRAGE, *Yellow, Saxifraga lutea,* a name given by Fuchſius, and ſome other authors, to the common melilot.

SAXKIOBING, in *Geography,* a ſea-port town of Denmark, in the iſland of Lapland, trading chiefly in corn; 15 miles E. of Naſcow.

SAXMUNDHAM, a market-town in the hundred of Plomeſgate, and county of Suffolk, England, is ſituated on an eminence, at a ſhort diſtance from the river Alde, and diſtant 89 miles N.E. from London. The houſes are in general well-built, but the ſtreets are narrow and unpaved. The market day is Thurſday, weekly; and there are two annual fairs, on Holy Thurſday, and on the 23d of September. Here was formerly a houſe of induſtry, which was deſtroyed in Auguſt, 1766, by a riotous mob, under the pretence of releaſing the poor, but in reality to defeat an act of parliament which had juſt paſt reſpecting them. On this occaſion it was neceſſary to call in the aſſiſtance of the military, and in conſequence of reſiſtance ſeveral lives were loſt. At the ſouthern extremity of the town ſtands Hurts-Hall, a ſeat belonging to Charles Long, eſq. The houſe has been partly rebuilt, and conſiderably enlarged, by the preſent proprietor; and has attached to it a large extent of ground judiciouſly laid out, and embelliſhed with a fine lake, which, in one place, is open to the view, and in another is deeply emboſomed in wood. Near this manſion ſtands the church of Saxmundham, a ſpacious edifice, containing various monuments to the memory of different members of the Long family.

According to the population returns for 1811, this pariſh contains 114 houſes and 959 inhabitants. Beauties of England and Wales, vol. xiv. by F. Shoberl.

SAXO, in *Biography*, the oldeſt of the Daniſh hiſtorians, called *Grammaticus*, on account of his great learning, was deſcended from an illuſtrious family, and born in Seland, but at what time is not known. By ſome writers he is ſtyled Longus, an epithet which is ſuppoſed to have been applied to him in conſequence of his ſtature. He was ſecretary or amanuenſis to Abſolon, archbiſhop of Lunden, by whoſe deſire he wrote the hiſtory of his native country, in ſixteen books. This hiſtory commences with Dan, the firſt king of Denmark, who was contemporary with David, and terminates with the year 1186. Saxo died in 1204, and was buried in the cathedral of Roſkild. He collected the materials of his hiſtory from the works of the old Daniſh poets, inſcriptions on old ſtones, the Icelandic chronicles, and the relation that had been drawn up by his friend and patron Abſolon. He wrote in Latin, and the ſtyle, conſidering the age in which it was written, is extremely elegant, but rather too poetical for hiſtory. He is highly applauded by Heinſius and Gerard Voſſius; and Eraſmus, ſpeaking of his hiſtory, ſays, "Probo vividum et ardens ingenium, orationem nunquam remiſſam aut dormitantem, tum miram verborum copiam, ſententias crebras, et figurarum admirabilem varietatem, ut ſatis admirari, nequeam unde illa ætate homini Dano tanta vis eloquendi ſuppetiverit." With reſpect to the authenticity of the facts, Holberg remarks that the firſt part, which relates to the origin of the Danes and the reign of the ancient kings, is full of fables, but that the laſt eight books, and particularly thoſe that refer to the events of the author's own times, deſerve the utmoſt credit.

SAXON, or the SAXON *Language*, as it is ſpoken in England, is diſtinguiſhed by three ſeveral epochs, and may therefore be divided into three dialects. The firſt of theſe is that which the Saxons uſed, from their entrance into this iſland, till the irruption of the Danes, for the ſpace of three hundred and thirty years. This has been called the Britiſh Saxon: and no monument of it remains, except a ſmall metrical fragment of the genuine Caedmon, inſerted in Alfred's verſion of the Venerable Bede's Eccleſiaſtical Hiſtory. The ſecond is the Daniſh Saxon, which prevailed from the Daniſh to the Norman invaſion, A. D. 1066; and of which many conſiderable ſpecimens, both in verſe and proſe, are ſtill preſerved: particularly, two literal verſions of the four goſpels, (MSS. Bibl. Bodl. Oxon. Cod. membran. in Pyxid. 4to. grand. quadrat. And MSS. Cotton. Otho. Nor. D. 4; both theſe manuſcripts, which were written and ornamented in the Saxon times, are of the higheſt curioſity and antiquity); and the ſpurious Caedmon's beautiful poetical paraphraſe of the Book of Geneſis, printed by Junius, Amſt. 1655; and the prophet Daniel. The third may be properly ſtyled the Norman Saxon; which began about the time of the Norman acceſſion, and continued beyond the reign of Henry II. who died in 1189.

The laſt of theſe three dialects formed a language extremely barbarous, irregular, and intractable; and conſequently promiſes no very ſtriking ſpecimens in any ſpecies of compoſition. Its ſubſtance was the Daniſh Saxon, adulterated with French. The Saxon indeed, a language ſubſiſting on uniform principles, and poliſhed by poets and theologiſts, however corrupted by the Danes, had much perſpicuity, ſtrength, and harmony: but the French imported by the Conqueror and his people, was a confuſed jargon of Teutonic, Gauliſh, and vitiated Latin. In this fluctuating ſtate of our national ſpeech, the French predominated. Even before the conqueſt the Saxon language began to fall into contempt, and the French, or Frankiſh, to be ſubſtituted in its ſtead: a circumſtance which at once facilitated and foretold the Norman acceſſion. In the year 652, it was the common practice of the Anglo-Saxons to ſend their youth to the monaſteries of France for education: and not only the language, but the manners of the French, were eſteemed the moſt polite accompliſhments. In the reign of Edward the Confeſſor, the reſort of Normans to the Engliſh court was ſo frequent, that the affectation of imitating the Frankiſh cuſtoms became almoſt univerſal: and even the lower claſs of people was ambitious of catching the Frankiſh idiom. It was no difficult taſk for the Norman lords to baniſh that language of which the natives began to be abſurdly aſhamed. The new invaders commanded the laws to be adminiſtered in French. Many charters of monaſteries were forged in Latin by the Saxon monks for the preſent ſecurity of their poſſeſſions, in conſequence of that averſion which the Normans profeſſed to the Saxon tongue. Even children at ſchool were forbidden to read in their native language, and inſtructed in a knowledge of the Norman only. In the mean time we ſhould have ſome regard to the general and political ſtate of the nation. The natives were ſo univerſally reduced to the loweſt condition of neglect and indigence, that the Engliſh name became a term of reproach: and ſeveral generations elapſed, before one family of Saxon pedigree was raiſed to any diſtinguiſhed honours, or could ſo much as attain the rank of baronage. Among other inſtances of that abſolute and voluntary ſubmiſſion, with which our Saxon anceſtors received a foreign yoke, it appears that they ſuffered their hand-writing to fall into diſcredit and diſuſe; which by degrees became ſo difficult and obſolete, that few beſide the oldeſt men could underſtand the characters. In the year 1095, Wolſtan, biſhop of Worceſter, was depoſed by the arbitrary Normans: it was objected againſt him, that he was "a ſuperannuated Engliſh idiot, who could not ſpeak French." It is true, that in ſome of the monaſteries, particularly at Croyland and Taviſtock, founded by Saxon princes, there were regular preceptors in the Saxon language; but this inſtitution was ſuffered to remain after the conqueſt, as a matter only of intereſt and neceſſity. The religious could not otherwiſe have underſtood their original charters. William's ſucceſſor, Henry I., gave an inſtrument of confirmation to William archbiſhop of Canterbury, which was written in the Saxon language and letters.

The Saxon was probably ſpoken in the country, yet not without various adulterations from the French: the courtly language was French, yet perhaps with ſome veſtiges of the vernacular Saxon. But the nobles, in the reign of Henry II. conſtantly ſent their children into France, leſt they ſhould contract habits of barbariſm in their ſpeech, which could not have been avoided in an Engliſh education. From the declenſion of the barons, and prevalence of the commons, moſt of whom were of Engliſh anceſtry, the native language of England gradually gained ground: till at length the intereſt of the commons ſo far ſucceeded with Edward III., that an act of parliament was paſſed, appointing all pleas and proceedings in law to be carried on in Engliſh: although the ſame ſtatute decrees, in the true Norman ſpirit, that all ſuch pleas and proceedings ſhould be enrolled in Latin. Yet this change did not reſtore either the Saxon alphabet or language. It aboliſhed a token of ſubjection and diſgrace: and, in ſome degree, contributed to prevent further French innovations in the language then uſed, which yet remained in a compound ſtate, and retained a conſiderable mixture of foreign phraſeology. In the mean time, it muſt be remembered, that this corruption of the Saxon was not only owing to the admiſſion of new words, occaſioned by the new alliance, but to changes of its own forms and terminations, ariſing from reaſons which we cannot inveſtigate or explain. Warton's Engliſh Poetry, vol. i. See Anglo-Saxon and English.

Saxon *Blue.* See Blue.

Saxon *Green*, in *Dyeing*. See Green.

Saxon *Verſion.* See Bible.

SAXONIA, Hercules, in *Biography*, was born at Padua in the year 1551, of a family which had been already diſtinguiſhed in the ſcience of medicine; his father, Victor, and his paternal uncles, Jerom and Francis, having held a high medical reputation at Venice and Padua. Following their example, Hercules decided to purſue the ſame profeſſion, and obtained the degree of doctor in his native univerſity. Before the year 1574 he was appointed to lecture on logic; but in 1579 he removed to Venice, for the purpoſe of practiſing his profeſſion, and he ſucceeded ſo well, that in a few years he attained the higheſt reputation, and had more applications from the ſick than he could attend to. It has been ſaid, that even ſo early as 1573 he was ſent for to Vienna, with Mercurialis, to attend the emperor Maximilian II. in his illneſs; but the probability is, that a man of two and twenty could not have arrived at that degree of reputation, and that he merely accompanied Mercurialis on his journey thither. After about ten years of laborious practice in Venice, the chair of Capivaccio becoming vacant at Padua, Saxonia was nominated his ſucceſſor. The faculty of Padua welcomed him back to his native univerſity; and he fulfilled the duties of his office with great credit and reputation from the year 1590 till 1607, when he died.

Saxonia left ſeveral works; the firſt of which, "Diſputatio de phænigmis, vulgo veſicantibus, et theriacæ uſu in febribus peſtilentialibus," Patav. 1591, originated from a diſcuſſion with Maſſaria, during the prevalence of an epidemic, when the duke of Urbino had applied to both for their directions. A ſecond work alſo appeared during this conteſt, entitled "De Phænigmis Libri tres. In quibus agitur de univerſa rubificantium natura, &c.; de quorum uſu in febribus peſtilentialibus multa diſputantur," 1593. He next employed his pen on the ſubject of ſyphilis, calling his work, "Tractatus perfectiſſimus de Morbo Gallico, ſeu, de Lue venerea," 1593, which went through ſeveral editions. This was followed ſome time after by "Tractatus triplex, de febrium putridarum ſignis, de pulſibus, et de urinis," Francf. 1600; "De Plica, quam Poloni Guvozdziec, Roxolani Koxtunum, vocant," Pat. 1600; "De pulſibus Tractatus abſolutiſſimus," 1603. And after his death were publiſhed, "Prælectionum Practicarum Libri duo," 1610; and "Opera Practica," 1639, which went through nine ſucceſſive editions from the preſs of Padua, the laſt being printed in 1681. A pupil of his had alſo collected all that he knew of the productions of his maſter, and publiſhed them at Francfort, in 1603, with the title of "Pantheon Medicinæ ſelectum, ſeu, Medicinæ Templum in Libros XI diſtinctum." See Eloy Dict. Hiſt. de la Médecine.

SAXONS, in *Hiſtory*, the denomination of a people who began to moleſt Britain ſoon after the dominion of the Romans terminated, and in whoſe fortunes we are peculiarly intereſted. We ſhall therefore devote a ſmall part of our work to the curſory hiſtory of theſe people before and after their invaſion and occupation of Britain. We are enabled to do this with the greater facility by having acceſs to the valuable hiſtory of the Anglo-Saxons, written by our reſpected friend Sharon Turner, eſq. the ſecond edition of which is now before us.

The Anglo-Saxons, who tranſported themſelves from the Cimbric peninſula and its vicinity in the fifth and ſixth centuries into England, were branches of the grand Saxon confederation, which, from the Elbe, extended itſelf at laſt to the Rhine. The hoſtilities of theſe formidable people had long diſtreſſed the weſtern regions of Europe, and when the Gothic nations overran the moſt valuable provinces of Rome, the Anglo-Saxons invaded Britain ſoon after the Romans quitted it. As theſe new conquerors advanced, their laws, language, manners, government, and barbariſm overſpread the land.

The Saxon name, which became, on the continent, the appellation of a confederacy of nations, denoted at firſt a ſingle ſtate. The firſt writer who ſeems to have mentioned the Saxons, was Ptolemy, the famous Alexandrian geographer. From him we learn, that before the year 141 after Chriſt, a people, called Saxones, inhabited a territory at the N. ſide of the Elbe, on the neck of the Cimbric Cherſoneſus, now Jutland, and three ſmall iſlands, at the mouth of this river: but they were at this period of no great importance. Attempts have been made to trace their hiſtory beyond this period; and in doing this, many wild and inconſiſtent fictions have been framed. Our author inveſtigates their origin among the Scythians, and is of opinion, that the Sakai, or Sacæ, a powerful tribe of this nation, were their progenitors. Sakai-ſuna, or the ſons of the Sakai, abbreviated into Sakſun, which has the ſame ſound with Saxon, ſeems to be, as he conceives, a reaſonable etymology of the word Saxon. Strabo places the Sacæ eaſtward of the Caſpian, and he leads us to conclude, that in ſome of their hoſtile excurſions, they ſeized on Bactriana and the moſt fertile part of Armenia, which from them derived the name of Sacaſſena, and that they reached the Cappadoces on the Euxine. (See Sacæ.) Some of theſe marauding Sacæ or Sacaſſani might probably be driven forward to the weſtern coaſts of Europe, where they were found by Ptolemy, and whence they moleſted the Roman empire in the third century of our era. The three iſlands which the Saxons occupied in the time of Ptolemy were thoſe that are now denominated North Strandt, Buſen, and Heiligland. On the continent they alſo occupied a territory, which was ſituated on the weſtern ſide of the Cimbric peninſula, between the Elbe and the Eyder. From theſe countries our Saxon anceſtors made their incurſions in the time of Ptolemy, and from them they ſpread terror through Europe, when their attention became directed to maritime depredations. The ſecond writer who mentions the Saxons was Eutropius, who lived above a century after Ptolemy. In accounting for the rebellion of Carauſius, and his aſſumption of the purple, he ſtates the Saxons to have united with the Franks, and to have become formidable to the Romans by their piratical enterpriſes. During the interval that had elapſed from the age of Ptolemy, the Saxons had proſpered; and their proſperity ſeems to have ariſen from the repulſe of the Romans from the Elbe to the Rhine, from the riſe of the Franks, A.D. 235—240, and from their own application to maritime expeditions. In the beginning of the 4th century the Saxon fleets acquired an addition of ſtrength from the union of other ſtates, and their league with concurring princes was extended. The Chauci led the way; the Friſii followed; and at length the Chamavi, the Batavi, the Toxandri, and Morini, became their allies. The Cimbri, the Jutes, the Angles, and others, added their numbers to the formidable league, which began to diſſolve after their expedition to Britain. As the boundaries of the Saxon ſtates enlarged with their leagues, they comprehended the population between the Elbe and the Weſer; from the Weſer they reached to the Ems, and diffuſed themſelves to the Rhine. The allies of the Saxons, however, with whom the hiſtory of Britain is moſt connected, were the Jutes and the Angles. At length, A.D. 368, the Saxons with their allies aſſaulted the maritime coaſts of Britain; but were defeated by Theodoſius. In the year 370 they were repulſed by the Romans on the continent; but before the lapſe of many years, they renewed their depredations and defeated Maximus. At the cloſe of the fourth century they exerciſed the activity and reſources of Stilicho; but in conſequence of the prevailing triumphs of Charlemagne, the celebrity and power of the Saxons on the continent ceaſed. Soon after the period above-mentioned, the Saxon invaſion of England occurred. In the year 449 Hengiſt and Horſa made a deſcent on the Britiſh coaſt; and the achievement of Hengiſt was a beacon of emulation to the maritime part of the Saxon confederation, and aſſiſted to convert it from naval piracy to views of regular conqueſt in Britain. Ella was the next Saxon chieftain, or king, who invaded Britain; and though he with his three ſons came only with three ſhips to the Suſſex coaſt, they ſucceeded in gaining a ſettlement, and by ſlow degrees they enlarged their conqueſts on the coaſt. Eighteen years after Ella's arrival, another powerful colony of Saxons arrived in the iſland, under the auſpices of Cerdic, who, as well as Hengiſt and Horſa, derived his genealogy from Woden. Under Cerdic, the Iſle of Wight, Hampſhire, and Buckinghamſhire witneſſed the triumphs of the Saxons; and Somerſetſhire, Wiltſhire, and Oxfordſhire experienced thoſe of his ſon. At length they eſtabliſhed a kingdom ſo powerful as to abſorb every other ſovereignty. The progreſs of Cerdic, however, was long reſiſted by Arthur the Britiſh chieftain; and this brave reſiſtance on the part of the Britons was celebrated by the bards of Bretagne, ſo that Arthur became the popular hero.

About fifty-two years after the expedition of Cerdic, and almoſt a century after the landing of Hengiſt on the iſland, another fleet of warriors directed their courſe to the North. Thoſe who had hitherto arrived were Jutes and Saxons; but the aſſociates of Ida were Angles; and as he came with forty veſſels, this was by far the moſt formidable emigration. The progreſs of the Angles in the North was ſlow; but at length Ida's conqueſts eſtabliſhed them in Bernicia, and they were maintained by his ſons. At ſome period near the year 500, the Eaſt Anglian ſtate was colonized, though the monarchy did not appear till after the year 530. The various parts of Britain, into which the Saxons and their confederates ſpread themſelves, were as follow, according to the ſtatement of the Iriſh primate, Uſher. The Jutes poſſeſſed Kent, the Iſle of Wight, and that part of the coaſt of Hampſhire which fronts it. The Saxons were diſtinguiſhed from their ſituation into South Saxons, who peopled Suſſex; Eaſt Saxons, who occupied Eſſex, Middleſex, and the ſouth part of Hertfordſhire; and Weſt Saxons, who fixed themſelves in Surrey, Hampſhire (the coaſt of the Jutes excepted), Berks, Wilts, Dorſet, Somerſet, Devon, and that part of Cornwall which the Britons were unable to retain. The Angles were divided into Eaſt Angles, in Norfolk, Suffolk, Cambridge, the Iſle of Ely, and part of Bedfordſhire; and Middle Angles in Leiceſterſhire, which appertained to Mercia. The Mercians were divided by the Trent into South Mercians, in the counties of Lincoln, Northampton, Rutland, Huntingdon, the north parts of Bedfordſhire and Hertfordſhire, Bucks, Oxfordſhire, Glouceſterſhire, Warwickſhire, Worceſterſhire, Herefordſhire, Staffordſhire, and Shropſhire; and North Mercians, who inhabited the counties of Cheſter, Derby, and Nottingham. The Northumbrians were the Deiri, in Lancaſter, York, Weſtmoreland, Cumberland, and Durham; and the Bernicians in Northumberland, and the ſouth of Scotland, between the Tweed and the Frith of Forth.

After the exertions of the Britons to repel the invaders of their country had failed, eight Anglo-Saxon governments were eſtabliſhed in the iſland. But it was by a ſlow conqueſt that the nations, compriſed under the title of Anglo-Saxons, poſſeſſed themſelves of the different diſtricts of the iſland; and almoſt a century and a half lapſed from the firſt arrival of Hengiſt to the full eſtabliſhment of the octarchy. In their progreſs the Anglo-Saxons did not extirpate the Britons; but as they wanted huſbandmen, artiſans, and menials for domeſtic purpoſes, the majority of the Britiſh population was preſerved to be uſeful to their conquerors. Some Britons, who diſdained the Saxon yoke, emigrated to other countries: Armorica or Bretagne afforded refuge to many; Cornwall and Wales received a conſiderable acceſſion of population: and ſome migrated to Holland. The moſt indignant of the Cymry retired into Wales.

As ſoon as the Anglo-Saxons were releaſed from the preſſure of the Britons, and began to feel themſelves ſecure and ſtrong in the population of their provinces, and in the ſubmiſſion of the natives, their propenſity to war, and their ambitious deſire of power, excited them to turn their arms upon one another. From Hengiſt to Egbert talents were never wanting on ſome of the Anglo-Saxon thrones; the reſult was, that the Anglo-Saxons, though they fluctuated in the proſperity of their ſeveral diſtricts, yet, conſidered as a nation, they improved rapidly in civilization and power. Ina's laws contributed in a high degree to his reputation, and his reign was long and proſperous. It is beſides our purpoſe to give a detail of the ſucceſſion of the Anglo-Saxon kings, and it is much more inconſiſtent with our limits to recite even the principal events that occurred during their reſpective reigns. This is the leſs neceſſary, as ſome brief notices of them will be found under the biographical articles in this work. It will be ſufficient to obſerve in this place, that the Anglo-Saxon dynaſty terminated with Harold II. and the advancement of William of Normandy to the Engliſh throne.

The character of the ancient Saxons diſplayed the qualities of fearleſs, active, and ſucceſsful pirates. Thus they are deſcribed by Oroſius, Julian, and Zoſimus: their ferocious qualities were nouriſhed by the habit of indiſcriminate depredation; they traverſed both land and ſea with a view to plunder, and in purſuit of this object they were no leſs heedleſs of their own lives, than unfeeling and cruel with reſpect to thoſe of others. Their perſons were of the largeſt ſize. As to their dreſs, their looſe linen veſts were adorned with trimming, woven in different colours: their external garment was the ſagum, or cloak, and they had ſhoes. Their females had gowns, and ſeveral ornaments for the arms, hands, and neck. Their armour conſiſted of ſhields, long lances, and large knives or crooked ſwords by their ſides, and their horſemen uſed iron ſledge hammers or mallets. The government of the continental Saxons in the eighth and preceding centuries was an ariſtocracy of chieftains, and they had no kings but in time of war, who laid aſide their power when peace was re-eſtabliſhed. When they viſited England, they were conducted and governed by their war-kings; and theſe they were under a neceſſity of continuing until a permanent, though limited, monarchy was eſtabliſhed. Among the ancient Saxons, there were four orders of men; the Etheling or noble, the free man, the freed-man, and the ſervile. The nobles were jealous of their race and rank; their intermarriages were reſtricted to one another, and the ſevereſt penalties were annexed to a violation of this order. Of their ancient laws, in their Pagan ſtate, little certain is known. It appears, however, that pecuniary compenſation was their general mode of redreſſing perſonal injuries and of puniſhing criminal offences. Their ſeverity againſt adultery was perſonal and ſanguinary; if a woman became unchaſte, ſhe was compelled to hang herſelf, her body was burnt, and the adulterer was executed over her aſhes; or elſe, a company of females whipped her from diſtrict to diſtrict, and, dividing her garments to the girdle, they pierced her body with their knives. They drove her, thus bleeding, from their habitations; and whereſoever ſhe went, freſh parties of women renewed the cruel puniſhment, and continued it till ſhe expired. In their marriages they allowed a ſon to wed his father's widow, and a brother his ſiſter-in-law. Among the Friſians, who were confederates of the Saxons, a perſon guilty of ſacrilege, or of breaking into a temple and taking away any of the ſacred things, was ordered to be led to the ſea, and in the ſand which the ſea uſually covers, to have his ears cut off, to be caſtrated, and to be immolated to the gods whoſe temples he had violated.

The moſt ancient religions of the world appear to have been pure theiſm, without idols and temples. By degrees the Deity was repreſented by a variety of ſymbols, among which the principal were the heavenly bodies; and in proceſs of time heroes and kings were exalted into gods. At length the air, the ſea, the rivers, the woods, and the earth, were ſo ſtocked by the creative fancy with divinities, that it was more eaſy, as an ancient ſage remarked, to find a deity than a man. When the Anglo-Saxons ſettled in Britain, they ſeem to have abandoned the cuſtoms of their anceſtors, of which indeed the traditionary account is very imperfect; and they then had idols, altars, temples, and prieſts; their temples were encompaſſed with incloſures; they were profaned by throwing lances into them; it was not lawful for a prieſt to bear arms, or to ride, except on a mare. Theſe particulars are detailed on the authority of the Venerable Bede. Some of the objects of their adoration are found in their names for the days of the week; and they are as follow:

Sunday,	or	Sunnan dæg,	is the	Sun's day.
Monday,	or	Monan dæg,	is the	Moon's day.
Tueſday,	or	Tiwes dæg,	is	Tiw's day.
Wedneſday,	or	Wodnes dæg,	is	Woden's day.
Thurſday,	or	Thunres dæg,	is	Thunre's day.
Friday,	or	Frige dæg,	is	Friga's day.
Saturday,	or	Seternes dæg,	is	Seterne's day.

Of the ſun and moon it is curious to remark, that their ſun was a female deity, and their moon was of the male ſex. Woden was the great anceſtor from whom they deduced their genealogies, and he was the predominant idol of the Saxon adoration, though little is known of him, as diſtinct from the Odin of the Danes and Norwegians. (See ODIN.) The names of two of the Anglo-Saxon goddeſſes have been tranſmitted to us by Bede: he mentions *Rheda*, to whom they ſacrificed in March, hence denominated Rehd-monath, and *Eoſtre*, whoſe feſtivities were celebrated in April, called on this account Eoſtre-monath. The idol adored in Heiligland, one of the iſlands occupied by the Saxons, was *Foſete*, which gave name to the place, and was hence called Foſeteſland. That the Angles had a goddeſs called *Hertha*, or mother-Earth, we learn from Tacitus. The Saxons dreaded an evil being, whom they named *Faul:* ſome kind of female power they called an *elf*. They alſo venerated ſtones, groves, and fountains. The continental Saxons reſpected the lady *Hera*, an imaginary being, who was thought to fly about in the air in the week after their Jule, or between our Chriſtmas and Epiphany. Her viſit was followed, as they conceived, by abundance. That the Saxons had many idols is a well-known fact: but it is needleſs to enumerate them. That they had the horrid cuſtom of offering human ſacrifices is unqueſtionable: but whether ſuch ſacrifices were an eſtabliſhed part of their ſuperſtitious ritual, or whether they were merely an occaſional immolation of captives or criminals, is a point which cannot be decided. The latter is thought to be moſt probable. The Saxon idol, whoſe celebrity on the continent was the moſt eminent, was the *Irminſula*, or *Armenſula*. The temple of this idol, which ſtood at Ereſberg on the Dimele, or Merſberg, was ſpacious and magnificent; the image was raiſed upon a marble column; and the predominant figure was an armed warrior; its right hand held a banner, in which a red roſe was conſpicuous; its left preſented a balance: the creſt of its helmet was a cock; on its breaſt was engraven a bear, and the ſhield depending from its ſhoulders exhibited a lion in a field full of flowers. Prieſts of both ſexes attended the temple. The women applied themſelves to divination and fortune-telling; the men ſacrificed, and often intermeddled with political affairs, as their ſanction was thought to inſure ſucceſs. Theſe prieſts named the ſixteen judges, who annually decided the provincial diſputes. In the hour of battle they took their favourite image from its column, and carried it to the field. After the conflict, captives, and the cowardly of their own army, were immolated to the idol. In 772 this venerated object of Saxon ſuperſtition was thrown down and broken, and its fane deſtroyed by Charlemagne. Its immenſe wealth and precious veſſels were diſtributed to the conquerors, or devoted to pious uſes. The ancient Saxons were addicted to the prognoſtication of events by auguries, lots, and omens, and to the practice of various kinds of magic.

In the computation of time our Saxon anceſtors reckoned by nights inſtead of days, and by winters inſtead of years. Their months were governed by the revolution of the moon. They began their year from the day which we obſerve as Chriſtmas day, and in their common years they appropriated three lunar months to each of the four ſeaſons: and when a year of thirteen months occurred, they added the ſuperfluous month to their ſummer ſeaſon.

It has been a ſubject of diſpute whether the Anglo-Saxons had the uſe of letters when they took poſſeſſion of England. Although no ſpecimen of any Saxon writing, anterior to their converſion to Chriſtianity, can be produced, yet ſome reaſons have been alleged in favour of their knowledge of the art of writing in their Pagan ſtate. To this purpoſe it has been urged, that alphabetical characters were uſed by the northern nations on the Baltic, before they received Chriſtianity, and their origin has been aſcribed to Odin, who is ſaid to have ſettled in Saxony before he advanced to the north. Either, it is ſaid, the Pagan Saxons were acquainted with the Runic characters, or they were introduced into the north after the fifth century, when the Saxons came to Britain, and before the middle of the ſixth, when they are mentioned by Fortunatus, which is contrary to the hiſtory and traditions of the Scandinavian nations, and to probability. Moreover, as the Anglo-Saxons were not inferior in civilization to any of the barbarous nations of the north, it cannot be reaſonably ſuppoſed that they were ignorant of Runic characters, if their neighbours uſed them; but, beſides, though the letters of our Saxon MSS. written after their converſion, are undoubtedly of Roman origin, except only two, yet theſe two characters, *viz.* thoſe for *th* and *w*, are allowed by the beſt writers to be of Runic parentage: hence it may be inferred, that the Anglo-Saxons were acquainted with Runic as well as with Roman characters, when they commenced the hand-writing that prevails in their MSS. It is urged further, that if the Saxons had derived the uſe of letters from the Roman eccleſiaſtics, it is probable they would have taken from the Latin language the words they would uſe to expreſs them: other nations, ſo indebted, have done this: but nations who had known letters before they became acquainted with Roman literature would have indigenous terms to expreſs them, and the Saxons have ſuch terms. Upon the whole Mr. Turner is induced to believe, that the Anglo-Saxons were not unacquainted with alphabetical characters when they came into England: but if they had ancient letters, they ceaſed to uſe them after their converſion, with the exception of thoſe for the *th* and the *w*. If, however, the Anglo-Saxons had alphabetical characters, they were much more uſed for divinations, charms, and funeral inſcriptions, than for literary compoſitions.

Mr. Turner proceeds to examine the manners of the Anglo-Saxons after their occupation of England. Having poſſeſſed themſelves of the ſouth part of Britain during the fifth and ſixth centuries, they diſplayed qualities peculiarly inauſpicious to the improvement of intellect and of moral character. They appear to have been bands of fierce, ignorant, idolatrous, and ſuperſtitious pirates, enthuſiaſtically courageous, but habitually cruel. Their improvement in manners and mental aſſociations was very much promoted by the internal ſtate of Britain at the time of their invaſion. What this ſtate was Mr. Turner has particularly deſcribed. He obſerves, "that the firſt great change in the Anglo-Saxons appeared in the diſcontinuance of their piracies. They ceaſed to be the ferocious ſpoilers of the ocean and its coaſts. They became land-owners, agriculturiſts, and induſtrious citizens; they ſeized and divided the acquiſitions of Britiſh influence, and made the commonalty of the iſland their ſlaves. Their war-leaders became territorial chiefs; and the conflicts of capricious and ſanguinary robbery were exchanged for the poſſeſſion and inheritance of property in its various ſorts; for trades and manufactures; for uſeful luxuries, peaceful induſtry, and domeſtic comfort." He proceeds to ſtate, that their tendereſt and moſt helpleſs years were under the care of females; that they had infant baptiſm, which they performed by immerſion; that they uſed the cradle; that they venerated the relationſhip of god-fathers; and that on the death of the father, the children remained under the care of the mother, who was enjoined to provide for them and recompenſed for her trouble. Bede mentions, that their period of infancy ended with the ſeventh year, and that the firſt year of their childhood began with the eighth. As the Anglo-Saxons were not a literary people, their childiſh occupations muſt naturally be the exerciſes of muſcular agility. The names of the Anglo-Saxons were impoſed, in their infancy, by their parents; and theſe names were frequently compound words, rather expreſſive of caprice than of appropriate meaning. Whether the Anglo-Saxons had ſurnames has been a ſubject of diſcuſſion; it appears, however, that additional appellations were occaſionally uſed by them, as mere perſonal diſtinctions; but in the progreſs of civilization, the convenience of a permanent family denomination was ſo generally felt as to occaſion the adoption of the cuſtom; and it is probable that the firſt permanent ſurnames were the appellations of the places of birth, or reſidence, or a favourite anceſtor. (See NAME.) Education among the Anglo-Saxons was, as we may well imagine, in an imperfect ſtate. Some men, however, riſing above the level of the age, endeavoured to recommend the uſe of ſchools. Thus Sigebert, in the ſeventh century, as ſoon as he regained the Eaſt-Anglian throne after his exile in France, eſtabliſhed a ſchool in his dominions for youth to be inſtructed in learning. We find alſo in Alfred's time that moſt of the nobles, and many of the inferior orders, were put under maſters, who taught them both Latin and Saxon books, and alſo writing. Nevertheleſs, the great and powerful undervalued knowledge. The education of the Saxons was much aſſiſted by the emigrations or viſits of Iriſh eccleſiaſtics; and after the prevalence of Chriſtianity, a portion of the youth was taken into the monaſteries. We may obſerve, in general, that the Saxon youth ſeem to have been accuſtomed to habits of docility and obedience. The Anglo-Saxons cultivated both wheat and barley, and reared oxen, ſheep, and ſwine for their food. They uſed likewiſe fowls, deer, goats, and hares; and they alſo fed on various kinds of fiſh, and particularly eels, which, as well as hogs, they uſed in great abundance. Their orchards afforded figs, grapes, nuts, almonds, pears, and apples. Honey appears to have been a favourite diet, and ſalt they uſed in great quantities. Ale and mead were their favourite drinks, and wine was an occaſional luxury. They boiled, baked, and broiled their victuals. In their dreſs they indulged vanity by a variety of ornaments. The ladies had coſtly necklaces and bracelets, and rings on their fingers. Their hair was twiſted and delicately curled. They alſo ſtudied to improve their natural complexion by paint. The men alſo intruded on the province of the females, by uſing ſimilar ornaments, ſuch as necklaces of gold and precious ſtones, bracelets on their arms, and rings on their fingers. They had alſo ſilk, linen, and woollen garments. The hair of the men was divided from the crown to the forehead, and combed down the ſides of the head in waving ringlets: their beards were continued whiſkers on each ſide, meeting the hair from the chin, but there dividing, and ending in two forked points. Young men, and ſometimes ſervants, are repreſented without beards; and they were forbidden to the clergy. Their ſhoes were tied with thongs. Their garments were lined with furs made from ſables, beavers, and foxes, or, when they wiſhed to be leſs expenſive, with the ſkins of lambs or cats. Their dwelling-houſes were ſmall and inconvenient, and their furniture rude and coarſe. Some of their tables were very coſtly, being made of ſilver and gold. In their food and convivial entertainments they uſed many expenſive articles, formed of the precious metals. The Anglo-Saxons ſeem to have been acquainted with the precious ſtones and alſo with the odoriferous productions of the Eaſt. They alſo uſed the luxury of hot baths; and it was an indiſpenſible part of hoſpitality to offer to viſitors the refreſhment of waſhing the feet in warm water; and waſhing the feet of the poor was one of the acts of penance to be performed by the rich. At the cheerful meetings of the Anglo-Saxons it was the practice for all to ſing in turn, and for this purpoſe the harp was ſometimes circulated. Dancing, bear-baiting, games at hazard, hunting, hawking, falconry, and fowling, were diverſions to which the Anglo-Saxons were addicted.

Among theſe people females were held in honourable eſtimation. They were allowed to poſſeſs, to inherit, and to tranſmit, landed property; they ſhared in all the ſocial feſtivities; they were preſent at the witena gemot and the ſhire gemot; they were permitted to ſue and be ſued in the courts of juſtice; their perſons, their ſafety, their liberty, and their property, were protected by expreſs laws; and they poſſeſſed all that influence which they will always retain in countries that have the wiſdom and the urbanity to treat them as equal, intelligent, and independent beings. The earlieſt inſtitutions reſpecting the Anglo-Saxon marriages occur in the laws of Ethelbert; and the cuſtomary forms attendant upon their marriage-contracts are more clearly diſplayed to us in the laws of Edmund. Within certain degrees of conſanguinity marriages were forbidden, and ſevere penalties were attached to the violation of female chaſtity. The different claſſes of ſociety among the Anglo-Saxons were ſuch as belonged to birth, office, or property, and ſuch as were occupied by a freeman, a freedman, or one of the ſervile deſcription. It is to be lamented in the review of theſe different claſſes, that a large proportion of the Anglo-Saxon population was in a ſtate of abject ſlavery. They were bought and ſold with land, and were conveyed in the grants of it promiſcuouſly with the cattle and other property upon it; and in the Anglo-Saxon wills theſe wretched beings were given away preciſely as we now diſpoſe of our plate, our furniture, or our money. At length the cuſtom of manumiſſion, and the diffuſion of Chriſtianity, meliorated the condition of the Anglo-Saxon ſlaves. Sometimes individuals, from benevolence, gave the ſlaves their freedom; ſometimes piety procured a manumiſſion. But the moſt intereſting kind of emancipation appears in thoſe writings which announce to us, that the ſlaves had purchaſed their own liberty, or that of their family. The Anglo-Saxon laws recogniſed the liberation of ſlaves, and placed them under legal protection. The liberal feelings of our anceſtors towards their enſlaved domeſtics, are not only evidenced in the frequent manumiſſions, but alſo in the generous gifts which they appear to have made them. The grants of lands from maſters to their ſervants were very common. The gilds, or ſocial confederations, in which the Anglo-Saxons choſe to arrange themſelves, were eſtabliſhments that have been particularly noticed in the hiſtory of theſe people. Theſe gilds are ſometimes alluded to in the laws. Such aſſociations were a kind of clubs. In mercantile towns and ſea-ports there were alſo gilds, or fraternities of perſons conſtituted for the purpoſe of carrying on more ſucceſsful enterpriſes in commerce. The tradeſmen of the Anglo-Saxons were, for the moſt part, men in a ſervile ſtate: but by degrees the manumiſſion of ſlaves increaſed the number of the independent part of the lower orders. Beſides thoſe perſons who made particular trades their buſineſs, ſome of the clergy laboured to excel in the mechanical arts. And the fortunate connection which Chriſtianity eſtabliſhed between the clergy of Europe favoured the advancement of all theſe arts. The external commerce of theſe ancient times was reſtricted; becauſe imperfect civilization, and the poverty of a great body of the population, prevented an extenſive demand for foreign commodities. At length commerce became more general; public markets were eſtabliſhed in various parts of England; and laws were enacted for the protection and encouragement of buyers and ſellers. We muſt not forbear to mention that hoſpitality was exerciſed with circumſtances of peculiar attention and kindneſs. Piracy was gradually reſtrained, and commerce became honourable; and in time, kings became the patrons of merchants. It is ſtated, that after the tenth century, piracy became diſreputable, and in every reign after that time it approached nearer to its extinction, until it was completely ſuperſeded by the influence of commerce, the firmer eſtabliſhment of legal governments, improved notions of morality, and the experience of the ſuperior comforts of ſocial order, induſtry, and peaceful purſuits.

The Saxon money was ſometimes reckoned by pennies, but the name for money moſt frequently occurring in the charters is the mancus, the value of which was ſix ſhillings, or thirty pennies, five pennies making one ſhilling. But by the laws of Alfred there were two ſorts of pennies, the greater and the leſs. The money mentioned in our earlieſt law conſiſts of ſhillings, and a minor ſum called ſcætta. In the laws of Ina the pening occurs, and the pund as a weight. In thoſe of Alfred the pund appears as a quantity of money, as well as the ſhilling and the penny; but the ſhilling is the uſual notation of his pecuniary puniſhments. In his treaty with the Danes, the half mark of gold, and the mancus, are the names of the money; as is the ora in the Daniſh compact with Edward. In the laws of Ethelſtan, we find the thrymſa, as well as the ſhilling and the penny; the ſcætta and the pund. The ſhilling, the penny, and the pound, appear under Edgar. In the time of Ethelred, the pound is frequently the amount of the money noticed. The ſhilling and penny, the healf-marc, and the ora, alſo occur. In the charters we find pennies, mancuſa, pounds, ſhillings, and ſicli, mentioned. As no Anglo-Saxon gold coins have reached modern times, though we have numerous ſpecimens of their ſilver coinage, it is preſumed by antiquarics that none were ever made; yet it is certain that they had plenty of gold, and it perpetually formed the medium of their purchaſes or gifts. Mr. Turner is of opinion, that in the concerns of life gold was uſed, in an uncoined ſtate, which was ſometimes the caſe with ſilver: ſo that there were two ſpecies of money, the coined and uncoined. Our author thinks that the mancus was not a coin, and he conſiders the two ſorts of pennies as the only coins of the Anglo-Saxons above their copper coinage, and all their other denominations of money, as weighed or ſettled quantities of uncoined metal. That money was coined by the Anglo-Saxons in the octarchy, and in every reign afterwards, is clear, as Mr. Turner apprehends, from thoſe which remain. Moſt of them have the mint maſter's name; nor does it appear certain, that they had coined money before their invaſion of England, and converſion. The ſcyllinga our author preſumes to have been a quantity of ſilver, which, when coined, yielded five of the larger pennies, and twelve of the ſmaller. The ſceat denoted a definite piece of metal originally in the uncoined ſtate, and the ſceat and the ſcyllinga ſeem to have been the names of the Saxon money in the Pagan times before the Roman and French eccleſiaſtics had taught them the art of coining. The value of the ſceat in the time of Ethelbert ſeems to have been the twentieth part of a ſhilling. About three centuries later it was raiſed in value, and appears to be like one of their ſmaller pennies; for the laws of Ethelſtan gave 250 ſceatta to a pound, or 12½ to a ſcyllinga. Perhaps we may juſtly ſtate the ſceat to have been the ſmaller penny, and the pening, properly ſo called, to have been the larger one. The word pening, pfening, or penning, occurs in many countries for coin; and if we conſider the Saxon pening as their only ſilver coin, it may be derived from the verb *punian*, to beat, which may be applied to metal coined. There has been a variety of opinions about the value of the Saxon pound. In the time of the Confeſſor it conſiſted of 20 ſolidi or ſhillings; but Dr. Hickes contends that the Saxon pound conſiſted of 60 ſhillings; and other authors aſſert, that the pound contained only 48 ſhillings. The ſtyca, the helfling, and the feorthling, were copper monies. The thrymſa is reckoned by Dr. Hickes to be the third part of a ſhilling, or four-pence. From other paſſages the thrymſa and the ſceatta appear to have been the ſame. The privilege of coining belonged to ſeveral places, and to ſome eccleſiaſtical perſons, as well as the king.

Although the northern nations, at one period, burnt their dead, yet the cuſtom of interring the body was eſtabliſhed among the Anglo-Saxons at the era when their hiſtory began to be recorded by their Chriſtian clergy, and was never diſcontinued. Their common coffins were wood: and the moſt coſtly were ſtone. The ſaul-ſceat, or the payment of the clergy on death, was a very general practice. Several of their gilds were formed chiefly in order to provide a fund for this purpoſe; this alſo appears in all the wills.

The Anglo-Saxons cultivated the art of huſbandry with ſome attention. Their fields and lands were ſeparated by hedges and ditches: they had common of paſture attached to the different portions of land which they poſſeſſed, and had other extenſive diſtricts laid out in meadow. Every eſtate had alſo an appropriated quantity of wood. They had ploughs, rakes, ſickles, ſcythes, forks, and flails, very like thoſe that have been commonly uſed in this country. They had alſo carts and waggons: and their wind-mills and water-mills are frequently mentioned. Their woods were an object of legiſlative attention, and they were very careful of their ſheep; and it was an expreſs law, that the value of a ſheep ſhould be one ſhilling until a fortnight after Eaſter. Saltpans and alſo fiſheries were often encouraged in grants of lands. Vineyards, gardens, and parks are frequently mentioned. With regard to the tenures of land, it appears from Domeſday book that of ſome lands the king was the chief proprietor; of others, the biſhops and abbots; and of others, ſeveral earls and perſons of inferior dignity. Of the tenures which appear from the Anglo-Saxon grants, the firſt that may be noticed is that of pure freehold of inheritance, unconnected with any limitation or ſervice. Freehold eſtates alſo occur, made ſubject to the three great ſervices to which almoſt all lands were liable. In theſe caſes the duty of military expedition, and bridge and caſtle-work, were expreſsly excepted. For other tenures we refer to the work now cited.

The oldeſt Saxon grants which are now in our poſſeſſion contain reſervations of ſervices which the poſſeſſors of the land had to perform; and from theſe we perceive, that certain burdens, varying in kind and quantity, were attached to eſtates in every age, with ſome few exceptions. The three common labours, or univerſal neceſſities, as they are called, were the military ſervice, or "fyrd-færelde," to which all the Saxon lands were ſubject, thoſe excepted which the king alone, or the king with the conſent of his witena, exempted from the obligation; and this ſervice conſiſted in providing a certain number of armed men, proportioned to the rated quantity of land, who were to attend the king or his officers on expeditions made for the public ſafety, or againſt invading enemies: the "bryge-geweorc," and the "weal" or "fæſten-geweorc," which were the conſtruction or reparation of bridges and fortreſſes, or walls. Theſe three great ſervices have been called by later writers the "trinoda neceſſitas;" and beſides theſe, there were many other burdens to which the landed intereſt was more or leſs liable in the hands of ſub-proprietors. Accordingly, when the original proprietors aliened or demiſed their lands to others, they annexed a variety of conditions to their grants, which ſubſequent transfers either repeated or diſcharged. We may here remark, that the Saxon deeds of conveyance had no wax-ſeals: theſe were introduced by the Norman conqueſt. See SEAL.

In treating of the Anglo-Saxon government, the firſt object of conſideration is the cyning, or king, who, without concentrating in himſelf the deſpotiſm of an eaſtern monarch, was yet elevated far above the reſt of the nation in dignity, property, and power. The firſt cynings of the Anglo-Saxons ſeem to have been their war-kings, continued for life, whoſe crown was not hereditary, but elective. The cyning was elected by the witena-gemot, which was held on the demiſe of the preceding ſovereign. In the greateſt number of inſtances, however, the witena-gemot, in their election, followed the rule of hereditary ſucceſſion. This power of the witena-gemot was terminated by the Norman conqueſt, when the crown was changed from an elective to an hereditary ſucceſſion. The Anglo-Saxon queen was crowned, as well as the king, until the reign of Egbert, when this honour was taken from her; but it was ſoon reſtored, for Ethelwulph, on his ſecond marriage, permitted his queen, Judith, to be crowned. In Alfred's time the diſuſe of the coronation continued; but by the time of the ſecond Ethelred it was reſtored. The queen's name is joined with the cyning's in ſome charters, and it is not unuſual to find them ſigned by her: ſhe had her ſeparate property and officers of her own houſhold. The king's ſons had land appropriated for them, even though under age. The power and prerogative of the Anglo-Saxon cyning were progreſſively acquired: much of his power depended at firſt on his perſonal character and talents; and this power afterwards naturally increaſed. The crown was a permanent eſtabliſhment, which it was the intereſt of every one but the ſuperior nobles to maintain and to aggrandize, till its power became formidable enough to be felt in its oppreſſions. Its domains were increaſing by every ſucceſsful war; and its revenue, privileges, and munificence, were perpetually adding to its wealth and influence. In proceſs of time, when the converſion of the iſland was completed by the zeal of the pope, and an hierarchy was eſtabliſhed, the kingly power received great ſupport and augmentation from the religious veneration with which the clergy ſurrounded it. The moſt ancient ſpecimens of legiſlation which remain are the laws of Ethelbert, the firſt Chriſtian king of Kent, who was converted about the year 600. In theſe the cyning appears already diſtinguiſhed by ſuperior rank and privileges. In the laws of Ina the cyning is mentioned in a ſtyle of authority very much reſembling that of ſubſequent ſovereigns. The epithets given to the king by the popes, the high titles they aſſumed, and the prerogatives and influence which they exerciſed, concurred to exalt his aggrandizement. On the diſſolution of the octarchy, his property in every part of England was very extenſive. His revenues were very conſiderable; as they were the rents and produce of his lands in demeſne; cuſtoms in the ſeaports; tolls in the markets, and in the cities on ſales; duties and ſervices to be paid to him in the burghs, or to be commuted for money; wites, or penalties and forfeitures, which the law attached to certain crimes and offences; heriots from his thanes, and various payments and benefits ariſing to him on the circumſtances ſtated in the laws. Nevertheleſs, all the prerogatives and rights of the Anglo-Saxon cyning were definite and aſcertained. They had been eſtabliſhed by law or cuſtom, and could be as little exceeded by the ſovereign as withheld by his people; ſo that they were not arbitrary privileges of an unknown extent. The military force, whenever it was aſſembled, was under the command of the king, but it was rather a militia than a regular army. For an account of the *witena-gemot*, we refer to that article. The official dignities of the Anglo-Saxons were as follow. The *ealdorman*, who was the higheſt officer in the kingdom, but in rank inferior to an etheling: he was the chief of a ſhire, and was one of the witena-gemot: he ranked with a biſhop, and preſided with him at the ſcire-gemot and the folc-gemot: he had great civil powers in adminiſtering juſtice, and alſo enjoyed high military authority. The *eorl* is alſo a dignity recognized in our earlieſt laws. It appears in thoſe of Ethelbert, who died in 616, and is mentioned in a charter, dated 680. He is alſo noticed in the laws of Alfred, Edward, Ethelſtan, and Edgar. In the latter part of the Anglo-Saxon period, the title ealdorman ſeems to have been ſuperſeded by that of eorl. The term *heretoch* implies the leader of an army, and *hold* is mentioned as a dignity in Æthelſtan's laws. The *gerefas* were officers appointed by the executive power, and in rank inferior to the eorl or ealdorman; and they were judicial officers of various kinds, and were made reſponſible for their official conduct. The *thegns* were in rank below the eorls and ealdormen: they formed a ſpecies of nobility peculiar to thoſe ancient times, which was attainable even by perſons of the ſervile claſs; but it was eſſential to the dignity of a thegn, that he ſhould be a landed proprietor. The thegns were of two deſcriptions; *viz.* the king's thegns, and the inferior thegns, who were very numerous. The thegn ſeems to have been a military noble; thegn being a Saxon word correſponding to *miles;* the tenure of five hides of land was eſſential to this dignity; military ſervice was attached to it; and the thegns were judicial magiſtrates, and aſſiſted at the ſhire-gemots.

Our author has traced the progreſs of Saxon legiſlation in its relation to ſome of the principal offences, *viz.* homicide, perſonal injuries, theft, and adultery. The Saxons conſidered homicide as a public as well as a private wrong: hence, beſides the redreſs appointed to the family of the deceaſed, or "were," another pecuniary fine was impoſed on the murderer, which was called the "wite." This ſatisfaction to the community was paid to the preſiding magiſtrate, and varied according to the dignity of the perſon in whoſe juriſdiction the offence was committed. In the firſt Saxon laws that were committed to writing, or which have deſcended to us, and which were eſtabliſhed in the beginning of the ſeventh century, murder appears to have been only puniſhable by the were and wite, provided the homicide was not in the ſervile ſtate. In the laws of Ethelbert, the were ſeems to have been uniform. The differences of the crime ariſing from the quality of the deceaſed, or the dignity of the magiſtrate within whoſe juriſdiction it occurred, or the circumſtances of the action, were marked by the differences of the wite rather than of the were. As the order and civilization of the Anglo-Saxon ſociety increaſed, human life acquired an increaſed value, and the penalties of its deprivation were augmented. In the days of Ina, the were, or protecting valuation of an individual's life, was not uniform. The population was arranged into claſſes, and each claſs had an appropriated were. Rank and property ſeem to have been the criterion of the eſtimation. The wealthier a man was, the more precious his life was deemed. This method of regulating the enormity of the crime by the property of the deceaſed was highly barbarous. It diminiſhed the ſafety of the poor, and gave that ſuperior protection to wealth which all ought equally to have ſhared. The were, or compenſatory payment, ſeems to have been made to the relations of the defunct. If the deceaſed was in a ſervile ſtate, the compenſation ſeems to have become the property of the lord. On the murder of a foreigner, two-thirds of the were went to the king, and one-third only to his ſon or relations; or if no relations, the king had one-half, and the gild-ſcipe, or fraternity to which he was aſſociated, received the other. The members of theſe gild-ſcipes were made to a certain degree reſponſible for the good conduct of one another, and therefore they were, in fact, ſo many bail for each other. This principle was ſo far extended, that by Ina's law every one who was in the company where a man was killed, was required to juſtify himſelf from the act, and all the company were required to pay a fourth part of the were of the deceaſed. The ſame principle was eſtabliſhed by Alfred in illegal aſſociations. Excuſable homicide was not allowed to be done with impunity. If a man ſo carried a ſpear as that it ſhould deſtroy any individual, he was made amenable for the were, but excuſed from the wite.

In the reign of Edmund, an important improvement in this branch of legiſlation took place. The legal ſeverity againſt murder was increaſed on the head of the offending individual; but his kindred were guarded from the revenge of the family of the deceaſed. Although the wite was the whole penalty exacted by ſociety to itſelf for murder, and the were the whole pecuniary compenſation that was permitted to the family, yet we are not to ſuppoſe that murder was left without any other puniſhment. The relations of the deceaſed avenged themſelves, if they could, on the murderer, or his kinſmen. The law did not allow it; but as all that the law exacted was the fine and the compenſation, individuals were left at liberty to glut their revenge, if they choſe to pay for it. Nevertheleſs this ſpirit of revenge was early reſtricted. Ina's laws, and alſo thoſe of Alfred, ſerved to reſtrain it; and Edmund I. checked it with marked ſeverity. In the adjuſtment of the compenſation allotted to "perſonal injuries," ariſing from what modern lawyers would call aſſault and battery, the Saxon legiſlators were anxious to diſtinguiſh between the different wounds to which the body is liable, and which their laws lead us to conclude they frequently ſuffered. In judging of their ſcale of pecuniary compenſations by modern experience, there ſeems to be a groſs diſproportion, not only between the injury and the compenſation, but alſo between the different claſſes of compenſation. Alfred made ſome difference in theſe compenſations, and he alſo appointed penalties for other perſonal wrongs. "Theft" appears to have been conſidered as the moſt enormous crime, and was, as ſuch, ſeverely puniſhed. It was made felony, conſidered as a forfeiture of goods and chattels, by the Anglo-Saxons in their earlieſt law; for if a freeman ſtole from a freeman, the compenſation was to be threefold; the king had the wite, and all his goods: but whilſt a freeman's theft was to be atoned for by a triple compenſation, the ſervile were only ſubjected to a twofold retribution. The puniſhment of theft was ſoon extended farther; and, indeed, the Saxon legiſlators were never weary of accumulating ſeverities againſt thieves. To other penalties inflicted by the laws of Wihtræd and of Ina, the amputation of the hand and foot was ſoon added. In the reign of Ethelſtan, a milder ſpirit introduced a principle, which has ever ſince prevailed in our criminal juriſprudence; and this was, that no one ſhould loſe his life for ſtealing leſs than twelve-pence; to which the Saxon legiſlators added a proviſo, which we have dropped, "unleſs he flies or defends himſelf." They alſo introduced another mitigating principle, *viz.* that no youth under 15 ſhould be executed. Againſt "adultery" our Saxon legiſlators enacted penalties, as a public wrong, always puniſhed when it occurred, varying the amount of the penalty according to the rank of the female. Even thoſe of the poor ſervile claſs were protected in their domeſtic happineſs. To invade the connubial rights of one of this deſcription incurred the penalty of a double compenſation. Forcible violation was chaſtiſed more ſeverely. Subſequent laws made adulterers ſubject to eccleſiaſtical cenſure and excommunication, and enjoined the baniſhment of foreigners, who would not abandon ſuch connections. The pecuniary penalties were alſo augmented. In the time of Alfred, ſome new modifications were introduced. He regulated the puniſhment of adultery by the rank of the huſband; and he alſo diſtinguiſhed the different ſteps of the progreſs towards the completion of the crime, aſſigning to each a pecuniary fine. Alfred and his witan provided that if the wife had tranſgreſſed before, the fines of her paramour were to be reduced one-half. The terms "were" and "mund" frequently occur in the Saxon laws: we ſhall here explain their meaning. The were was the legal valuation of an individual, varying according to his ſituation in life. If he were killed, it was the ſum his murderer had to pay for the crime; if he committed crimes himſelf, it was the penalty which, in many caſes, he had to diſcharge. The amount of this were was exactly regulated by a man's condition in life, and it was therefore the meaſure and mark of his perſonal rank and conſequence. The "mundbyrd" was a right of protection or patronage, which individuals poſſeſſed for their own benefit and that of others. The violation of it towards themſelves, or thoſe whom it ſheltered, was puniſhed with a ſeverity varying according to the rank of the patron. The mund was the guardian of a man's houſehold peace, as the were was of his perſonal ſafety.

The ſyſtem of giving "borh," ſureties, or bail, to anſwer an accuſation, ſeems to have been coeval with the Saxon nation, and has continued to our times. In our earlieſt laws it was provided, that the accuſed ſhould be bound over by his ſureties to anſwer the crime of which he was accuſed, and to do what the judges ſhould appoint. Felonies were bailable in the Saxon times. But the moſt curious part of the Saxon "borh" was not the ſureties which they who were accuſed or condemned were to find to appear to the charge, or to perform the judgment pronounced; but it was the ſyſtem that every individual ſhould be under bail for his good behaviour. Nothing ſeems to be more repugnant to the decorous feelings of manly independence than this ſlaviſh bondage and anticipated criminality. Such a law was a libel on human nature, and muſt have created more depravity than it prevented: and this ſeems to have been experienced; for no period more abounded with political or ſocial vices and calamities than the reigns which followed the eſtabliſhment of this law, if we date it from Edgar.

The ſupreme legal tribunal of the Saxons was the *witenagemot;* which ſee. The ſcire-gemot was another tribunal. By the laws of Canute it was ordered, that there ſhould be two ſhire-gemots and three burgh-gemots every year, and the biſhop and the ealdorman ſhould attend them. By the laws of Æthelſtan, puniſhments were attached to thoſe who refuſed to attend gemots. Every man was to have peace in going to the gemot, and returning from it, unleſs he were a thief.

As much of their judicial proceedings reſted on oaths, the puniſhment of perjury was very ſevere. A perjured man was uſually claſſed with witches, murderers, and the moſt obnoxious beings in ſociety; he was declared unworthy of the ordeal; he was diſabled from being a witneſs again; and if he died, he was denied Chriſtian burial.

In the laws of Ina we have a full account of the Anglo-Saxon ordeals, of hot water and hot iron. See Ordeal.

The jury is an inſtitution, the principle of which may be traced, according to Mr. Turner's ſtatement, to the earlieſt Anglo-Saxon times. See Jury.

The poetry of the Anglo-Saxons was of two ſorts; the poems which they compoſed in their own tongue, and the poems which they wrote in Latin. Theſe two kinds of poetry were completely diſtinct from each other;—diſtinct in origin, diſtinct in ſtyle.

The characteriſtics of the Anglo-Saxon native poetry ſeem to be theſe: it conſiſts chiefly of periphraſis, and metaphors expreſſed in a metrical but ſimple arrangement of words, with ſome alliteration. The uſual particles are moſt frequently omitted; and the intended meaning is conveyed in ſhort and contracted phraſe, multiplied by the periphraſis and metaphor. The poſition of the words is forced out of their natural arrangement by a wilful inverſion, and the regular courſe of the ſubject is frequently interrupted by violent and abrupt tranſitions. By theſe peculiarities, which ſeem to be quite artificial, the Saxon poetry is diſtinguiſhed from proſe.

The ſtyle of the Anglo-Saxon poetry ſeems to have been originally the common, imperfect language of the people, in its half-formed and barbarous ſtate; but its metre is the ſimpleſt that can be conceived, and is, indeed, often little elſe than a ſeries of ſhort exclamations. Its inverſions are more artificial. But when muſic was applied to poetry, and men found it beneficial to ſing or recite a chieftain's praiſe, we may conceive, that, to ſecure to themſelves the profits of the profeſſion, ſome little ingenuity was exerted to make difficulties which would raiſe their ſtyle above the vulgar phraſe. Its inverſion was one of the eaſieſt modes of making a peculiar ſtyle of compoſition: and as ſociety advanced in its attainments, the tranſition, the alliteration, and other ornaments, may have been added, either as new beauties or as new difficulties.

The hiſtory of the Saxon poetry, and, indeed, of all modern European poetry, in its ruder ſtate, may be divided into three heads: ſongs, or ballads; the lengthened narrative poems, or romances; and that miſcellaneous kind which, if we term it lyric, it is more for the convenience of uſing a ſhort generic word, than for the exact appropriation of its meaning.

That our anceſtors had popular ſongs on the actions of their great or favourite characters, or on ſuch other ſubjects as intereſted the vulgar mind, is proved by many inſtances, which may be traced in the ancient writers. Aldhelm applied himſelf to compoſe ſongs, or ballads, in the Anglo-Saxon language, to inſtruct, as well as to amuſe, his countrymen. None of Aldhelm's vernacular poetry has ſurvived; but the circumſtance that he compoſed and ſang theſe ballads as if "he profeſſed the art of ſinging," ſhew that the harpers of the day were accuſtomed to recite them. That ſuch things were then in general circulation is alſo implied by Bede, when he mentions, that in a feſtive company the harp was ſent round, that thoſe might ſing who could.

It was a book of Saxon poems which firſt allured Alfred to learn to read; and the fact, that he had his children taught to read Saxon poems, and that he himſelf viſited the Daniſh camp as a harper, which, in the reign of his grandſon, Anlaf imitated, prove the exiſtence of popular ſongs, which intereſted both the child and the rude warrior.

The genuine ballad ſeems to have originated when the old Saxon poetry began to decline. The laboured metaphor, the endleſs periphraſis, the violent inverſion, and the abrupt tranſition, were the great features of the Saxon poetry. Theſe conſtituted that pompouſneſs which William of Malmſbury truly ſtates to have been its great characteriſtic. But it was impoſſible that, while theſe continued prevalent and popular, the genuine ballad could have appeared. The ballad, therefore, probably aroſe from more vulgar and homely poets; from men who could not bend language into that difficult and artificial ſtrain, which the genius of the Anglo-Saxon bard was educated to uſe. The ambulatory glee-men, who ſtrove to pleaſe the public by their merry-andrew antics, were moſt probably the firſt inventors of the genuine ballad. While at one time they tumbled and danced, ſhewed their bears, and frolicked before the people in the dreſſes of various animals; at others, they may have told little tales to intereſt the mob, from whoſe liberality they drew their maintenance.

Incidents narrated in verſe were more intelligible than the pompous ſongs of the regular poets, and far more intereſting to the people. In time they gained admiſſion to the hall and the palace; and, by the ſtyle of Canute's ballad, this revolution muſt have been achieved by the beginning of the eleventh century. Then the harſh and obſcure ſtyle of the old Saxon poetry began to be unpopular; and being ſtill more diſcredited after the Norman conqueſt, it was at length completely ſuperſeded by the ballad and the metrical romance. See ROMANCE.

The Anglo-Saxon verſification, ſays Mr. Turner, poſſeſſes occaſional rhyme and occaſional alliteration, and ſometimes the alliteration peculiar to the Welſh poetry. But none of theſe form its conſtituent character. Mr. Tyrhwit and Mr. Ellis are alſo right in aſſerting, that it does not depend upon "a fixed and determinate number of ſyllables, nor on that marked attention to their quantity which Hickes ſuppoſed to have conſtituted the diſtinction between verſe and proſe." The only rule of the Saxon verſification, which we can now diſcover, is, in our author's opinion, that the words are placed in a peculiar rhythm or cadence, examples of which the ſpecimens of their poetry extant ſupply; and to produce this rhythm ſeems to have been the perfection of their verſification: but, happily for the ſtrength of their poetry, they extended their rhythm into a more dignified cadence. The Latin poetry of the Anglo-Saxons originated from the Roman poetry, and was compoſed according to the rules of Roman proſody.

The literature of the Anglo-Saxons muſt be dated from their converſion to Chriſtianity, which event took place about the year 570; and it is certain, if we allow that they had Runic letters and ſongs before this era, that their knowledge of books, and of the learning which had been accumulated in happier regions of the world, were derived from their religious intercourſe with Rome. During this period, it was the prevailing practice among the Saxons, not only of the clergy, but of the better ſort of laity, to make a voyage to Rome; and Rome, in return, ſent her emiſſaries to Britain. The firſt ſtep of their intellectual progreſs was the introduction into England of the Latin and Greek languages; and the next was the collection of the authors who uſed theſe languages. St. Auguſtin, and the monks who accompanied him, not only ſucceeded in eſtabliſhing Chriſtianity, but alſo occaſioned a deſire of knowledge to ſpread among the Anglo-Saxons, in the ſeventh century. At this period, Ireland was diſtinguiſhed for its religious literature; and many of the Anglo-Saxons, both of the higher and lower ranks, retired into it to purſue their ſtudies or their devotion. In the Jewiſh and Chriſtian ſcriptures, to which the Anglo-Saxons had acceſs, they would find a rich treaſury of general knowledge. Theodore, archbiſhop of Canterbury, and Adrian, an abbot of a monaſtery near Naples, and an African, viſited England about this time, A.D. 668; and nothing could be more fortunate for the Anglo-Saxon literature than the ſettlement of theſe men in the country. Their converſation and exhortations excited among the Anglo-Saxons a great emulation for literary ſtudies. Benedict, who founded the abbey at Weremouth, muſt in this connection be mentioned with applauſe. Egbert alſo, who was archbiſhop of York in 712, was famous in his day. Wilfrid was another benefactor to Anglo-Saxon literature, by favouring the collection of books. The three great luminaries of the Anglo-Saxons, whoſe attainments contributed ſo much to increaſe intellectual cultivation among their countrymen, in the century preceding Alfred the Great, were Aldhelm, Bede, and Alcuin. In the days of Alfred, a great acceſſion of knowledge was introduced among the Anglo-Saxons by the taſte and patronage of that illuſtrious king. It is certain that literature was at its height among our Saxon anceſtors about the eighth century; and this was almoſt entirely owing to the attention of king Alfred, who encouraged learning by his own example, by founding ſeminaries of inſtruction, and by rewarding the labours of ſcholars.

Among the arts and ſciences of the Anglo-Saxons we may mention muſic, the art of deſign and painting, and architecture. Beſides the rules of Latin poetry and rhetoric, the Anglo-Saxons ſtudied arithmetic and aſtronomy as laborious ſciences. Their geography and topography, though not wholly neglected, were not much ſtudied. To the ſcience of medicine the Anglo-Saxons directed their attention as early as the ſeventh century; and ſome of them practiſed it as a profeſſion. With ſurgery they were little converſant. On the eſtabliſhment of Chriſtianity among the Anglo-Saxons, after its introduction into Kent by St. Auguſtine, it is needleſs to enlarge; nor need we trace its beneficial effects on the diſpoſitions and manners of the people. Of the Anglo-Saxon language we have given as ample an account as our limits will allow, under other articles. See ANGLO-SAXON, ENGLISH, and SAXON, *ſupra*.

SAXONY, in *Geography*, a kingdom of Europe, compoſed of the duchy of Saxony, the greater part of the marggravate of Meiſſen, a part of the Vogtland in the ſouth, and the north part of Thuringia in the weſt, Luſatia in the eaſt, and a part of the county of Henneberg. The kingdom of Saxony, formerly the *Electorate*, is in length from eaſt to weſt about 220 Britiſh miles, and in breadth from north to ſouth about 130. The territories of the elector (now king) of Saxony have been computed at 11,680 ſquare miles, and the inhabitants at 1,896,000, and the revenue at 1,283,333*l.* ſterling. In 1792, by Hoeck's calculation, there were 2,104,320 inhabitants; and the army conſiſted of 21,576 infantry and 6180 cavalry, ſo as, including other corps, to form a total of 32,000. The revenue (A.D. 1800) amounted to 7,800,000 rixdollars. The country furniſhes abundance of grain, pulſe, legumes, and fruit; hops, flax, hemp, tobacco, aniſeed, woad, &c.; and wine is made in Meiſſen. It's foreſts, which are conſiderable, yield timber and pitch. Coals are found in ſeveral places; and its mines afford ſilver, copper, tin, lead, iron, cinnabar, quickſilver, antimony, biſmuth, arſenic, and different kinds of precious ſtones. It has alſo quarries of various ſorts of marble. The principal rivers are the Elbe, Elſter, the Pleiſſe, Mulda, Saal, and the Spree of Luſatia. Saxony is in general well cultivated and populous: it contains 200 towns, and about 5000 villages. Saxony was the nurſery of the reformation, introduced by Luther, which is now the prevailing religion; but ambition to be king of Poland induced the elector Frederic Auguſtus, in 1697, to become a Roman Catholic, engaging, however, for himſelf and his ſucceſſors, not to make any alteration in the church, worſhip, ceremonies, univerſities, or ſchools. The arts and ſciences flouriſh in Saxony; and it has numerous manufactures of thread, linen, porcelain, glaſs, cutlery, carpets, velvet, and muſlins. The ancient dukes of Saxony ſprung from the kings who defended themſelves with ſuch valour againſt France. Otho III., duke of Saxony, became emperor in 936, and reſigned Saxony to the houſe of Stubenſkorn, or Billing, which ended in 1106; and ſoon after, this dukedom paſſed by marriage to the houſe of Bavaria. Henry the Lion, duke of Saxony and Bavaria, 1139—1180, was diſtinguiſhed by his valour and power. In 1180 the eaſtern part of Saxony was aſſigned to Bernard of Aſcania, the weſtern half being given to the archbiſhop of Cologne; and Wittenberg became the uſual reſidence. The firſt elector was Frederic, the warlike marggrave of Meiſſen, in the year 1422, and was ſucceeded by Erneſt, his eldeſt grandſon; and the dignity continued in his family until the year 1547, when John Frederic was put under the ban of the empire, and duke Maurice, a deſcendant of Albert, the brother of Erneſt, was named elector by Charles V. This duke was ſucceeded by his brother, whoſe deſcendants have ſtill retained the electorate. His grandſon, George I., added to his poſſeſſions Upper and Lower Luſatia, and ſome other acquiſitions. The elector Frederic Auguſtus, by aſpiring to the crown of Poland, and taking poſſeſſion of it, in the latter part of the 17th century, deſtroyed his own comfort, and ruined his country. Saxony ſuffered greatly by the invaſion of the Pruſſians in the war of ſeven years; but afterwards recovered itſelf, and became, for a long interval, the tranquil ſeat of the arts and ſciences. In the beginning of the year 1807, Saxony was erected into a kingdom, and Frederic Auguſtus IV., duke and elector, was crowned the firſt king. Its future condition, in conſequence of the late continental war, and the congreſs of ſovereigns at Vienna in 1815, with their partitions and arrangements, is not finally ſettled.

Saxony, independently of Luſatia, is divided into ſeven circles and two biſhoprics. The circles are thoſe of Saxony, or the Electoral, Thuringia, Meiſſen, Leipſic, Erzgebirg, Vogtland, and Neuſtadt; the biſhoprics are Merſeburg and Naumburg. The chief city is Dreſden.

Saxony, *Duchy of*, or *Electoral Circle*, is ſurrounded by the circles of Meiſſen, Leipſic, and Thuringia, the principality of Anhalt, and the marquiſate of Brandenburg and Luſatia; and contains 27 towns and 400 villages. This circle or duchy is different from the ancient duchy of Saxony, which extended from Denmark to the Rhine. The preſent electoral circle was taken from the Wends by the marggrave Albert the Bear; and his ſon Bernhard, who became poſſeſſed of it, obtaining the dignity of a duke of Saxony, entailed the name of the duchy of Saxony on the portion of it that belonged to this country; and the electoral dignity being attached to the duchy, it has obtained the title of the Electoral Circle. Wittenberg is the capital.

Saxony, *Lower*, a circle of Germany, bounded on the north by the duchy of Sleſwic and the Baltic, on the eaſt by the circle of Upper Saxony, on the ſouth by the circles of Upper Saxony and the Upper Rhine, and on the weſt by the circle of Weſtphalia and the German ſea. The eſtates belonging to this circle were the duchies of Magdeburg and Bremen, the principalities of Lunenburg or Zell, Grubenhagen, Calenberg, Wolfenbuttle, Halberſtadt, Mecklenburg-Schwerin, Mecklenburg-Guſtro, Holſtein-Gottorf, Holſtein-Gluckſtadt, Hildeſheim, Saxe-Lauenburg, the biſhopric of Lubeck, the principality of Schwerin, Ratzeburg, Blankenburg, and Ranzau, with the cities of Lubeck, Goſslar, Mulhauſen, Nordhauſen, Hamburg, and Bremen. As to religion, this circle has been wholly Lutheran.

Saxony, *Upper*, a circle of Germany, bounded by the circles of the Upper Rhine, Franconia, Lower Saxony, the Baltic, Pruſſia, Sileſia, Luſatia, and Bohemia. It is compoſed of 22 ſtates, which are the following: *viz.* the elector of Saxony, the elector of Brandenburg, Saxe-Weimar, Saxe-Eiſenach, Saxe-Coburg, Saxe-Gotha, Saxe-Altenburg, Saxe-Querfurt, the Hither and Farther Pomerania, Cammin, Anhalt, Quedlinburg, Gernrode, Walkenried, Schwarzburg, Sonderſhauſen, Schwarzburg-Rudolſtadt, Mansfeld, Stolberg, Barby, the counts of Reuſſen, and the counts of Schonburg. This whole circle is Lutheran, except the electorate of Saxony.

SAXTON'S River, a river of America, in the ſtate of Vermont, which diſcharges itſelf into the Connecticut, at Weſtminſter.

SAXUMA, a town of Japan, in the iſland of Niphon. N. lat. 31° 35'. E. long. 131° 2'.

SAY, or Saye, in *Commerce*, a kind of ſerge; or a very light croſſed ſtuff, all wool; much uſed abroad for linings, and by the religious for ſhirts; and with us, by the Quakers, for aprons, for which purpoſe it is uſually dyed green.

There are very conſiderable manufactures of it at Sudbury and Colcheſter; alſo at Ypres, Houdſcot, &c. in Flanders, &c. Thoſe made in England are chiefly exported to Portugal and Leghorn.

SAYA, in *Geography*, a town of the iſland of Cuba; 15 miles S.S.W. of Spiritu Santo.

SAYACU, in *Ornithology*, the name of a Braſilian bird, of the ſize of our chaffinch, and all over of a greyiſh-green colour, and very beautifully bright and ſhining in the back and wings. Its beak is black, as are alſo its eyes. It is a ſpecies of the *Tanagra;* which ſee.

SAYAN, a name given by ſome to a ſpecies of ſea-ſwallow. This is the bird whoſe neſts are ſo famous an ingredient in ſoups.

Sayan *Kiamen*, in *Geography*, a poſt of Chineſe Tartary. N. lat. 43° 37'. E. long. 105° 39'.

SAYANE, or *Sayanſk Mountains*, mountains on the borders of Siberia, the nethermoſt ſnow-tops and granitic main-ridges of which determine at the Yeniſſey, and thence as far as the Baikal, the boundaries between Siberia and the Mongoley; ſo that only the northern ſide of the mountains belongs to Siberia. The whole range, whoſe higheſt ridges, neareſt to the Yeniſſey, are called Sayanſkoi-Krebet, but towards the ridges of the Oka, Krebet-Khandabaga, conſiſts, more or leſs, of rugged granite and porphyry ſummits, which interchange into various kinds of ſchiſtus; and farther onwards, between the Yeniſſey and the Angara, is underrun with powerful flœtzes of chalk, marle, clay, and ſand. The granite in many of the hills is ſo coarſe-grained, that the beſt mines here are of Muſcovy glaſs. In theſe mountains, about the Yeniſſey, are found numbers of mines called old tſhudi mines; though their mineral contents are almoſt wholly unknown, and except iron-ore, little has been gained from them. In the vallies that interſect this range of mountains there are foreſts of pines, birch, larch, and cedar. The chief rivers of the Sayane mountains are the Yeniſſey, the Tuba, the Mana, the Kan, the Byraſſa, the Ouda, the Oka, the Irkut, &c.

SAYAQUE, a town of New Mexico; 30 miles N. of Santa Fé.

SAYBROOK, a poſt-town of America, in Middleſex county, and ſtate of Connecticut, ſituated on the weſt ſide of the mouth of Connecticut river; 36 miles E. of New Haven, and 367 from Waſhington. This is the moſt ancient town in the ſtate, having been ſettled by Mr. Fenwick in 1634, who gave it its preſent name in honour of lord Say and Seal, and lord Brook. Its fort has been a ſecurity againſt the Pequet Indians, and againſt other more formidable enemies, in defence of the entrance into Connecticut river.

SAYD. See Saide.

SAYDA, a town of Saxony, in the circle of Erzgebirg;

birg; 24 miles S.W. of Dreſden. N. lat. 50° 39′. E. long. 13° 23′.

SAYN, a town of Germany, in the electorate of Treves, on the Sayn; 6 miles N. of Coblentz.—Alſo, a county of Germany, divided into two principal diſtricts, *viz.* Sayn-Altenkirchen and Sayn-Hachenbach. Its territories are ſituated chiefly in the Weſterwald, and intermixed with thoſe of Heſſe-Darmſtadt. Sayn-Altenkirchen was inveſted in the marggravate of Anſpach, and after the death of the marggrave, adjudged to the prince of Naſſau-Uſingen.—Alſo, a river of Germany, which runs into the Rhine, about five miles below Coblentz.

SAYOU, a town of Africa, in the country of Sierra Leone; 60 miles E.N.E. of Portlogo.

SAYPAN, or *St.* Joseph, one of the Ladrone iſlands, about 20 miles in circumference. It is the northernmoſt of the three iſlands, Saypan, Tinian, and Aiguigan; and from the N.E. point of that iſland to the S.W. point of Aiguigan, the diſtance is about 17 leagues. Theſe three iſlands are between two and three leagues diſtant from each other. Saypan is the largeſt, and Aiguigan, which is high and round, the ſmalleſt. Saypan is not only much larger, and riſes higher, than Tinian, but has a much pleaſanter appearance. In commodore Byron's voyages, it was viſited Auguſt 1765; and ſome of the crew of the Tamar landed upon a fine ſandy beach, which is ſix or ſeven miles long, and walked up into the woods, where they ſaw many trees, which were fit for topmaſts. They ſaw no fowls nor tracks of cattle, but of hogs and guanicoes there was plenty. They ſaw no freſh water near the beach, but obſerved a large pond iſland. They perceived large heaps of oyſter-ſhells thrown together, and other ſigns of people having been there not long before; from which circumſtance they thought it probable, that, at certain ſeaſons of the year, the Spaniards may viſit the iſland, and carry on a pearl-fiſhery. They alſo ſaw many of thoſe ſquare pyramidal pillars, which are to be found at Tinian, and which are particularly deſcribed in lord Anſon's Voyage. The ſoil is fertile, the climate ſerene, and the neceſſaries of life abundant. See Ladrone and Tinian.

SAYR, a town of Hindooſtan, in Bahar; 30 miles S. of Bettyar.

SAYTAN Harbour, a bay on the weſt coaſt of the iſland of Sumatra. S. lat. 1° 2′. E. long. 99° 55′.

SAZA, a town of Spain, in Aragon; 6 miles S.W. of Ainſa.

SBAINEE, a town of Algiers; 27 miles E. of Conſtantina.

SBARAZ, a town of Ruſſian Poland, in the palatinate of Braclaw; 38 miles N. of Burnaw. N. lat. 49° 30′. E. long. 29° 1′.

SBE-AH, a town of Africa, in the kingdom of Tunis, anciently called "Ruſpæ;" 20 miles S. of El Medea.

SBEEBAH, a town of Africa, in Tunis, anciently called "Tucca Terebinthina;" 20 miles S. of Keff, and 50 N. of Spaitla.

SBEKKAH, a town of Africa, in Biledulgerid, anciently called "Cerbica;" 50 miles S.W. of Gafſa.

SBICA, a town of Arabia, in the province of Nedſjed, near a lake; 220 miles E. of Madian.

SBOAKE′, a town of Egypt, on the left bank of the Nile; 5 miles N. of Tahta.

SBRASLAW, a town of Bohemia, in the circle of Beraun; 9 miles E. of Beraun.

SBROGLIAVACA, a town of Italy, in Friuli; 8 miles from Concordia.

SCAB, in *Rural Economy*, a contagious diſeaſe, incident to ſheep. It is a cutaneous diſeaſe, ſomewhat like the itch. It commonly ſhews itſelf in the form of ſmall circumſcribed tumours, which, when they break out, appear in the manner of ſcabs, or have a ſort of cruſty diſperſion over the parts. It is known by the manner of the ſheep working themſelves in the fields, called *ferretting*, ſuch as ſcratching different parts of their bodies in a particular way by the claws of their hind feet, rubbing againſt the fences, biting the parts with their teeth, and many others. Whenever any of theſe appearances diſplay themſelves, the diſeaſed ſheep ſhould directly be ſeparated from the reſt of the flock which are ſound.

In ſome places the infected ſheep become extremely reſtleſs, and manifeſt great impatience. Inſtead of feeding quietly, they tear and diſplace the wool of the parts by biting it, being continually on the ſearch for ſtones, banks, and other places, to rub againſt. The ſkin, when minutely examined, has a reddiſh fretted aſpect, emitting a peculiar ichorous diſcharge, which hardens into a ſort of cruſt or ſcurf. The coat becomes foul, and falls off before its proper time of being cut. The ſheep diſcontinues its growth, becomes reduced in fleſh, waſtes and pines away, and, unleſs the diſeaſe be removed, conſtantly ſinks under the continual irritation and poverty cauſed by it. The complaint is extremely infectious, and when once introduced among a flock, leſſens the value very conſiderably, by endangering the whole. The purchaſe of ſuch ſtock for keeping will not be made, and the ſheep farmer who would ſell any of ſuch infected for ſound ſheep, would be found liable to damages. The diſtemper rarely attacks ſheep that are in proper condition, or in a fattened ſtate. Nor does it ſeem to ſpread ſo much among the flock by direct contact, as by means of the rubbing places; as in many caſes where the whole ſheep ſtock of a farm has been diſplaced in conſequence of it, the flock which was afterwards put upon the ſame land has immediately become infected; probably on account of ſome infectious matter, or *animalculæ*, having ſtill continued to adhere to the ſtones, banks, or other rubbing places of the former flock. Fine-woolled old rams are, it is ſaid, of all ſheep the moſt liable to be affected with the diſeaſe. But if the hogs of ſome breeds, as the Cheviot and Leiceſter, be not carefully taken notice of, and properly ſmeared in due ſeaſon, they too will become liable to be diſeaſed in this way. In ſome ſorts of ſheep, where ſmearing is well attended to, it is ſeldom produced, though this practice does not abſolutely prevent infection from taking place.

This is a diſeaſe which is very prevalent in the Romney Marſh ſheep diſtrict, and, in the opinion of ſome, more ſo at preſent than it was formerly. The Upland farmers thereabouts, it is thought, are not ſufficiently attentive with reſpect to their ſheep-folds, as it is in this way that the diſorder is much propagated, the Marſh graziers being under the neceſſity of lodging their tegs in theſe contaminated places. The diſeaſe uſually commences between the ſhoulders, perhaps from rubbing moſt in that part, and great pain is ſuffered in handling the ſheep. Though the opinion is prett general in the above Marſh diſtrict, that the diſeaſe is in t blood, and the management directed accordingly by turnin the ſheep into rich paſtures, to ſtrike it out, which is ofte attended with miſchief; it is evidently only of a local nature, being wholly confined to the ſkin, and to be remove by topical applications.

In the northern diſtricts it is ſometimes very troubleſome among the fine-woolled breeds, in the flocks which are upon the low-lying grounds. It occaſionally alſo finds its way into flocks which are compoſed of other breeds, by being introduced in different modes of managing them by the contagious matter. It ſhould, however, always be checked or removed on its firſt attack, by ſuch means as are proper.

When mild, and the cure attempted in time, waſhing with tobacco-water will often remove it without riſk. But ſulphur ointment is a ſtill more effectual remedy. However, when the diſeaſe is of a more virulent nature, the cure is often attempted by the application of the common blue ointment of the ſhops, which is compoſed of quickſilver and hog's-lard, in the proportion of about two ounces of quickſilver to ſixteen ounces of lard, by rubbing them well together in a mortar: a pound of the ointment, thus prepared, being ſufficient for four or ſix ſheep. The greateſt caution ſhould however be conſtantly taken in applying this ointment, eſpecially with ewes that have lambs, as the latter are often liable to be deſtroyed by being ſalivated by it. The beſt mode of applying it is very ſparingly in ſheds at four or five inches apart on the ſides and back.

But the following form has been adviſed by ſir Joſeph Banks: take one pound of quickſilver, half a pound of Venice turpentine, half a pint of oil of turpentine, four pounds of hog's-lard: let them be rubbed in a mortar, till the quickſilver is thoroughly incorporated with the other ingredients. It ſhould then be applied along the back, on the ſkin, in two lines on each ſide, and in one down the ſhoulder and between the legs, and the operation ſhould not be performed later than about Michaelmas.

But a ſtill more elaborate preparation has been propoſed for the cure of this diſorder, but which, perhaps, has little, if any, ſuperiority. Take a gallon of ſoft well or pond water, which divide into two equal parts: in one of theſe parts diſſolve eight ounces of old hard ſoap; to which, when it is diſſolved, add two ounces of ſpirits of hartſhorn, and ſeven ounces of common ſalt, with four ounces of roll brimſtone, beat to a fine powder and ſifted; then take the other part of the water, in which put two ounces of tobacco-leaf, and one of white hellebore root; boil this ſecond part till you have a ſtrong infuſion, or rather decoction, after which ſtrain it clear from the leaves and roots. Afterwards take that part of the water, firſt mentioned, and ſet it over the fire; let it boil for about half an hour, keeping it continually ſtirring with a wooden ladle during that time; in the mean time heat again the other part, in which the tobacco and hellebore were infuſed; and when it is hot, mix the two parts gradually together over the fire, keeping the mixture continually ſtirring till it is taken off the fire, which ſhould be in about a quarter of an hour: when it is quite cold, let it be put into a ſtone bottle, in order to its being kept in a cool place for uſe. This liquor ſhould be uſed with caution at firſt, but may afterwards be uſed more freely. It is beſt to apply it by ſhedding the wool on the back and other parts. Theſe mixtures ſhould be boiled in well-glazed earthen or iron pots.

A preparation made by boiling two pounds of white hellebore root coarſely pounded, one pound of ſulphur vivum, and one ounce of the ſublimate of mercury, or the ſame quantity of white arſenic, in four gallons of ſtrong aſh-ley for half an hour or more, is alſo greatly recommended by ſome. The affected parts of the ſheep are to be well waſhed with this liquor once or twice in the day, which will afford almoſt immediate relief. When the liquor happens to be too ſtrong, it may be diluted by means of more aſh-ley being added.

Or the following ointment, which is of a ſimilar nature, may be employed in caſes where the ſheep are almoſt in a naked ſtate. Mix two ounces each, of finely powdered ſulphur vivum and white hellebore, and one ounce of finely levigated ſublimate, with three quarters of a pound of hog's-lard, rubbing them very well together. The diſeaſed parts are to be ſlightly anointed with this ſubſtance once or twice in the courſe of the day. Its ſtrength may be reduced when neceſſary, by adding more lard.

Turpentine, and train-oil and brimſtone in mixture, as ointments, are likewiſe in ſome inſtances made uſe of for this purpoſe with much benefit.

In that ſtate of violent itching which is denominated the *rubbers*, that permits of no reſt for the ſheep which are affected with it; the only means of relief are probably thoſe of houſing the animals, cutting off their coats in a cloſe manner, waſhing and cleaning their ſkins well with aſh-ley, and then applying over it a ſharp ſolution of ſome kind or other, ſuch as that of ſublimate in a weak ſtate. Internal remedies are ſometimes combined with thoſe of the alterative and ſulphur kinds.

The occaſional appearances of hard ſcurfy matters on the backs of ſheep, cauſed by heat or in other ways, are, for the moſt part, neither dangerous nor infectious, it being generally ſufficient to have them anointed with a little ſheep-ſalve.

In ſome inſtances, a foul ſtate of the body, and red lice, are taken for the ſcab, though the difference is readily detected by proper attention; as in them the affections are not on the ſame parts, or the appearances the ſame, the animals not pulling off their wool, or *ferretting* about in the ſame manner as in that caſe. Nor is there any thing infectious in ſuch complaints.

On the whole the ſcab, though not very dangerous, is extremely troubleſome and diſtreſſing to the ſheep, being attended with conſiderable pain; and by neglect it may ultimately become fatal.

This is likewiſe a diſtemper in horſes, often proceeding from their being over-heated, which is to be removed in much the ſame manner. See HORSE and SHEEP.

SCAB, *Crown-ſcab*, in the *Manege*. See CROWN-*ſcab*.

SCABBARD, is the ſkin that ſerves for a ſheath or caſe to a horſe's yard.

SCABBED HEAD, in *Medicine*. See PORRIGO.

SCABBED *Heels*, or *Fruſh*, in the *Manege*, is an eating putrefaction upon a horſe's fruſh, which is very hard to cure, and has a noiſome ſmell.

SCABELLA, or SCABILLA, the perſons who in antiquity beat time to the performance of muſic; they were generally furniſhed with wooden or iron ſandals, in order to mark the meaſure in a more diſtinct manner. Theſe inſtruments were called κρουπεζια, κρουπλα, or κρουπτα, by the Greeks, by the Latins *pedicula*, *ſcabella* or *ſcabilla*, becauſe they reſembled little pattens or clogs.

SCABELLUM, in the *Ancient Architecture*, a kind of pedeſtal, uſually ſquare, ſometimes polygonous, very high and ſlender, commonly terminating in a kind of ſheath or ſcabbard, or profiled in manner of a baluſter. Its uſe is to ſupport buſtos, or other relievos, &c.

SCABIES, in *Medicine*, the *itch*, ſo called from the intenſe itching which accompanies every form of this contagious diſeaſe.

We have given, under the popular term ITCH (which ſee), a brief deſcription of the varieties of this eruptive complaint, and of the methods of curing it, which it will not be neceſſary to repeat. We learn from the treatiſe of Dr. Bateman, on the diſeaſes of the ſkin, publiſhed ſince that article was written, that Dr. Willan had adopted the diſtinctions of the vulgar (who indeed have the beſt opportunities of becoming intimately acquainted with this filthy malady) in his nomenclature of ſcabies; which he divided into four ſpecies, calling the *rank* itch, *Scabies papuliformis*, from the pimple-like appearance of the little veſicles;—the *watery* itch, *S. lymphatica*, which is nearly a tranſlation of the popular term;—the *pocky* itch, *S. purulenta*, from the puſtular form which it aſſumes;—and the *ſcorbutic* itch, *S. cachectica*, as connected with a bad habit of the body. This laſt form of the itch ſometimes originates independently of contagion, where the conſtitution is ſuffering under ſome chronic malady, or has been debilitated by ſome acute diſeaſe; whence ſir John Pringle obſerved that, in military hoſpitals, the patients often became the ſubjects of itch after the criſis of fevers.

The term *ſcabies*, like moſt of the appellations applied to diſeaſes of the ſkin, has been employed in various acceptations by different writers: and many of them ſpeak of ſcabies *ſicca* and *humida*, and agree in conſidering the humid as more curable than the dry forms of ſcabies. But thoſe who thus employ the term, apply it to all tettery and leprous eruptions; and the aſſertion, therefore, is equivalent to this, that the dry tetters, lepra, pſoriaſis, &c. are not ſo eaſily cured as impetigo and ſcabies, which is true. But the term *ſcabies* ſhould be limited to the contagious itch; for we have above pointed out the error of appropriating the Greek term *pſora* to this diſeaſe. See ITCH. See Bateman's Pract. Synopſ. of Cutan. Diſeaſes. Alſo, Willis, Pharmac. Rational, p. ii. § 2, cap. 6; and Calliſen, Syſt. Chirurg. Hodiern. § 824.

SCABIOSA, in *Botany*, a very natural genus of plants, ſo named from *ſcabies*, the itch, or ſome ſimilar eruptive diſeaſe, which certain ſpecies were thought to cure. Ambroſini derives the word from *ſcaber*, rough, becauſe of the roughneſs uſual in theſe herbs, and eſpecially of the ſcaly harſhneſs of their heads of flowers.—Linn. Gen. 48. Schreb. 64. Willd. Sp. Pl. v. 1. 545. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 170. Prodr. Fl. Græc. Sibth. v. 1. 79. Ait. Hort. Kew. v. 1. 224. Juſſ. 194. Lamarck Illuſtr. t. 57. Gærtn. t. 86.—Claſs and order, *Tetrandria Monogynia*. Nat. Ord. *Aggregatæ*, Linn. *Dipſaceæ*, Juſſ.

Gen. Ch. *Cal.* Common perianth many-flowered, ſpreading, of many leaves, ſurrounding the receptacle in various rows, and inſerted into that part, the inner ones gradually ſmaller; proper perianth double; the outermoſt inferior, of one leaf, tubular, plaited, permanent; the innermoſt ſuperior, in five deep, awl-ſhaped, capillary-pointed ſegments. *General corolla* equal, though often compoſed of unequal florets; *partial* of one petal, tubular, cut about half way down into four or five, equal or unequal, ſegments. *Stam.* Filaments four, awl-ſhaped, or nearly capillary, weak; anthers oblong, incumbent. *Piſt.* Germen inferior, enfolded in an appropriate ſheath like a partial inferior calyx; ſtyle thread-ſhaped, the length of the petal; ſtigma obtuſe, obliquely emarginate. *Peric.* none. *Seeds* ſolitary, ovate-oblong, ſheathed, and variouſly crowned, by their partial calyxes. *Common receptacle* convex, either covered with chaffy leaflets or ſcales, or ſometimes naked.

Obſ. The outermoſt florets are often largeſt, and moſt unequal. The crown of the ſeed differs in different ſpecies. The ſpecies are primarily diſtinguiſhed by the partial corolla being in four or five ſegments.

Eſſ. Ch. Common calyx of many leaves; partial double; the innermoſt ſuperior. Receptacle chaffy, or naked. Seed coated and crowned by the partial calyx.

An extenſive genus, of herbaceous or ſlightly ſhrubby plants, confined to Europe and ſome parts of Africa, unknown in America. The herbage is uſually rough; ſtem forked; leaves oppoſite, variouſly cut or compound, rarely undivided and entire; flowers blueiſh, white or yellowiſh, of a handſome, often radiated, form, and generally ſupported by long ſtalks, being very rarely ſeſſile. The following examples may ſuffice. Linnæus has 24 of this genus in his *Species Plantarum*; Willdenow 41. Some of their *Knautiæ* moreover are *Scabioſæ*. Three are natives of Britain, and ſeveral new ones are figured in the *Flora Græca*. All theſe we ſhall particularly notice.

Sect. 1. *Partial corollas four-cleft.*

S. *alpina*. Alpine Scabious. Linn. Sp. Pl. 141. Willd. n. 1. Ait. n. 1. (S. alpina maxima; Lob. Ic. 537. f. 2. S. montana maxima; Ger. Em. 721. S. alpina centauroides; Beſl. Hort. Eyſt. æſtiv. 8. t. 9. f. 1. Dipſacus n. 200; Hall. Hiſt. v. 1. 86.)—Corollas four-cleft, equal. Calyx imbricated. Flowers drooping. Leaves pinnate; with lanceolate ſerrated leaflets.—Native of the mountains of Switzerland and Italy. Dr. Sibthorp found it alſo on mount Athos. The plant has been for theſe 250 years a hardy perennial in our gardens, flowering in June and July. The *ſtem* is often five or ſix feet high. *Leaves* of the colour and aſpect of Elder, but more rigid, with more numerous, rather hairy, *leaflets*. *Flowers* ſmall in proportion, pale buff, or yellowiſh, in round ſcaly heads. This is a coarſe inelegant plant, taking up much room, with little ſhow, and is fit only for the borders of a ſhrubbery, or very ſpacious garden.

S. *ambroſioides*. Ambroſia-leaved Scabious. Sm. Fl. Græc. Sibth. v. 2. 5. t. 103.—Corollas four-cleft, equal. Calyx imbricated, acute. Leaves interruptedly and doubly pinnatifid, cut, downy.—Diſcovered by Dr. Sibthorp, on mount Parnaſſus. About four feet high. Diſtinguiſhed from the laſt by its more ſubdivided and jagged *leaves*, and larger, yellowiſh, upright *flowers*.

S. *bidens*. Twin-toothed Scabious. Sm. Fl. Græc. Sibth. v. 2. 6. t. 104.—Corollas four-cleft, radiating. Lower leaves lyrate, ſerrated. Fruit compreſſed, with two principal teeth.—Gathered by Dr. Sibthorp, in Aſia Minor, probably near Smyrna. *Root* biennial, tapering. *Stem* ſolitary, a yard high, erect, ſtraight, leafy, round, hollow, roughiſh to the touch; branched, or panicled, at the top. *Leaves* four or five inches long, roughiſh, rather flaccid; the upper ones with an undivided linear baſe. *Flowers* rather ſmall, light purple, with red *anthers*; the marginal *florets* radiant. *Fruit* approaching the form of that of a true *Knautia*.

S. *ſyriaca*. Syrian Scabious. Linn. Sp. Pl. 141. Willd. n. 7. Ait. n. 5. Sm. Fl. Græc. Sibth. v. 2. 6. t. 105. (S. fruticans latifolia alba; Moriſ. ſect. 6. t. 14. f. 14. S. æſtivalis Cluſii; Ger. Em. 724.)—Corollas four-cleft, equal. Calyx imbricated, awned; as well as the ſcales of the cylindrical receptacle. Leaves lanceolate, ſerrated.—Native of cultivated fields in Syria, and the iſle of Cyprus. The *root* is annual. *Habit* of the plant like the laſt, but the *leaves* undivided, ſtraight and rigid, all uniform. *Flowers* purple, conical, with red, projecting, briſtly awns to their ſcales.

S. *ſucciſa*. Devil's-bit Scabious. Linn. Sp. Pl. 142. Willd. n. 9. Ait. n. 7. Fl. Brit. n. 1. Engl. Bot. t. 878. Curt. Lond. faſc. 3. t. 10. Fl. Dan. t. 279. (Morſus Diaboli; Ger. Em. 726.)—Corollas four-cleft, equal. Stem-leaves toothed. Heads of flowers nearly globular. Branches few, erect.—Native of rather moiſt meadows throughout the cooler parts of Europe, flowering with us in autumn. The *root* is perennial, tuberous, abrupt, having, it is ſaid, been bitten off by the Devil, out of ſpite to its many medical virtues. *Stem* twelve or eighteen inches high, round, leafy, purpliſh, bearing about three or more *flowers* of a violet purple, often white, but ſcarcely ever of the bright blue repreſented in Engliſh Botany. Radical *leaves* ovate, or obovate, entire. *Hairs* of the ſtem deflexed, thoſe of the flower-ſtalks erect. *Flowers* nearly regular.

S. *arvenſis.* Field Scabious. Linn. Sp. Pl. 143. Willd. n. 15. Ait. n. 10. Fl. Brit. n. 2. Engl. Bot. t. 659. Curt. Lond. faſc. 4. t. 13. Fl. Dan. t. 447. (S. major vulgaris; Ger. Em. 719.)—Corollas four-cleft, radiating. Leaves pinnatifid, cut. Stem briſtly. Receptacle hairy. —Common throughout Europe, in gravelly fields and paſtures, flowering in July. *Root* perennial, long, tapering. *Plant* three or four feet high, hairy. Radical *leaves* numerous, undivided, ſerrated; upper ones pinnatifid, and cut. *Flowers* large and handſome; the great radiating marginal florets of a purpliſh-blue; the reſt pale reddiſh; all acquire a bright green colour if held over a lighted pipe of tobacco. *Seed* crowned with many briſtles. *Receptacle* hairy, not ſcaly.

S. *ſylvatica.* Broad-leaved Scabious. Linn. Sp. Pl. 142. Willd. n. 17. Ait. n. 12. Jacq. Auſtr. v. 4. 32. t. 362. (S. n. 204 and 205; Hall. Hiſt. v. 1. 89. S. rubra auſtriaca; Ger. Em. 721.)—Corollas four-cleft, radiating. Leaves all undivided, ovate-oblong, acute, ſerrated. Stem hiſpid.—Native of the borders of woods in Auſtria, Hungary, and Switzerland, flowering from June to September. The *root* is perennial. The broad, more uniform and acute, undivided *leaves* diſtinguiſh this from the laſt, and the *flowers* are ſmaller. The plant has little to recommend it as an object of general cultivation, and though every now and then introduced among other foreign ſeeds, is ſeldom kept long in any garden.

We here beg leave to obſerve that *S. hybrida*, Allion. Auct. ad Fl. Pedem. 9, is no other than the Linnæan *integrifolia*, Willd. n. 10; of which a figure is much wanted, and to which Willdenow erroneouſly refers Haller's n. 205; though that author tells us in his *Nomenclator*, p. 20, that his 204 and 205 are one and the ſame ſpecies. Magnol's ſynonym does not belong to Haller's 205, but to the true *integrifolia*.

Sect. 2. *Partial corollas five-cleft.*

S. *columbaria.* Small Scabious. Linn. Sp. Pl. 143. Willd. n. 19. Ait. n. 14. Fl. Brit. n. 3. Engl. Bot. t. 1311. Fl. Dan. t. 314. (S. minor, ſive columbaria; Ger. Em. 719. S. minor; Matth. Valgr. v. 2. 319.)—Corollas five-cleft, radiating. Radical leaves ovate or lyrate, crenate; thoſe of the ſtem pinnatifid, with linear ſegments.—Found in moſt parts of Europe, on dry gravelly or chalky hills, flowering in June and July. *Root* perennial, woody. *Herb* ſmaller, and more ſlender, than *S. arvenſis*, and readily diſtinguiſhed from that, as well as from *ſucciſa*, by the five ſegments of its *florets*. *Stamens* four, not five, as drawn in the Fl. Danica. Outer partial *calyx* finally crowned with a membranous border: inner of five large brown briſtles.

S. *eburnea.* Ivory Scabious. Sm. Fl. Græc. Sibth. v. 2. 7. t. 106.—Corollas five-cleft, radiating, with fringe-like teeth, much ſhorter than the common calyx. Leaves pinnatifid; the uppermoſt linear and undivided.—Gathered by Dr. Sibthorp in the way between Smyrna and Burſa. *Root* ſmall and annual. *Stem* twelve or eighteen inches high, buſhy, branched from the very bottom, leafy, hairy, poliſhed. *Leaves* narrow, recurved, ſlightly hairy. *Flowers* of an ivory white, with a long, deflexed, leafy, linear common *calyx*. The Linnæan *S. ſicula*, Mant. 196. Willd. n. 21, much reſembles this in general aſpect, but differs in having equal, not radiating, *florets*, and dilated, obovate or lyrate, radical *leaves*. *S. maritima*, Linn. Sp. Pl. 144. Willd. n. 23, has *leaves* like *ſicula*, while its *flowers* are radiant, as in our *eburnea*, but red and entire, not toothed.

S. *ſtellata.* Starry Scabious. Linn. Sp. Pl. 144. Willd. n. 24. Ait. n. 17. (S. major hiſpanica; Cluſ. Hiſt. v. 2. 1. Ger. Em. 722.)—Corollas five-cleft, radiating. Leaves cut and jagged. Outer crown of the ſeed orbicular, ſpreading, membranous, with many ribs.—Native of Spain. A common hardy annual in gardens, raiſed not ſo much for the ſake of its large cream-coloured *flowers*, as for its heads of *ſeeds*, which ſerve to decorate flower-pots in winter, and whoſe dark five-rayed inner *calyx* is prettily ſet off by the orbicular and ſhining outer one.

S. *prolifera.* Proliferous Scabious. Linn. Sp. Pl. 144. Willd. n. 25. Ait. n. 18. Sm. Fl. Græc. Sibth. v. 2. 8. t. 107. (S. ſtellata humilis integrifolia prolifera; Herm. Parad. 223, with a plate.)—Corollas five-cleft, radiating. Flowers nearly ſeſſile. Stem proliferous. Leaves undivided.—Native of Egypt, and of the iſle of Cyprus, in cultivated fields; a hardy annual, kept in ſome curious gardens. The repeatedly forked leafy *ſtem*, with a nearly ſeſſile buff-coloured *flower* between each of the diviſions, gives this ſpecies a peculiar appearance. *S. parviflora*, Desfont. Atlant. v. 1. 119, and one very near it, a native of Hungary, called *dichotoma* in Donn. Cant. ed. 5. 28, have however the ſame habit and infloreſcence as the *prolifera*; and, if we miſtake not, the outer partial *calyx* of all of them is of the ſame orbicular membranous ribbed nature as that of *S. ſtellata*, though not quite ſo large.

S. *atro-purpurea.* Sweet, or Muſky, Scabious. Linn. Sp. Pl. 144. Willd. n. 26. Ait. n. 19. Curt. Mag. t. 247. (S. rubra indica; Ger. Em. 724.)—Corollas five-cleft, radiating. Leaves pinnatifid and cut. Receptacle cylindrical. Outer crown of the ſeed ſhort, lobed, and crenate.—The native country of this common garden biennial is unknown, for the term *indica* throws little light on the ſubject. The plant is valued for the ſingularly deep red of its large and copious *flowers*, and eſpecially for their rich muſky ſcent, which ſeems to convey a ſort of warmth as we inhale it.

S. *argentea.* Silvery Scabious. Linn. Sp. Pl. 145. Willd. n. 27. Ait. n. 20. Sm. Fl. Græc. Sibth. v. 2. 9. t. 108. "Desfont. Ann. du Muſ. v. 11. 167. t. 24."—Corollas five-cleft, radiating, entire, the length of the calyx. Leaves pinnatifid, acute, hairy.—Native of the Levant; found by Tournefort, and introduced by him into the gardens of France and England, where it is hardy and perennial, flowering from June to the end of autumn. Dr. Sibthorp met with this ſpecies between Corinth and Elis, as well as in maritime ſituations near Conſtantinople, and by the road from Smyrna to Burſa. The *plant*, except being perennial, agrees in habit with our *eburnea*, but the *flowers* are ſmaller, of a purer white, with entire edges, and the common *calyx* does not extend beyond them. The lobes of the *leaves* too are more numerous, crowded, and acute.

S. *brachiata.* Spreading-branched Scabious. Sm. Fl. Græc. Sibth. v. 2. 9. t. 109. (Knautia palæſtina; Linn. Mant. 197. Willd. Sp. Pl. v. 1. 562; ſee KNAUTIA.)—Corollas five-cleft, radiating, crenate. Leaves ſcarcely divided. Outer crown of the ſeed membranous, pierced underneath.—Found in Paleſtine by Haſſelquiſt; in fields in Cyprus by Dr. Sibthorp. The *root* is ſmall and annual. *Stem* erect, a foot or thereabouts in height, with a few ſtiff, oppoſite, ſpreading *branches*. *Leaves* of a glaucous green, hairy on both ſides; the lower ones obovate, undivided, ſtalked, crenate; the upper much narrower and ſharper, ſometimes pinnatifid at their baſe. *Flowers* on long hairy ſtalks, light purple, with a large radius, whoſe *florets* are crenate. The outer coat of the *ſeed* is crowned with a membranous border, elevated on ten ribs, with intermediate perforations; inner crown of ten hairy rays.

S. *Sibthorpiana.* Sibthorpian Scabious. Sm. Fl. Græc. Sibth. v. 2. 10. t. 110.—Corollas five-cleft, radiating, entire. Leaves pinnatifid at the baſe. Outer crown of the ſeed membranous, pierced underneath.—Gathered by Dr. Sibthorp, in Cyprus, with the preceding. As he eſteemed it a diſtinct ſpecies, and had a drawing prepared for the *Flora Græca*, this plant could not but find a place in that work, though we greatly ſuſpect it to be only a variety of the laſt, with more luxuriant herbage, the edges of the *corolla* being poſſibly ſometimes entire, ſometimes crenate.

S. *plumoſa.* Feathery-topped Scabious. Sm. Fl. Græc. Sibth. v. 2. 11. t. 111. (S. cretica, capitulo pappos mentiente; Tourn. Cor. 34, on the authority of his herbarium. Knautia plumoſa; Linn. Mant. 197. Willd. Sp. Pl. v. 1. 4.)—Corollas five-cleft, radiating, acute. Leaves lyrate. Outer crown of the ſeed obſolete; inner feathery.—Plentiful on the rocks of Crete. This has the habit of the two laſt. All the *leaves* are lyrate. The ſtructure of the *flowers* is very different, the ſegments of the marginal *florets* being elongated and very acute, tipped with dark red; the outer covering of the *ſeed* has no marginal dilatation; the inner crown conſiſts of eleven or twelve long, linear, purpliſh, feathery rays.

S. *involucrata.* Leafy-headed Scabious. Sm. Fl. Græc. Sibth. v. 2. 11. t. 112. (S. pappoſa; Gærtn. t. 86. Linn. Sp. Pl. ed. 1. 101, excluding Tournefort's ſynonym, which belongs to our foregoing ſpecies; nor is this what Linnæus ſubſequently called *pappoſa.*)—Corollas five-cleft, radiating, acute. Leaves doubly pinnatifid. Outer crown of the ſeed minute. Common calyx pinnatifid.—Native of little hills in Crete and Cyprus, flowering in June. This alſo has a ſmall annual *root.* The *ſtem* is about a foot high, with a few divaricated branches. *Leaves* hoary, villous, with many narrow decurrent ſegments. *Flowers* pink, encompaſſed with a large, leafy, ſpreading *calyx.*

S. *pterocephala.* Wing-headed Scabious. Linn. Sp. Pl. 146. Willd. n. 41. Sm. Fl. Græc. Sibth. v. 2. 12. t. 113. —Corollas five-cleft, radiating. Stem procumbent, ſhrubby. Leaves lyrate, cut, downy. Inner crown of the ſeed feathery.—Gathered by Dr. Sibthorp on the rocky parts of mount Parnaſſus. The *roots* are perennial, woody, very long, and much branched, throwing up numerous, ſmall, ſhrubby, procumbent *ſtems,* with ſhort leafy branches, which all together compoſe denſe tufts, covered with hoary lyrate *leaves,* and crowned with large, light-purple, ſolitary *flowers,* of great beauty, on *ſtalks* of a moderate length. The outer crown of the *ſeed* is very ſmall; the inner of numerous, ſeſſile, feathery rays. Vaillant eſtabliſhed a genus called *Pterocephalus,* of which this was a ſpecies, and hence Linnæus choſe his ſpecific name; but he might eaſily have invented one more appropriate and diſcriminative.

S. *coronopifolia.* Buck's-horn Scabious. Sm. Fl. Græc. Sibth. v. 2. 13. t. 114.—Corollas five-cleft, radiating, toothed. Stem procumbent, ſhrubby. Leaves doubly pinnatifid, ſmoothiſh. Inner crown of the ſeed rough; outer dilated, notched.—We have not been able to aſcertain that Dr. Sibthorp met with this ſpecies in any part of Greece. A Sicilian ſpecimen of the ſame, from Mr. Bivona, rather induces a ſuſpicion of the doctor's having gathered his plant in that iſland, as is the caſe with a few others, which, being new, he nevertheleſs deſtined for the Flora Græca. The habit, and it is to be preſumed the natural ſtation of the plant before us, are ſimilar to the laſt. The ſhrubby, branched, depreſſed *ſtems* are clothed with narrowly divided, thick, and rather fleſhy *leaves,* occaſionally ſmooth or hairy. *Flowers* large and handſome, on long, ſolitary, hairy ſtalks. *Corolla* light purple, ſtriated with darker veins.

Scabiosa, in *Gardening,* contains plants of the herbaceous, annual, biennial, perennial, and ſhrubby kinds, of which the ſpecies moſtly cultivated are; the alpine ſcabious (S. alpina); the ſnowy ſcabious (S. leucantha); the devil's-bit ſcabious (S. ſucciſa); the red-flowered annual ſcabious (S. integrifolia); the giant ſcabious (S. tartarica); the cut-leaved ſcabious (S. gramuntia); the ſtarry ſcabious (S. ſtellata); the ſweet ſcabious (S. atro-purpurea); the ſilvery ſcabious (S. argentea); the graſs-leaved ſcabious (S. graminifolia); the African ſcabious (S. africana); and the Cretan ſcabious (S. cretica).

The ſeventh ſort varies with different jagged leaves, and with red and white flowers.

In the eighth ſort the flowers are very ſweet, and there is a great variety in their colour, ſome being of a purple approaching to black, others of a pale purple, ſome red, and others variegated. It alſo varies in the leaves, ſome being finer cut than others: and ſometimes from the ſide of the calyx come out many ſlender peduncles ſuſtaining ſmall flowers, like the (proliferous or) hen-and-chicken daiſy.

In the eleventh ſort, the variety with the leaves finely cut, has, according to the late edition of Miller, the ſtalks hairy, and dividing into ſeveral branches: the bottom leaves are lanceolate, crenate, and entire; but thoſe on the upper part of the ſtalk are bipinnate: the flowers are produced on long naked footſtalks from the end of the branches; are of a pale fleſh-colour, and large, but have no ſcent.

In the twelfth ſort, according to the new edition of Miller, the plant from Candia has ſhorter and much broader leaves, and not ſo white as thoſe of the Sicilian; the flowers are not ſo large, and are of a pale purple colour.

Method of Culture.—All the annual and biennial ſorts may be increaſed by ſeed, which ſhould be ſown in a bed or border of common mould, or in pots, to be forwarded in the hot-bed in the early ſpring months; but the biennial ſort is better ſown in the latter end of the ſummer, as about Auguſt, as they flower ſtronger and more fully the following ſummer. Some may, however, be ſown at both ſeaſons. And when the plants have attained ſome growth, in the ſpring-ſown ſort, they ſhould be pricked out into the places where they are to grow, on beds, to be afterwards removed: and in the autumn-ſown ſorts into nurſery-rows, ſix or eight inches apart, to be removed into the places where they are to remain, with balls about their roots, in the following ſpring, being duly watered and kept free from weeds.

But the ſtarry ſort is beſt ſown in patches in the borders or clumps where the plants are to flower.

And the herbaceous perennial kinds may be readily increaſed by ſowing the ſeeds in a bed or border of good light earth, in the ſpring ſeaſon, the plants being planted out when they have attained a little growth, where they are to grow: they are alſo capable of being raiſed by parting the roots, and planting them out where they are to grow in the autumn.

All the ſhrubby kinds may be readily raiſed by planting ſlips or cuttings of the young branches in the ſpring or ſummer ſeaſon, in the former ſeaſon in pots, and plunged in a moderate hot-bed, or under a glaſs-frame; but in the latter, in the open ground, being well ſhaded and watered. They ſoon become tolerably well-rooted, and in the autumn may be potted off into ſeparate pots filled with light loamy earth, and managed in the ſame manner as other exotic greenhouſe plants during the winter.

All the annual and perennial ſorts afford ornament and variety among other plants of the flower kind in the borders, &

&c. and the ſhrubby kinds produce variety in greenhouſe collections, and other protected ſituations.

Scabiosa, *Scabious*, in the *Materia Medica*. The common ſcabious of our corn-fields has been accounted a great alexipharmic and pectoral, and made an ingredient in ptiſans, and infuſions given in coughs and all diſorders of the lungs, and recommended greatly by authors in pleuriſies, quinzies, coughs, aſthmas, and conſumptions. Some have recommended it in malignant fevers, and even in the plague.

It has been alſo uſed externally, either in a ſtrong decoction, or elſe boiled into an ointment with lard, in the itch, and many other diſorders of the ſkin; whence it has its names, *viz.* from *ſcabies*, *itch;* and upon which account it was formerly often met with in decoction, and ſometimes in a ſyrup, among ſuch things as are called ſweeteners: but it ſeems now, in a great meaſure, to have loſt its credit and uſe.

SCABIOUS, Sheep's, in *Botany*. See Jasione.

SCABRITA, ſo named by Linnæus, from *ſcaber*, rough, becauſe of the remarkable roughneſs of the leaves. See Nyctanthes.

SCABROUS Leaf. See Leaf.

Scabrous *Stalk*. See Stalk.

SCAD, in *Ichthyology* the Engliſh name of a fiſh, reſembling the mackarel in ſhape, called by writers the *trachurus*. See Scomber *Trachurus*.

SCADRANK, in *Geography*, a town of Pruſſia, in the province of Natangen; 3 miles N. of Marggrabowa.

SCAEN, a town of France, in the department of Finiſterre, and chief place of a canton, in the diſtrict of Quimperle; 10 miles N.N.W. of Quimperle. The place contains 4100, and the canton 9009 inhabitants, on a territory of 190 kiliometres, in three communes.

SCÆNANTH, or Schænanth, in the *Materia Medica*, the dried ſtalk of a plant brought to us from Arabia.

This plant is called, by the generality of botaniſts, *juncus odoratus*, and *aromaticus;* but Linnæus gives it the name of *iſchæmum*, under which head its botanical characters are deſcribed.

The ſtalk is uſually eight or ten inches in length, ſometimes conſiderably more; it is ſmooth and gloſſy on the ſurface, and about the thickneſs of a wheat-ſtraw, but much more rigid and firm. It is round, jointed, and not ſolid, but has a cavity in it filled with a central pith, like that of our common ruſhes. Its colour is yellowiſh at the baſe, or toward the root, but toward the top it is purpliſh or greeniſh; it is very light, yet conſiderably hard, and is of a fragrant aromatic ſmell, in which we may diſcover ſomething of a mixed ſcent, between that of the roſe and penny-royal. Its taſte is acrid and bitteriſh, but not unpleaſant.

It ſhould be choſen freſh, ſound, and clean, not duſty or decayed, of a good ſmell and ſtrong acrid taſte.

The word *ſchænanth*, ſignifying the flower of the ruſh, might naturally lead us to ſuppoſe, that what we now receive under that name, is not the drug that was ſo called by the ancient Greeks and Romans, and ſome have very vigorouſly ſupported this opinion. But on enquiry into the Grecian materia medica, we find that none of their ſchænanth had flowers on it any more than ours.

The ancients uſed the whole plant in medicine, ſtalk, leaves, and flowers; its virtue reſided pretty equally in every part of it, as is manifeſt from every part's poſſeſſing the ſame ſmell and taſte, and having the ſame pungency in the mouth.

They preſcribe it as a deobſtruent and promoter of the menſes: but at preſent it is never heard of in extemporaneous preſcriptions, only kept as an ingredient in ſome compoſitions.

SCÆVOLA, in *Botany*, a Linnæan name, apparently derived, as De Theis well imagines, from *ſcæva*, the left hand, or a left-handed perſon; becauſe of the direction of the corolla towards one ſide, which gives the flower an oblique and imperfect appearance.—Linn. Mant. 2. 145. Schreb. 121. Willd. Sp. Pl. v. 1. 955. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 1. 364. Brown Prodr. Nov. Holl. v. 1. 582. Juſſ. 165. Lamarck Illuſtr. t. 124. (Lobelia; Plum. Gen. 21. t. 31. Gærtn. t. 25.)—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Campanaceæ*, Linn. *Campanulaceæ*, Juſſ. *Goodenoviæ*, Brown.

Gen. Ch. *Cal.* Perianth ſuperior, of one leaf, very ſhort, in five equal ſegments, permanent, ſometimes obſolete. *Cor.* of one petal, unequal; tube long, hairy internally, with a longitudinal fiſſure, through which the organs of impregnation are protruded; limb all turned to one ſide, in five deep, oblong, equal, membranous-bordered ſegments. *Stam.* Filaments five, ſhort, capillary, inſerted into the receptacle, finally flaccid, deciduous with the corolla (*Brown*); anthers diſtinct, erect, oblong, obtuſe, ſometimes bearded. *Piſt.* Germen inferior, ovate; ſtyle thread-ſhaped, thickened upwards, longer than the ſtamens, projecting out of the fiſſure of the tube, and incurved towards the limb; ſtigma compreſſed, obtuſe, with a fringed integument. *Peric.* Drupa roundiſh, umbilicated, either dry or pulpy, of one cell. *Seed.* Nut ovate, acute, rugged, moſtly of two cells.

Eſſ. Ch. Corolla ſplit longitudinally at one ſide, protruding the organs of impregnation; limb in five deep, bordered, uniform ſegments, turned one way. Anthers diſtinct. Integument of the ſtigma fringed. Drupa inferior.

Mr. Brown, who has well defined this genus, and augmented its ſpecies from the three in Willdenow, to twenty-four at leaſt, has thus explained its leading characters. The ſpecies are either ſhrubby or herbaceous, of various aſpects, their pubeſcence, if any, ſimple. *Leaves* alternate, rarely oppoſite, ſcarcely divided, often toothed. *Infloreſcence* axillary, or diſpoſed in a leafy ſpike. *Germen* ſubtended by two bracteas, moſtly of two cells, rarely four, with one ſeed in each; occaſionally of one cell, with one or two ſeeds. *Corolla* white or blue, rarely yellowiſh, deciduous, for the moſt part downy at the outſide, the wings of its ſegments often fringed, at leaſt at the baſe, with minute woolly tufts; the tube villous within, its mouth ſhaggy with ſimilar tufts to thoſe of the ſegments, and placed in lines confluent therewith.

The following examples will give an idea of the genus.

S. *Lobelia*. Shrubby Purſlane-leaved Scævola. Willd. n. 1. Ait. n. 1. (Lobelia Plumieri; Linn. Sp. Pl. 1317. Jacq. Am. 219. L. fruteſcens, portulacæ folio; Plum. Ic. t. 165. f. 1. "Cateſb. Carol. v. 1. t. 79.")—Leaves obovate, ſmooth, entire. Calyx undivided, very ſhort.—Native of the Weſt Indies. Cateſby is ſaid to have communicated it to the Chelſea garden in 1724; but we believe none of the plants exiſt, at preſent, in any collection. This is a fleſhy, ſcarcely milky, inelegant *ſhrub*, with rugged *branches*, leafy at the top. *Leaves* ſtalked, two or three inches long, abrupt, fleſhy. *Flowers* very few together, in axillary, ſolitary, ſtalked *cymes*. *Corolla* yellowiſh-white. *Drupa* ſucculent, black.

S. *Koenigii*. Eaſt Indian Shrubby Scævola. Willd. n. 2. Brown. n. 1.—Cymes ſmooth. Flowers with partial ſtalks. Calyx as long as the germen. Leaves obovate, ſomewhat wavy at the end, very ſmooth, as well as the branches.—Native of the Eaſt Indies, and of the tropical part of New Holland. Larger than the former, with more numerous *flowers*.

S. *ſericea*. Silky Scævola. Forſt. Prodr. 89. Willd. n. 3.

n. 3. Brown. n. 2. Vahl. Symb. v. 2. 37.—Cymes and outſide of the corolla downy. Flowers with partial ſtalks. Calyx as long as the germen. Leaves obovate, ſomewhat wavy, clothed on both ſides, as well as the branches, with ſoft down. Native of Savage iſland, and of the tropical part of New Holland. According to Mr. Brown, this ſcarcely differs, but in its downineſs, which is variable, from the laſt.

S. *craſſifolia*. Thick-leaved Scævola. Labill. Nov. Holl. v. 1. 56. t. 79. Brown. n. 5. Ait. n. 2.—Shrubby, aſcending, very ſmooth. Leaves rather fleſhy, toothed, obovate or lanceolate. Bracteas undivided. Covering of the ſtigma but ſlightly fringed.—Native of the ſouthern ſea-coaſt of New Holland. Sent to Kew, by Mr. Brown, in 1805. A greenhouſe ſhrub, flowering from Auguſt to October. The *flowers* are much ſmaller than the laſt, in long bracteated ſpikes. *Branches* and *leaves* often purpliſh.

S. *microcarpa*. Small-fruited Scævola. Cavan. Ic. v. 6. 6. t. 509. Brown n. 12. Ait. n. 3. (Goodenia albida; Sm. Tr. of Linn. Soc. v. 2. 347; ſee Goodenia. Willd. Sp. Pl. v. 1. 954. G. lævigata; Curt. Mag. t. 287. Willd. ibid.)—Herbaceous, downy. Leaves roundiſh-wedge-ſhaped, toothed; tapering at the baſe. Bracteas toothed. Calyx lobed. Hairs in the mouth of the corolla ſimple or capitate. Style longitudinally villous. Germen of one cell, with rudiments of two ſeeds. Native of New South Wales, and Van Diemen's land. A greenhouſe plant, flowering all ſummer, various in habit, with blue or white *flowers* in leafy *ſpikes*.

S. *ſuaveolens*. Sweet-ſcented Scævola. Brown n. 14. Ait. n. 4. (Goodenia calendulacea; Andr. Repoſ. t. 22.)—Herbaceous, diffuſe, downy. Leaves ſpatulate, fleſhy; with axillary hairs. Bracteas linear-lanceolate.—Native of various parts of New Holland, ſent to Kew in 1793. *Flowers* blue, with a yellow tube. *Leaves* entire, much thicker than in the preceding.

SCAFATA, La, in *Geography*, a village of Naples, that has a bridge over the Sarno, near which Teia, king of the Goths, was defeated by Narſes, in the year 553. A pond in this place is ſuppoſed to poſſeſs great medical virtue, and on the anniverſary of the feaſt of the Virgin, many people reſort hither to bathe.

SCAFFOLD, a timber work, raiſed in manner of an amphitheatre, to place ſpectators upon for the commodious viewing of ſome ſhow or ceremony.

Some derive the word from the German *ſchawhaus*, which ſignifies the ſame, compounded of *ſchawen*, *to look*, *view*; and *haus*, *houſe*. Guyet derives it from the Italian *catafalco*, which ſignifies the ſame thing. Du-Cange, from *eſchafaudus*, a word in the corrupt Latin, ſignifying a *tribunal* or *pulpit*: he adds, that it might come originally from *cata*, a wooden machine uſed to carry earth to fill up ditches, and carry over the ſoldiers to the attack: whence the Italians formed their *catafalco*, the old French their *chafaut*, the monks their *ſcaffaldus*, and finally the Engliſh their *ſcaffold*.

Scaffold is alſo uſed for a little ſtage, or theatre, raiſed in ſome public place, to execute criminals upon, either by beheading, or breaking upon the wheel.

Scaffold, or *Scaffolding*, is alſo uſed for an aſſemblage of planks and boards, ſuſtained by treſſes, or by pieces of wood fixed in the wall, whereon maſons, ſculptors, painters, &c. ſtand to work in high places, cielings, &c.

SCAGEN, Scavn, or *Skagen*, in *Geography*, a town of Denmark, at the extremity of North Jutland, near a cape of the ſame name; the inhabitants ſubſiſt partly by fiſhing, and partly by carrying on a little trade, and piloting ſhips about theſe dangerous coaſts, to and from the Baltic. The ſand-bank called "Scagen's Reef," or "Scaggerac," or "Grenan," extends from cape Skagen far into the ſea, on which account a large coal-fire is conſtantly maintained there in the winter nights, as a kind of beacon for ſhips to avoid it. With this view a new tower, ſixty-four feet high, was erected in 1751, oppoſite to this ſand-bank, on the ſpot where formerly ſtood a light-houſe, which had been demoliſhed by the violence of the ſea; 18 miles N. of Fladſtrand. N. lat. 57° 46′. E. long. 10° 33′.

Scagen, a cape on the north coaſt of North Jutland. N. lat. 57° 46′. E. long. 10° 31′.

SCAGLIOLA is an imitation of marble of any ſort, with reſpect to which the artiſt ſucceeds in an aſtoniſhing degree with the moſt beautiful marbles, ſuch as Sienna, jaſper, brocatello, and porphyry: it is hard, and when finiſhed, bears a very fine poliſh. It is laid on brick in the manner of ſtucco, and worked off with iron tools. The Pantheon, in Oxford-ſtreet, had all its columns formed of this material, and, when firſt done, they appeared as well as the original marble, and, without accident, laſt for a great number of years, without any material diminution of their beauty.

SCALA, in *Anatomy*. The cochlea, or inner cavity of the ear, is divided by a ſeptum into two canals, called *ſcalæ*: of which the one, looking towards the tympanum, is called the *ſcala tympani*; the other, having a communication with the veſtibulum, is called the *ſcala veſtibuli*. See Cochlea, Ear, Tympanum, and Vestibulum.

Scala, in the *Ancient Architecture*, denotes what in the modern we call a *ſtair-caſe*.

Scala, Bartolommeo, in *Biography*, an Italian man of letters, was ſon of a miller at Colle, in the Florentine territory; he was born about the year 1430, and coming to Florence in a ſtate of indigence, he applied himſelf to learning with ſo much ſucceſs, that he attracted the notice of Coſmo de Medici, who took him into his ſervice, and brought him afterwards into public life. In the courſe of time he attained the important offices of chancellor and gonfalonier of the republic, and was enrolled in the ſenatorian and equeſtrian orders. In 1484 he was ſent ambaſſador to pope Innocent VIII., who gave him the title of knighthood, and made him apoſtolic ſecretary. Upon his return, for ſome cauſe that is not known, he was excommunicated, which rendered it neceſſary for him to go again to Rome for abſolution. His offices in the ſtate were a ſource of great wealth, which he expended in a moſt oſtentatious manner, having a ſuperb palace in Florence, beſides a magnificent villa near it, and appearing in public with a numerous retinue. Though he was never aſhamed to acknowledge his mean parentage and original poverty, he ſpoke of himſelf in a high ſtyle of conſequence, which was probably one cauſe of a quarrel with the celebrated ſcholar Angelo Politiano; though the chief cauſe of this was his jealouſy of the ſuperior talents of Politiano, who was frequently applied to by Lorenzo de Medici to correct the diſpatches drawn up by Scala. A literary conteſt was excited between them, which produced much mutual abuſe. The reputation of Scala does not appear to have been injured by it, for he continued to live in proſperity, and held all his offices of profit, truſt, and honour till his death, in 1497. As a literary character, we have his "Apologues," which obtained the higheſt commendations from Landino and Ficino; "Poems," both in Latin and Italian; "Orations;" and "A General Hiſtory of Florence," intended to conſiſt of twenty books, but of which he only finiſhed four, with part of a fifth, brought down to the time of Charles I. king of Naples. Theſe were firſt printed at Rome in 1677. He had a daughter, Aleſſandra, equally celebrated for her learning and her beauty. She ſtudied Greek under Laſcaris and

Chalcondyles. Some of her epigrams in that language are extant, with a Latin letter of her own compoſition. She married MARULLUS, a famous Latin poet. See his article.

SCALA, in *Geography*, a town of the iſland of Cephalonia; 16 miles S.E. of Cephalonia.—Alſo, a town of Naples, in Principato Citra, the ſee of a biſhop, under the pope; celebrated for its wine and honey, and for lead-mines in its vicinity; 11 miles W.S.W. of Amalfi.—Alſo, a town of Naples, in Calabria Citra; 3 miles S.W. of Cariati Vecchia.—Alſo, a town of Poland, in Podolia; 15 miles S.W. of Kaminiec.—Alſo, a town of Sicily, in the valley of Demona; 12 miles S. of Meſſina.

SCALA, *La*, a ſea-port on the N.E. coaſt of the iſland of Patmos, having one of the beſt harbours in the Archipelago. N. lat. 37° 30′. E. long. 26° 23′.

SCALADA, a town of Sicily, in the valley of Demona; 9 miles S. of Meſſina.

SCALADO, or SCALADE. See ESCALADE, and *Scaling-*LADDERS.

SCALÆ GEMONIÆ. See GEMONIÆ.

SCALANOVA, in *Geography*, a well-built, paved, and handſome ſea-port town of Aſiatic Turkey, in Natolia. The Greeks have a church in the ſuburbs, to which Chriſtians are confined. When Mr. Tournefort viſited the place, it contained 1000 families of Turks, 600 of Greeks, 10 of Jews, and 60 of Armenians. The trade, which is not conſiderable, conſiſts chiefly in wine, raiſins, corn, and leather. This was the "Neapolis" of the Mileſians, and ſome marble monuments ſtill remain; 40 miles S.S.E. of Smyrna. N. lat. 37° 52′. E. long. 27° 29′.

SCALARE, in *Natural Hiſtory*, a name given by Rumphius to a peculiar ſpecies of turbo, or *ſcrew ſhell*; the ſeveral wreaths of which, having an opening between them, form an open ſpiral.

SCALD. See BURN.

SCALD *and burns*, *Liniment for*. See LINIMENT.

SCALDED CREAM, in *Rural Economy*, ſuch cream as is raiſed by means of heat, uſually denominated *clotted* or *clouted* cream. The proceſs is performed by putting the ſtrained milk in its natural warm ſtate into large, ſhallow, braſs-tinned or earthen pans; which have a ſmall quantity of cold water in them, by which burning is ſuppoſed to be prevented, and the cream more perfectly ſeparated and thrown up to the top. After ſtanding a ſhort time in this way, the pans are to be carried to, and placed over a clear ſlow fire, for which charcoal is the beſt, or over a ſtove, as in this manner the cream is not ſo liable to acquire a ſmoky taſte. The heat is to be ſo regulated, as not to ſuffer the milk to *heave* or boil, as the cream in that caſe would be much injured. The ſcalding is ſhewn to be ſufficiently done by the pans, in ſome caſes, throwing up the forms of their bottoms to the ſurface of the cream; and in others by the appearance and texture of it, the wrinkles becoming ſmaller, and the ſurface more leathery. In the ſummer the operation ſhould be performed more quickly than in the winter ſeaſon, as in the former, when the fire is too ſlow, the milk is apt to run or curdle.

On the ſcalding being finiſhed, the pans are placed, in the hot ſeaſon, in ſome cold ſituation in the dairy, but in the winter in a rather warm one, ſo as to preſerve the heat, as too ſudden cooling cauſes the cream to be thin. See CREAM and DAIRYING.

SCALDERINGS, in *Agriculture*, the under-burnt core of ſtone-lime, the external parts of which peel or bliſter off in ſcales or ſhells.

SCALDS, in the *Hiſtory of Literature*, a name given by the ancient inhabitants of the northern countries to their poets; in whoſe writings their hiſtory is recorded.

They were called "Scaldi," or "Scaldri," as ſome ſay, from the ſound *ſkal*, often heard in their verſes and poems; and the dialect in which they wrote was called "Aſamal," that is, the Aſiatic dialect, becauſe it was brought by Woden or Odin out of Aſia, who is alſo ſaid to have brought with him the Runic characters, and to have taught the northern nations the art of poetry. The learned Torfæus, a native of Iceland, and hiſtoriographer of Norway, ſuggeſts (Præfat. ad Orcades, fol.) that the word *Scald* ſignified originally, "a ſmoother and poliſher of language." Whatever was the origin of their name, they were an order of poets or ſingers, who were imported into Europe by the Goths, who migrated from the Eaſt with Odin, and were diſperſed among the northern nations, particularly in Scandinavia. (See ODIN and SCANDINAVIA.) Theſe men were held in the higheſt veneration; they were employed to compoſe odes or ſongs, which related all the moſt illuſtrious exploits of the ancient Scandinavians, and ſometimes the whole hiſtory of their lives. They attended the feſtivals of heroic chiefs, accompanied them in battle, and celebrated their victories. Their ſongs were propagated from one reciter to another; and there was no public ſolemnity in which they were not ſung or chanted. The praiſes which theſe poets gave to valour, the warlike enthuſiaſm which animated their verſes, the great care which men took to learn them from their infancy, being all of them the natural effects of the ruling paſſion of theſe people, ſerved in their turn to ſtrengthen and extend it. At a period when the uſe of letters was very limited, verſe was a neceſſary medium of knowledge, and the poet was an eſſential officer of the ſtate; and as it required a peculiar and uncommon genius to excel in this art, the profeſſors of it would of courſe acquire a very high degree of eſteem and reſpect, and receive for their verſes the moſt liberal rewards. All the hiſtorical monuments of the North teſtify in the moſt ample manner the honours that were paid to this order of men both by princes and people; nor can the annals of poetry produce any age or country which reflects more glory and luſtre upon it. The ancient chronicles repreſent the kings of Denmark, Norway, and Sweden, as attended by one or more Scalds. They were more eſpecially honoured and careſſed at the courts of thoſe princes who diſtinguiſhed themſelves by their great actions and paſſion for glory. Harold Harfagre, *e. g.* placed them at his feaſts above all the other officers of his court. Many princes entruſted them, both in peace and war, with commiſſions of the higheſt importance. They never ſet out on any conſiderable expedition without ſome of them in their train. Hacon, earl of Norway, had five celebrated poets in the famous battle, when the warriors of Jomsburg were defeated; and hiſtory records that each of them ſung an ode to animate the ſoldiers before they engaged. Torfæus produces other inſtances to the ſame purpoſe; particularly that of Olave, king of Norway, who placed three of his Scalds near him to be witneſſes of his exploits; each of whom compoſed a ſong on the ſpot, which Bartholin has printed and accompanied with a Latin verſion. Other ſongs of the ſame kind may be found preſerved by the ſame author. They alſo enjoyed another advantage, which would be more an object of envy to the poets of theſe days. They were rewarded for the poems they compoſed in honour of the kings and heroes with magnificent preſents. The Scald never ſang his verſes at the courts of princes without a recompence of golden rings, glittering arms, and rich apparel. Their reſpect for this order of men often extended ſo far as to induce them to remit the puniſhment of crimes which they had committed, on condition they ſued out their pardon in verſe; and we have ſtill extant an ode, by which Egill, a celebrated poet, atoned for a murder of which he had been guilty. In a word, the poetic art was held in ſuch high eſtimation, that great lords, and even kings, did not themſelves diſdain to cultivate it with the utmoſt pains. Rogvald, earl of the Orkney iſlands, paſſed for a very able poet. King Regner was no leſs diſtinguiſhed for his ſkill in poetry than in war and navigation; and it is well known that he died no leſs like a poet than a hero.

The reſpect, however, which the northern nations paid to their Scalds was not owing to the nobility of their extraction. A people whoſe object was glory, could not fail of ſhewing a great deference to thoſe who both publiſhed it abroad, and conſigned it to futurity, let their original be what it would. A prince or illuſtrious warrior oftentimes expoſed his life with ſo much intrepidity only to be praiſed by his Scald, who was both the witneſs and judge of his bravery. It is affirmed that this kind of men, although poets, were never guilty of flattery, and never laviſhed their praiſes on heroes and kings themſelves, unleſs their gallant exploits were quite inconteſtible. Hence aroſe the cuſtom of always bringing them into the ſcene of action: Olave, king of Norway, placing three of them one day around him in battle, cried out with ſpirit, "You ſhall not relate what you have only heard, but what you are eye-witneſſes of yourſelves." The ſame poets uſually ſung their verſes themſelves at ſolemn feſtivals and in great aſſemblies, to the ſound of the flute or harp. But the ſubject of theſe poems was not confined to one ſingle event, ſuch as a victory or ſome generous action; it was frequently a genealogical hiſtory of all the kings of the country, deduced down from the gods to the reigning prince, who always derived his origin from them. Theſe poems were, according to Tacitus, the only annals of the Germans: they had great numbers of them, which were not wholly forgotten in the eighth century; ſince Eginhard relates, that Charlemagne cauſed them to be committed to writing.—"And even learnt himſelf," adds the hiſtorian, "the rude and ancient ſongs in which the exploits and the wars of the firſt princes were celebrated." In poems of the ſame kind conſiſted for many ages all the hiſtory of the Scandinavians. A bard named Thiodolfe, celebrated in his verſes the exploits of Harold and thirty of his predeceſſors; another called Eyvind, compoſed an hiſtorical poem which went back as far as Odin. Such are the ſources whence Saxo drew his materials for the firſt ſix or ſeven books of his hiſtory; and he might doubtleſs have derived great aſſiſtance from them, if he had not happened to live in an age wholly deſtitute of that exact ſkill in criticiſm, which knows how to ſeparate facts from the fictions with which they are blended.

The neceſſity there was for poets, the natural attractions of the art itſelf, and thoſe it derived from the manners of the age, greatly mutiplied the number of Scalds. An ancient Icelandic manuſcript has preſerved a liſt of all ſuch as diſtinguiſhed themſelves in the three northern kingdoms, from the reign of Regner Lodbrog to that of Valdemar II. They are in number two hundred and thirty, among whom we find more than one crowned head. But what is not leſs remarkable is, that moſt of them are natives of Iceland.

The ſtile of theſe ancient poems is very enigmatical and figurative, very remote from the common language, and for that reaſon, grand, but tumid; ſublime, but obſcure. If it be the character of poetry to have nothing in common with proſe, if the language of the gods ought to be quite different from that of men, if every thing ſhould be expreſſed by imagery, figures, hyperboles, and allegories, the Scandinavians may rank in the higheſt claſs of poets: nor is this unaccountable. The ſoaring flights of fancy may poſſibly more peculiarly belong to a rude and uncultivated, than to a civilized people. The great objects of nature ſtrike more forcibly on rude imaginations. Their paſſions are not impaired by the conſtraint of laws and education. The paucity of their ideas, and the barrenneſs of their language, oblige them to borrow from all nature images fit to clothe their conceptions in.

The moſt affecting and moſt ſtriking paſſages in the ancient northern poetry, were ſuch as now ſeem to us the moſt whimſical, unintelligible, and overſtrained: ſo different are our modes of thinking from theirs. We can admit of nothing but what is accurate and perſpicuous. They only required bold and aſtoniſhing images, which appear to us hyperbolical and gigantic. What alſo contributes to render their poetry very obſcure at preſent, is, that the language of it is borrowed from their mythology; a mythology not ſo familiar to us as that of the Greeks and Romans. When they did not allude to their own fables, they took their metaphors from other ſubjects, which were commonly very far-fetched and remote. Each of their deities might be expreſſed by an infinite variety of phraſes. In ſhort, a peculiar ſtudy of this kind of language was neceſſary to conſtitute a poet; for which reaſon they early compoſed a dictionary of it for the uſe as well of the Scalds as their readers. The ſame Rogvald, earl of the Orkneys, before ſpoken of, is ſaid to have compoſed a work of this ſort, which, according to Wormius, is ſtill extant, under the name of the Poetical Key. Another is found at the end of the Icelandic Edda, and is intitled Scalda, or the Art of Poetry. This is a collection of epithets and ſynonimous words ſelected from their beſt poets, very like thoſe which are put into the hands of young people when they firſt apply themſelves to Latin poetry.

Yet they ſometimes compoſed verſes in a more ſimple ſtile, and nearer approaching to common language; but this only happened when in converſation a Scald, either to ſhew his happy talent, or to do more honour to the perſon with whom he converſed, anſwered in extemporary metre. This ſingular mode of expreſſing themſelves was very common among the ancient Scandinavians, and proves in what degree of eſteem this people held the art of poetry. The chronicles have preſerved a great number of ſuch converſations in verſe; and there is reaſon to believe that theſe poems, which might be ſung at firſt, and eaſily committed to memory, were oftentimes the text of which ſucceeding chronicles were nothing more than commentaries or expoſitions. There is no appearance that the verſes were compoſed by the authors of thoſe hiſtories: they are never aſſigned to any but the Scalds by profeſſion; and are quoted by the hiſtorians as their proofs and vouchers: and beſides, it is known to have been uſual with the Scalds to interlard their diſcourſe with extemporary verſes.

We are not to imagine that theſe poets were wholly unconfined by rules, or that they were not ſubject to ſuch as were very ſevere. It is an erroneous opinion, that rhyme was wholly unknown to the northern Scalds, and by parity of reaſon to all the Gothic poets: whereas it was undoubtedly from theſe that this modern ornament of verſe derived its origin and uſe.

The Scandinavian bards, of whom we have now given an account, appear to have been eſteemed and entertained in other countries beſides their own, and by theſe means to have probably communicated their fictions to various parts of Europe. The northern emigrants, who by their emigrations and invaſions viſited England, Ireland, Scotland, and the

Orkney iſlands, were undoubtedly attended by their Scalds or poets. And even in time of peace theſe Scandinavian Scalds, poſſeſſing a ſpecious and pleaſing talent, frequented the courts of the Britiſh, Scottiſh, and Iriſh chieftains. They were itinerants by their inſtitution, and made voyages out of curioſity, or in queſt of rewards, to thoſe iſlands or coaſts which lay within the circle of their maritime knowledge. By theſe means they eſtabliſhed an intereſt, rendered their profeſſion popular, propagated their art, and circulated their fictions in other countries, and at a diſtance from home. Torfæus (Præf. ad Orcad.) aſſerts poſitively, that various Icelandic odes now remain, which were ſung by the Scandinavian bards, before the kings of England and Ireland, and for which they received liberal gratuities. Wormius informs us (Lit. Dan. p. 195. 4to.) that the northern Scalds, in great numbers, conſtantly reſided in the courts of the kings of Sweden, Denmark, and England; from which circumſtance it has been inferred, that Odin's language was originally uſed, not only in Denmark, Sweden, and Norway, but even in England. From theſe ſuggeſtions it may be naturally concluded, that the Scandinavian tongue became familiar in the Britiſh iſlands by the ſongs of the Scalds; unleſs it be rather preſumed that a previous knowledge of that tongue in Britain was the means of facilitating the admiſſion of thoſe poets, and of preparing the way for their reception. Moreover, the fictions of Odin and of his Scandinavians muſt have taken ſtill deeper root in the Britiſh iſlands, at leaſt in England, from the Saxon and Daniſh invaſions. That the tales of the Scandinavian Scalds flouriſhed among the Saxons, who ſucceeded to the Britons, and became poſſeſſors of England in the ſixth century, may be juſtly preſumed; for the Saxons were a branch of the Scandinavian tribes, and boaſted of the deſcent of their princes from Odin. They imported with them into England the old Runic language and letters. And even after the converſion of the Saxons to Chriſtianity, when they became a more mild and poliſhed people, their poems were chiefly moral rhapſodies, ſcriptural hiſtories, or religious invocations, in which occur frequent alluſions to the old Scaldic fables and heroes.

As literature, together with true religion and civilization, gained ground among the Saxons, poetry was no longer regarded as a ſeparate ſcience, and the profeſſion of bard, under the appropriated characteriſtics and peculiar appointment which he ſuſtained among the Scandinavian Pagans, declined; and inſtead of the old Scaldic a new rank of poets aroſe, called *Gleemen* (correſponding to *Joculatores*), or harpers; and theſe probably gave riſe to the order of Engliſh minſtrels, who flouriſhed till the ſixteenth century.

The ſongs of the Iriſh bards are conceived by ſome perſons to be ſtrongly marked with the traces of Scaldic imagination, which are believed ſtill to ſurvive among a ſpecies of poetical hiſtorians called "tale-tellers," ſuppoſed to be deſcendants of the original Iriſh bards. Nor is it improbable, that the Welſh bards might have been acquainted with the Scandinavian Scalds. We may alſo obſerve, that the Scandinavians had conquered many countries bordering upon France in the fourth century; and hence the Franks muſt have been in ſome meaſure uſed to their language, well acquainted with their manners, and converſant in their poetry. We have reaſon alſo to believe, that many of the Scaldic imaginations might have been blended with the Arabian: ſo that the Gothic Scalds enriched their vein of fabling from this new and fruitful ſource of fiction opened by the Arabians in Spain, and afterwards propagated by the cruſades. The earlieſt Scald now on record is not before the year 750; from which time the Scalds flouriſhed in the northern countries till below the year 1157. We ſhall cloſe this article with obſerving, as a circumſtance ſomewhat remarkable, that in the earlier Scaldic odes, we find but few dragons, giants, and fairies: theſe were introduced at a later period, and are the progeny of Arabian fancy: the abſence of giants and dragons has been alleged as a ſtriking proof of the antiquity of the poems of Oſſian, by the advocates of their authenticity: nor are theſe fancies found in the Welſh odes of Talieſſin or Aneuric, who flouriſhed about the year 570. There is alſo the ſtrongeſt reaſon to ſuſpect, that even the Gothic "Edda," (which ſee,) or ſyſtem of poetic mythology of the northern nations, is enriched with thoſe higher ſtrokes of Oriental imagination, which the Arabians had communicated to the Europeans. Mallet's North. Ant. vol. i. Warton's Eng. Poet. Diſſ. I.

Scalds, in *Agriculture*, a provincial term uſed to ſignify ſuch patches of land as are more apt to be burnt up in hot ſeaſons, than other parts of the ſame land.

SCALE, a mathematical inſtrument, conſiſting of one or more lines drawn on wood, metal, or other matter, divided into equal or unequal parts, of great uſe in laying down diſtances in proportion, or in meaſuring diſtances already laid down.

There are ſcales of ſeveral kinds, accommodated to the ſeveral uſes; the principal are, the *plain ſcale*, the *diagonal ſcale*, *Gunter's ſcale*, and the *plotting ſcale*.

Scale, *Plain* or *Plane*, a mathematical inſtrument of very extenſive application and uſe. The lines generally drawn upon it are the following; *viz.*

		marked
1.	Lines of Equal Parts	E. P.
2.	—— Chords	Cho.
3.	—— Rhumbs	Ru.
4.	—— Sines	Sin.
5.	—— Tangents	Tan.
6.	—— Secants	Sec.
7.	—— Half-Tangents	S. T.
8.	—— Longitude	Long.
9.	—— Latitude	Lat.
10.	—— Hours	Ho.
11.	—— Inclinations	In. Mer.

1. The lines of equal parts are of two ſorts, *viz.* ſimply divided, and diagonally divided. The firſt of theſe are formed by drawing three lines parallel to one another, at unequal diſtances (ſee *Plate* XIII. *Geometry*, *fig.* 1.), and of any convenient length. Divide this length into any number of equal parts that may be thought neceſſary, allowing a certain number of theſe parts to an inch, ſuch as 2, 2½, 3, 3½, 4, 4½, &c. which diviſions are diſtinguiſhed by lines, croſſing the three parallels. Divide the left-hand diviſion into ten equal parts, diſtinguiſhed by lines croſſing only the lower parallels, but let the fifth diviſion be ſomewhat longer than the others. And it may be convenient to divide the ſame left-hand diviſion into twelve equal parts, laid down upon the upper parallel line, having the third, ſixth, and ninth diviſions diſtinguiſhed by longer ſtrokes than the reſt, of which that at the ſixth is longeſt. There are, uſually, ſeveral of theſe ſimply divided ſcales put on rulers one above the other, with numbers on the left hand, ſhewing, in each ſcale, into how many equal parts an inch is divided, ſuch as 20, 25, 30, 35, 40, 45, &c. which are ſeverally uſed, as the ſize of the plan to be expreſſed may require.

The uſe of theſe lines of equal parts is to lay down any line expreſſed by any number of two places or denominations, whether decimally, or duodecimally divided; as leagues, miles, chains, poles, yards, feet, inches, &c. and their tenth or twelfth parts: thus, if each diviſion be reckoned 1, as 1 league, mile, &c. then each of the ſubdiviſions will expreſs $\frac{1}{10}$th part thereof; and if each of the large diviſions be called 10, then each ſmall one will be 1; and if the large diviſions be 100, then each ſmall one will be 10, &c. Conſequently, to lay off a line $8\frac{7}{10}$, 87, or 870 parts, as leagues, miles, &c. ſet one point of the compaſſes on the eighth of the large diviſions, counting from the left hand towards the right, and extend the other point to the ſeventh of the ſmall diviſions, counting from the right hand towards the left, then are the compaſſes open to expreſs a line of $8\frac{7}{10}$, 87, or 870 leagues, miles, &c. bearing ſuch a proportion in the plan, as the line meaſured does to the thing repreſented.

If a length of feet and inches were to be expreſſed, the ſame large diviſions may repreſent the feet, but the inches muſt be taken from the upper part of the firſt diviſion, which is divided into twelve equal parts; *e. gr.* for a line of 7 feet 5 inches, ſet one point of the compaſſes on the fifth diviſion among the 12, counting from the right hand to the left, and extend the other to ſeven among the large diviſions; and that diſtance laid down in the plan ſhall expreſs a line of 7 feet 5 inches.

The ſecond or diagonal diviſions are formed by drawing eleven lines parallel and at equal diſtances (*fig.* 2.): divide the upper of theſe lines into ſuch a number of equal parts, as the ſcale to be expreſſed is deſigned to contain, and from each of theſe diviſions draw perpendiculars through the eleven parallels; ſubdivide the firſt of theſe diviſions into ten equal parts, both in the upper and lower lines; then each of theſe ſubdiviſions may be alſo ſubdivided into ten equal parts, by drawing diagonal lines, *viz.* from the tenth below to the ninth above, from the ninth below to the eighth above, from the eighth below to the ſeventh above, &c. till from the firſt below to the 0th above: ſo that by theſe means one of the primary diviſions on the ſcale will be divided into a hundred equal parts.

There are generally two diagonal ſcales laid on the ſame plane or face of the ruler, one being commonly half the other. The uſe of the diagonal ſcale is much the ſame with the ſimple ſcale, except that in this a line may be taken of three denominations. From the conſtruction it is plain, that, if each of the primary diviſions repreſents 1, each of the firſt ſubdiviſions will expreſs $\frac{1}{10}$th of 1; and each of the ſecond ſubdiviſions (taken on the diagonal lines, counting from the top downwards) will expreſs $\frac{1}{10}$th of the former ſubdiviſions, or a hundredth of the primary diviſions; and if each of the primary diviſions expreſs 10, then each of the firſt ſubdiviſions will expreſs 1, and each of the ſecond $\frac{1}{10}$: and if each of the primary diviſions repreſent 100, then each of the firſt ſubdiviſions will be 10, and each of the ſecond will be 1, &c. Conſequently, to lay down a line, whoſe length is expreſſed by 347, $34\frac{7}{10}$, or $3\frac{47}{100}$ leagues, miles, chains, &c. on the diagonal line, joined to the fourth of the firſt ſubdiviſions, count ſeven downwards, reckoning the diſtance of each parallel 1, and there ſet one point of the compaſſes, and extend the other till it falls on the interſection of the third primary diviſion with the ſame parallel in which the other foot reſts, and the compaſſes will then be opened to expreſs a line of 347, $34\frac{7}{10}$, or $3\frac{47}{100}$, &c.

In order to deſcribe the remaining lines of the plane ſcale, deſcribe a circumference with any convenient radius (*fig.* 3.), and draw the diameters A B, D E, at right angles to each other; continue B A at pleaſure towards F; through D draw D G parallel to B F; and draw the chords B D, B E, A D, A E. Circumſcribe the circle with the ſquare H M N, whoſe ſides H M, M N, ſhall be parallel to A B, E D.

2. For the line of chords, divide the arc A D into ninety equal parts; mark the tenth diviſions with the figures 10, 20, 30, 40, 50, 60, 70, 80, 90; on D, as a centre, with the compaſſes, transfer the ſeveral diviſions of the quadrantal arc to the chord A D, which, marked with the correſponding figures, will become a line of chords. One of the obvious uſes of the line of chords is to lay down a propoſed angle, or to meaſure an angle already laid down.

3. For the line of rhumbs, divide the arc B E into eight equal parts, marking them with the figures 1, 2, 3, 4, 5, 6, 7, 8; and divide each of thoſe parts into quarters; on B, as a centre, transfer the diviſions of the arc to the chord B E, which, marked with the correſponding figures, will be a line of rhumbs: the uſe of which is to delineate or meaſure a ſhip's courſe.

4. For the line of ſines, through each of the diviſions of the arc A D, draw right lines parallel to the radius A C; and C D will be divided into a line of ſines, which are to be numbered from C to D for the right ſines, and from D to C for the verſed ſines, which may be continued to 180° by laying the diviſions of the radius C D from C to E.

5. For the line of tangents, lay a ruler on C, and the ſeveral diviſions of the arc A D, and it will interſect the line D G, which will become a line of tangents, and is to be numbered from D to G with 10, 20, 30, 40, &c.

6. For the line of ſecants, transfer the diſtances from the centre C to the diviſions on the line of tangents to the line A F, from the centre C, and theſe will give the diviſions of the line of ſecants, which muſt be numbered from A towards F, with 10, 20, 30, &c.

7. For the line of half-tangents, lay a ruler on E, and the ſeveral diviſions of the arc A D, which will interſect the radius C A in the diviſions of the half-tangents: mark theſe with the correſponding figures of the arc A D. The ſemi-tangents on the plane ſcale are generally continued as far as the length of the ruler on which they are laid will admit. The diviſions beyond 90° are found by dividing the arc A E like the arc A D, and laying a ruler by E, and thoſe diviſions of the arc A E; and the diviſions of the ſemi-tangents above 90° will be obtained on the line C A continued.

The uſes of the ſcales of ſines, tangents, ſecants, and half-tangents, are to find the poles and centres of the ſeveral circles repreſented in the *orthographical* and *ſtereographical* projection of the ſphere.

8. For the line of longitude, divide A H into ſixty equal parts; through each of theſe diviſions parallels to the radius A C will interſect the arc A E in as many points. From E, as a centre, the diviſions of the arc E A, being transferred to the chord E A, will give the diviſions of the line of longitude. If this line be put on the ſcale cloſe to the line of chords, both inverted, ſo that 60° in the ſcale of longitude be againſt 0° in the chords, &c. and any degree of latitude be counted on the chords, we ſhall have, oppoſite to it, in the line of longitude, the miles contained in one degree of longitude, in that latitude; the meaſure of one degree under the equator being ſixty geographical miles. However, tables anſwer this purpoſe much better. See DEGREE, and *Parallel* SAILING.

9. For the line of latitude, lay a ruler on A, and the ſeveral diviſions of the ſines on C D, and it will interſect the arc B D in as many points; on B, as a centre, transfer the interſections of the arc B D to the right line B D; number the diviſions from B to D with 10, 20, 30, &c. to 90, and B D will be a line of latitude.

10. For the line of hours, biſect the quadrantal arcs B D, B E, in *a*, *b*; divide the quadrantal arc *a b* into ſix equal parts, (giving 15° for each hour,) and each of theſe into

four others, which give the quarters. A ruler on C, and the ſeveral diviſions of the arc *a b*, will interſect the line M N in the hour, &c. points, which are to be marked as in the figure.

11. For the line of inclinations of meridians, biſect the arc E A in *c*; divide the quadrantal arc *b c* into ninety equal parts; lay a ruler on C, and the ſeveral diviſions of the arc *b c*, and the interſections of the line H M will be the diviſions of a line of inclinations of meridians. The lines of latitude, hours, and inclinations of meridians, are applicable to the practice of *dialling*, which ſee. Robertſon's Deſcript. and Uſe of Math. Inſtr. ſect. 8. ed. 2. See PLOTTING *ſcale*.

SCALE, *Decimal*, *Gunter's*, *Plotting*, *Proportional*, and *Reducing*. See the ſeveral articles.

SCALE, in *Geography* and *Architecture*, a line divided into equal parts, placed at the bottom of a map or draught, to ſerve as a common meaſure to all the parts of the building, or all the diſtances and places of the map.

In maps of large tracts, as kingdoms and provinces, &c. the ſcale uſually conſiſts of miles; whence it becomes denominated *a ſcale of miles*.

In more particular maps, as thoſe of manors, &c. the ſcale is uſually of chains, ſubdivided into poles or links.

The ſcales uſed in draughts of buildings uſually conſiſt of modules, feet, inches, palms, fathoms, or the like.

To find the diſtance between two towns, &c. in a map, the interval is taken in the compaſſes, and ſet off in the ſcale; and the number of diviſions it includes gives the diſtance. The ſame method ſerves to find the height of a ſtory, or other part in a deſign.

SCALE, *Front*, in *Perſpective*, is a right line in the draught parallel to the horizontal line; divided into equal parts, repreſenting feet, inches, &c.

SCALE, *Flying*, is a right line in the draught, tending to the point of view, and divided into unequal parts, repreſenting feet, inches, &c.

SCALE, *Scala*, Ital. in *Muſic*, is what the alphabet is in a language, or a denomination given to the arrangement of the ſix ſyllables, invented by Guido Aretino, *ut re mi fa ſol la*; called alſo *gamut*.

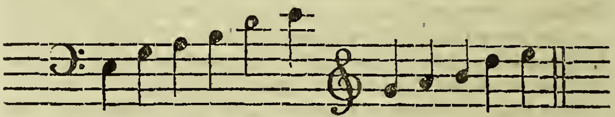
It bears the name *ſcale*, *q. d.* ladder, becauſe it repreſents a kind of ladder, by means of which the voice riſes to acute, or deſcends to grave; each of the ſix ſyllables being, as it were, one ſtep of the ladder.

SCALE is alſo uſed for a ſeries of ſounds riſing or falling towards acuteneſs or gravity, from any given pitch of tone to the greateſt diſtance that is fit or practicable, through ſuch intermediate degrees as to make the ſucceſſion moſt agreeable and perfect, and in which we have all the harmonical intervals moſt commodiouſly divided.

The ſcale is otherwiſe called an *univerſal ſyſtem*, as including all the particular ſyſtems belonging to muſic. See SYSTEM.

SCALE, in the *Muſic of the Ancients*. See GREEK *Muſic*.

SCALE *of the Chineſe*. All the ſpecimens which we have been able to procure of genuine Chineſe muſic are without ſemitones, and ſeem to confirm the idea of Père Amiot, and the abbé Rouſſier, that it has been formed by a ſeries of perfect 5ths, produced by the triple progreſſion of Pythagoras, beginning at F, the Chineſe fundamental or loweſt ſound. And as the ancient Chineſe proceeded in this progreſſion no further than five 5ths, it furniſhes a cogent reaſon for the want of ſemitones in their melody. After the following ſeries of five 5ths, F, C, G, D, A, if we arrange theſe ſounds diatonically, we ſhall have the following ſcale; C, D, F, G, A, c. And this will account for the conſtruction of their muſical inſtruments with fixed tones. One of theſe we met with at Paris in the year 1770; it was in the poſſeſſion of the learned abbé Arnaud of the French Academy, and was a kind of *ſticcado*, conſiſting of bars of wood of different lengths, as ſonorous as if they had been of metal: theſe were placed acroſs a hollow veſſel reſembling the hulk of a ſhip. The compaſs was two octaves, and the intervals were arranged in the following order:



Now no muſic can be compoſed from ſuch a ſcale that will not remind us of the melody of Scotland, which we have long thought of much higher antiquity than has generally been imagined.

We had long been trying to aſcertain the fact concerning the want of ſemitones in the Chineſe muſic, and had ſent inquiries into different parts of the empire, among which one was, whether the Chineſe had any ſemitones in their muſic? or whether their octave only conſiſted of five tones inſtead of ſeven, with which the ſcale of Guido is furniſhed; which queſtion was anſwered by an Italian who had been thirty years at Pekin, and was a good muſician, whoſe anſwer was: "La Cineſi nella loro muſica non hanno ſemituoni;" the Chineſe have no ſemitones in their muſic. This confirmed the conjecture to which the melodies which we had ſeen gave birth; but did not aſſign a reaſon for the deficiency. But after peruſing the 6th vol. of "Memoires concernant l'Hiſtoire les Sciences, les Arts, les Mœurs, les Uſages, &c. des Chinois," by the miſſionaries of Pekin, publiſhed in 1780, the Memoir concerning Chineſe muſic ancient and modern, by père Amiot, one of the Pekin miſſionaries, of which the abbé Rouſſier was the editor, we ſaw no difficulty in aſſigning a reaſon for the deficiency in the Chineſe ſcale according to European ideas. For if, inſtead of ſtopping at A, the 5th of D, they had proceeded two 5ths further, they would have had an E and a B, which would have furniſhed materials for completing the diatonic octave of five tones and two ſemitones: F, C, G, D, A, E, B; which arranged diatonically, would furniſh every ſound in the natural ſeptenary of C and A. C, D, E, F, G, A, B, c, descending A, G, F, E, D, C, B, A. See CHINESE *Muſic*.

Whoever hears Chineſe airs diſcovers a ſimilarity between them and Scots tunes, from the omiſſion of the 4th and 7th of major keys, and, in deſcending, of minor keys; which renders them like melodies played in the ſhort keys of a harpſichord or piano forte.

SCALE, *Differential*, is uſed for the ſcale of relation ſubtracted from unity. See SERIES.

SCALE *of Relation*, in *Algebra*, an expreſſion denoting the relation of the terms of recurring ſeries to each other. See SERIES.

SCALE, *Hour*. See HOUR.

SCALES, in *Natural Hiſtory*. What the naturaliſts underſtand by ſcales, are certain flat and ſemi-pellucid bodies, common to the fiſh, the ſerpent, and the lizard kind; conſiſting of a ſubſtance ſomewhat analogous to that of the horns and hoofs of other animals, as is found by cutting and burning them, and by their ſmell.

The ſcales in fiſhes are of ſo many different kinds and ſhapes, that they afford, in many caſes, very good characters for the diſtinction of the ſpecies. The differences of theſe parts of fiſh ariſe from their number, ſituation, figure, and proportion, and ſome other qualities peculiar to a few of them.

Their differences, in regard to number, are theſe: there are none on ſeveral kinds of fiſh, as on the petromyza, the dolphin, and the whale. Upon ſome other fiſhes they are but very few in number, as on the conger, the eel, the clariæ, &c.; and they are on others found in vaſtly great numbers, and placed in cluſters one over another, as in the pearch, ſalmon, &c.

In regard to their ſituation, they differ in theſe particulars. 1. On ſome fiſh they are placed extremely thick and cloſe upon one another. 2. In others they ſtand in imbricated rows. The eſoces give us an example of the firſt, and the cyprini, in general, of the ſecond kind. And, 3. In ſome they are ſcattered, and at ſuch diſtances, that they do not touch one another, as in the congers, the eels, the clariæ, &c. Their differences in figure are not leſs evident than thoſe in poſition. 1. Some are roundiſh, as thoſe of the clupeæ and ſalmons. 2. Some are oval, or of an oblong round figure, as thoſe of the gadi. 3. In ſome fiſh they are ſtraight on one ſide, and rounded on the others, as in the pearch and mullet. The proper deſcription of theſe is, that they have a rectilinear baſe, and rounded ſides.

Their differences in proportion are theſe: they are either in regard to one another, or to the ſcales of other fiſhes, or according to our ſenſes, in regard to the ſize of the fiſh, either very large, great, ſmall, middling, or extremely minute. Theſe are words, which give a ſort of uſeful idea in the deſcription, though they are far from being determinate or regular in their ſignifications. As to the other peculiar qualities of the ſcales of fiſhes, they are in ſome ſoft and ſmooth, as in the ſalmon and cyprini; and in others hard and rough, and, as it were, a little prickly: of this ſort are the ſcales of the pearch, the capriſcus, and ſome of the pleuronecti. Artedi, Ichthyol.

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The word is formed from the Greek σκαληνος, which ſignifies oblique, unequal, &c.

A cylinder, or cone, whoſe axis is inclined to its baſe, is alſo ſaid to be ſcalenous.

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The *ſcalenus anterior* is elongated, broader below and narrower above, and placed on the lateral and inferior part of the neck. It is fixed below to the anterior portion of the upper ſurface of the firſt rib by means of a tendon, which is continued on the ſurface of the muſcular fibres. The latter compoſe a faſciculus directed obliquely upwards and inwards, and forming four ſmall tendons inſerted into the anterior tubercles of the tranſverſe proceſſes of the third, fourth, fifth, and ſixth cervical vertebræ.

This muſcle is covered by the ſubclavian vein, the trunk and branches of the inferior thyroid artery, the phrenic nerve, the omo-hyoideus, and ſterno-hyoideus. Between it and the poſterior ſcalenus a triangular ſpace is left, bounded below, where it is broadeſt, by the firſt rib, and giving paſſage to the ſubclavian artery and the anterior branches of the cervical nerves, ſome of which paſs through the muſcle, ſeparating its tendons. Towards the inner and lower part a ſpace occupied by the vertebral artery and vein is left between it and the longus colli.

The *ſcalenus poſterior*, very ſimilar to the laſt, is rather larger and thicker, and lies behind it at the ſide of the neck. It has two attachments below; an anterior one to the back and upper part of the firſt rib, and a poſterior leſs conſiderable one to the upper edge of the ſecond rib. The latter, which is ſometimes abſent, is the poſterior ſcalenus of ſome writers, who call the former the middle ſcalenus. The two portions are firſt diſtinct, then ſoon united into one, which is directed upwards and inwards towards the vertebral column, and terminates in ſix ſmall tendons inſerted into the poſterior tubercles of the tranſverſe proceſſes of the ſix loweſt cervical vertebræ: ſometimes a ſmall faſciculus goes to the tranſverſe proceſs of the atlas.

The poſterior ſcalenus correſponds externally to the ſerratus magnus, to the integuments, from which it is ſeparated by a large quantity of cellular tiſſue, and to the ſterno-maſtoideus, on the inſide, to the vertebral column, the intertranſverſales, and the firſt intercoſtal muſcle; behind, to the ſacrolumbales, ſplenius, and levator ſcapulæ; in front, to the ſcalenus anterior, the cervical nerves, and the ſubclavian artery.

The action of the ſcaleni will affect either the neck or the ribs. Theſe muſcles incline the neck laterally on the cheſt;

the

four others, which give the quarters. A ruler on C, and the ſeveral diviſions of the arc *a b*, will interſect the line M N in the hour, &c. points, which are to be marked as in the figure.

11. For the line of inclinations of meridians, biſect the arc E A in *c*; divide the quadrantal arc *b c* into ninety equal parts; lay a ruler on C, and the ſeveral diviſions of the arc *b c*, and the interſections of the line H M will be the diviſions of a line of inclinations of meridians. The lines of latitude, hours, and inclinations of meridians, are applicable to the practice of *dialling*, which ſee. Robertſon's Deſcript. and Uſe of Math. Inſtr. ſect. 8. ed. 2. See Plotting *ſcale*.

Scale, *Decimal*, *Gunter's*, *Plotting*, *Proportional*, and *Reducing*. See the ſeveral articles.

Scale, in *Geography* and *Architecture*, a line divided into equal parts, placed at the bottom of a map or draught, to ſerve as a common meaſure to all the parts of the building, or all the diſtances and places of the map.

In maps of large tracts, as kingdoms and provinces, &c. the ſcale uſually conſiſts of miles; whence it becomes denominated *a ſcale of miles*.

In more particular maps, as thoſe of manors, &c. the ſcale is uſually of chains, ſubdivided into poles or links.

The ſcales uſed in draughts of buildings uſually conſiſt of modules, feet, inches, palms, fathoms, or the like.

To find the diſtance between two towns, &c. in a map, the interval is taken in the compaſſes, and ſet off in the ſcale; and the number of diviſions it includes gives the diſtance. The ſame method ſerves to find the height of a ſtory, or other part in a deſign.

Scale, *Front*, in *Perſpective*, is a right line in the draught parallel to the horizontal line; divided into equal parts, repreſenting feet, inches, &c.

Scale, *Flying*, is a right line in the draught, tending to the point of view, and divided into unequal parts, repreſenting feet, inches, &c.

Scale, *Scala*, Ital. in *Muſic*, is what the alphabet is in a language, or a denomination given to the arrangement of the ſix ſyllables, invented by Guido Aretino, *ut re mi fa ſol la*; called alſo *gamut*.

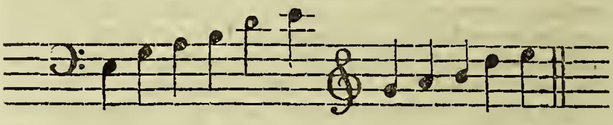
It bears the name *ſcale*, *q. d.* ladder, becauſe it repreſents a kind of ladder, by means of which the voice riſes to acute, or deſcends to grave; each of the ſix ſyllables being, as it were, one ſtep of the ladder.

Scale is alſo uſed for a ſeries of ſounds riſing or falling towards acuteneſs or gravity, from any given pitch of tone to the greateſt diſtance that is fit or practicable, through ſuch intermediate degrees as to make the ſucceſſion moſt agreeable and perfect, and in which we have all the harmonical intervals moſt commodiouſly divided.

The ſcale is otherwiſe called an *univerſal ſyſtem*, as including all the particular ſyſtems belonging to muſic. See System.

Scale, in the *Muſic of the Ancients*. See Greek *Muſic*.

Scale *of the Chineſe*. All the ſpecimens which we have been able to procure of genuine Chineſe muſic are without ſemitones, and ſeem to confirm the idea of Père Amiot, and the abbé Rouſſier, that it has been formed by a ſeries of perfect 5ths, produced by the triple progreſſion of Pythagoras, beginning at F, the Chineſe fundamental or loweſt ſound. And as the ancient Chineſe proceeded in this progreſſion no further than five 5ths, it furniſhes a cogent reaſon for the want of ſemitones in their melody. After the following ſeries of five 5ths, F, C, G, D, A, if we arrange theſe ſounds diatonically, we ſhall have the following ſcale; C, D, F, G, A, c. And this will account for the conſtruction of their muſical inſtruments with fixed tones. One of theſe we met with at Paris in the year 1770; it was in the poſſeſſion of the learned abbé Arnaud of the French Academy, and was a kind of *ſticcado*, conſiſting of bars of wood of different lengths, as ſonorous as if they had been of metal: theſe were placed acroſs a hollow veſſel reſembling the hulk of a ſhip. The compaſs was two octaves, and the intervals were arranged in the following order:



Now no muſic can be compoſed from ſuch a ſcale that will not remind us of the melody of Scotland, which we have long thought of much higher antiquity than has generally been imagined.

We had long been trying to aſcertain the fact concerning the want of ſemitones in the Chineſe muſic, and had ſent inquiries into different parts of the empire, among which one was, whether the Chineſe had any ſemitones in their muſic? or whether their octave only conſiſted of five tones inſtead of ſeven, with which the ſcale of Guido is furniſhed; which queſtion was anſwered by an Italian who had been thirty years at Pekin, and was a good muſician, whoſe anſwer was: "La Cineſi nella loro muſica non hanno ſemituoni;" the Chineſe have no ſemitones in their muſic. This confirmed the conjecture to which the melodies which we had ſeen gave birth; but did not aſſign a reaſon for the deficiency. But after peruſing the 6th vol. of "Memoires concernant l'Hiſtoire les Sciences, les Arts, les Mœurs, les Uſages, &c. des Chinois," by the miſſionaries of Pekin, publiſhed in 1780, the Memoir concerning Chineſe muſic ancient and modern, by père Amiot, one of the Pekin miſſionaries, of which the abbé Rouſſier was the editor, we ſaw no difficulty in aſſigning a reaſon for the deficiency in the Chineſe ſcale according to European ideas. For if, inſtead of ſtopping at A, the 5th of D, they had proceeded two 5ths further, they would have had an E and a B, which would have furniſhed materials for completing the diatonic octave of five tones and two ſemitones: F, C, G, D, A, E, B; which arranged diatonically, would furniſh every ſound in the natural ſeptenary of C and A. C, D, E, F, G, A, B, c, descending A, G, F, E, D, C, B, A. See Chinese *Muſic*.

Whoever hears Chineſe airs diſcovers a ſimilarity between them and Scots tunes, from the omiſſion of the 4th and 7th of major keys, and, in deſcending, of minor keys; which renders them like melodies played in the ſhort keys of a harpſichord or piano forte.

Scale, *Differential*, is uſed for the ſcale of relation ſubtracted from unity. See Series.

Scale *of Relation*, in *Algebra*, an expreſſion denoting the relation of the terms of recurring ſeries to each other. See Series.

Scale, *Hour*. See Hour.

Scales, in *Natural Hiſtory*. What the naturaliſts underſtand by ſcales, are certain flat and ſemi-pellucid bodies, common to the fiſh, the ſerpent, and the lizard kind; conſiſting of a ſubſtance ſomewhat analogous to that of the horns and hoofs of other animals, as is found by cutting and burning them, and by their ſmell.

The ſcales in fiſhes are of ſo many different kinds and ſhapes, that they afford, in many caſes, very good characters for the diſtinction of the ſpecies. The differences of theſe parts of fiſh ariſe from their number, ſituation, figure, and proportion, and ſome other qualities peculiar to a few of them.

Their differences, in regard to number, are theſe: there are none on ſeveral kinds of fiſh, as on the petromyza, the dolphin, and the whale. Upon ſome other fiſhes they are but very few in number, as on the conger, the eel, the clariæ, &c.; and they are on others found in vaſtly great numbers, and placed in cluſters one over another, as in the pearch, ſalmon, &c.

In regard to their ſituation, they differ in theſe particulars. 1. On ſome fiſh they are placed extremely thick and cloſe upon one another. 2. In others they ſtand in imbricated rows. The eſoces give us an example of the firſt, and the cyprini, in general, of the ſecond kind. And, 3. In ſome they are ſcattered, and at ſuch diſtances, that they do not touch one another, as in the congers, the eels, the clariæ, &c. Their differences in figure are not leſs evident than thoſe in poſition. 1. Some are roundiſh, as thoſe of the clupeæ and ſalmons. 2. Some are oval, or of an oblong round figure, as thoſe of the gadi. 3. In ſome fiſh they are ſtraight on one ſide, and rounded on the others, as in the pearch and mullet. The proper deſcription of theſe is, that they have a rectilinear baſe, and rounded ſides.

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The *ſcalenus anterior* is elongated, broader below and narrower above, and placed on the lateral and inferior part of the neck. It is fixed below to the anterior portion of the upper ſurface of the firſt rib by means of a tendon, which is continued on the ſurface of the muſcular fibres. The latter compoſe a faſciculus directed obliquely upwards and inwards, and forming four ſmall tendons inſerted into the anterior tubercles of the tranſverſe proceſſes of the third, fourth, fifth, and ſixth cervical vertebræ.

This muſcle is covered by the ſubclavian vein, the trunk and branches of the inferior thyroid artery, the phrenic nerve, the omo-hyoideus, and ſterno-hyoideus. Between it and the poſterior ſcalenus a triangular ſpace is left, bounded below, where it is broadeſt, by the firſt rib, and giving paſſage to the ſubclavian artery and the anterior branches of the cervical nerves, ſome of which paſs through the muſcle, ſeparating its tendons. Towards the inner and lower part a ſpace occupied by the vertebral artery and vein is left between it and the longus colli.

The *ſcalenus poſterior*, very ſimilar to the laſt, is rather larger and thicker, and lies behind it at the ſide of the neck. It has two attachments below; an anterior one to the back and upper part of the firſt rib, and a poſterior leſs conſiderable one to the upper edge of the ſecond rib. The latter, which is ſometimes abſent, is the poſterior ſcalenus of ſome writers, who call the former the middle ſcalenus. The two portions are firſt diſtinct, then ſoon united into one, which is directed upwards and inwards towards the vertebral column, and terminates in ſix ſmall tendons inſerted into the poſterior tubercles of the tranſverſe proceſſes of the ſix loweſt cervical vertebræ: ſometimes a ſmall faſciculus goes to the tranſverſe proceſs of the atlas.

The poſterior ſcalenus correſponds externally to the ſerratus magnus, to the integuments, from which it is ſeparated by a large quantity of cellular tiſſue, and to the ſterno-maſtoideus, on the inſide, to the vertebral column, the intertranſverſales, and the firſt intercoſtal muſcle; behind, to the ſacrolumbales, ſplenius, and levator ſcapulæ; in front, to the ſcalenus anterior, the cervical nerves, and the ſubclavian artery.

The action of the ſcaleni will affect either the neck or the ribs. Theſe muſcles incline the neck laterally on the cheſt;

the anterior, at the ſame time, moving it a little forwards, the poſterior a little backwards, and both together directly to one ſide. The muſcles of the two ſides, acting together, fix the neck vertically on the cheſt. They draw the two upper ribs towards the neck, render them fixed points, to which the others may be raiſed by the contraction of the intercoſtal muſcles, and thus aſſiſt in inſpiration, particularly when breathing is laborious. Albinus deſcribes four ſcaleni, *viz.* prior, lateralis, medius, and poſticus; of which the ſecond and fourth are attached to the ſecond rib. Sometimes there is another little ſlip, which he calls ſcalenus minimus.

SCALIGER, Julius Cæsar, in *Biography*, an eminent ſcholar, whoſe hiſtory is rendered obſcure by his own vanity in maintaining what is now generally thought an impoſture reſpecting his origin. According to this fiction, if it be a fiction, as publiſhed by his ſon Joſeph, in his epiſtle “De Splendore ac Vetuſtate Gentis Scaligeri,” he was a deſcendant of the illuſtrious family of the Scaligers, princes of Verona, and was born in 1484, in the caſtle of Riva, near the ſource of lake Guarda, and was afterwards a page of the emperor Maximilian, on whom he attended 17 years in peace and war. He then became a penſioner of the duke of Ferrara, ſtudied at Bologna, commanded a troop of horſe under the French viceroy at Turin, engaged in the ſtudy of phyſic, and in 1525 fixed his abode in France, under the patronage of the biſhop of Agen. This tale obtained credit with ſome reſpectable people, among whom was De Thou; but it was treated with marked contempt and ridicule by others; and it ſeems now to be generally admitted to be almoſt, or altogether, fictitious. He was probably the ſon of Benedetto Bordone, a Paduan by origin, who practiſed the art of an illuminator of books at Venice, and is ſuppoſed to have acquired the ſurname of Della Scala, either from the ſign of his ſhop, or the diſtrict in which it was ſituated. It is ſaid that, till the year 1525, he paſſed his time in obſcurity at Venice or Padua, ſtudying and practiſing medicine, and in the mean time publiſhed ſome works under his true name, Giulio Bordone; and that ſome hope of bettering his condition then drew him to the dioceſe of Agen, where he paſſed the remainder of his days. It appears that in 1528 he had not determined to claim a deſcent from the illuſtrious Scaligers, when he took out a patent of naturalization from Francis I., under the name of “Julius Cæſar Della Scala de Bordons, doctor of phyſic, a native of Verona in Italy.” He was then probably of ſome conſideration, ſince in 1529 he obtained for a wife a young woman of a noble and opulent family; and from this time he began to aſſert his princely origin, in which, however, he was not ſupported by any prince connected with the houſe of Verona. He made his name more effectually known by various writings, which have given him place among the principal literary characters of his time. Notwithſtanding his celebrity as a writer, he continued to practiſe phyſic, by which he accumulated a large fortune: and he appears to have opened his houſe to a great number of viſitors of all ranks, and to have maintained a dignified ſtation in ſociety. He died in 1558, in the 75th year of his age. He was unqueſtionably a man of great talents, and though it is generally ſuppoſed he began to apply to literature late in life, yet few have taken a wider range in it than himſelf. He had a ſtrong memory, and a vigorous underſtanding. He thought and wrote freely, which, in one inſtance, ſubjected him to the ſuſpicion of the church. He wrote ſeveral books connected with his profeſſion, and natural hiſtory, particularly Commentaries on Hippocrates “De Inſomniis;” on “Theophraſtus and Ariſtotle on Plants;” and on Ariſtotle's “Hiſtory of Animals.” But he was much more highly applauded as a philologiſt: his elaborate work, entitled “De Cauſis Linguæ Latinæ,” printed in 1540, is regarded as the firſt work on that ſubject, and it is written in a truly philoſophical method. His treatiſe, “De Arte Poetica,” publiſhed in 1561, gained him great reputation, and was unqueſtionably the moſt learned work that had appeared. His own poems are not excellent, and his letters are obſcure, and rather bombaſtical. His orations againſt the “Ciceronianus” of Eraſmus have not treated that great ſcholar in the way becoming his character; ſo that, upon the whole, later critics have not agreed with Lipſius, Caſaubon, Voſſius, and others, in their very great praiſe of Scaliger.

Scaliger, Joseph Justus, ſon of the preceding, was born at Agen in 1540. He was, when about eleven years old, ſent with his brothers to Bourdeaux, where he ſtudied the Latin language for three years. The plague breaking out in that town, obliged him to return to his father, who made a practice of requiring from him, daily, a Latin declamation upon ſome given ſubject, which ſoon familiarized him to compoſe in that language. On his father's death he went to Paris, being about 19 years of age, and took leſſons in Greek from Adrian Turnebe. He was, however, his own maſter principally, and ſhutting himſelf up in his cloſet, he began to read Homer, and the other Greek poets, with ſuch aſſiduity, that he had, in a few months, gone through moſt of them. When he had attained to a conſiderable degree of perfection in the Greek, he ſtudied the Hebrew; at the ſame time exerciſing himſelf in poetical compoſition in the learned languages. He alſo laid in a vaſt ſtore of obſervations on Greek and Latin authors, which became the baſis of his philological labours. He became a convert to the Proteſtant religion, which probably impeded his advancement in life. At length, however, he received an invitation to a chair in the univerſity of Leyden; on which occaſion, he waited on Henry IV. to take leave. He removed to Leyden in 1593, as honorary profeſſor of the belles lettres, and ſpent there the remainder of his life. His character was merely that of a ſcholar, regardleſs of all worldly concerns, ſo that he ſcarcely ever roſe much above indigence. He had, however, an independent ſpirit, and refuſed aſſiſtance in a variety of inſtances, when money was offered him. In pride and arrogance he was not at all inferior to his father, and no ſcholar has abounded more in contemptuous and abuſive language towards his adverſaries, of which his extenſive acquaintance with words in various tongues ſupplied him with an inexhauſtible ſtore. He was reckoned one of the literary heroes of his age, and was treated with extraordinary reſpect at Leyden, where he died in 1609, at the age of 69. He is deſcribed as a man of immenſe reading, and ſo addicted to ſtudy, that he would ſometimes paſs the whole day in his room without eating, or feeling the ſlighteſt want of food. He boaſted his knowledge of thirteen languages. Of his numerous works, one of the moſt important is a treatiſe “De Emendatione Temporum,” firſt printed at Paris in 1583, but of which the beſt edition is ſaid to be that of Geneva, 1609. In this work he laid down a complete ſyſtem of chronology, formed upon fixed principles; on account of which, and his invention of the Julian period, he has merited the title of the father of that ſcience. Many errors, which eſcaped him at firſt, he corrected in a poſterior publication, entitled “Theſaurus Temporum, complectens Euſebii Pamphili Chronicon, cum Iſagogicis Chronologiæ Canonibus.” This work was printed in 1658, in 2 vols. folio. His other principal works are, “Notes upon Seneca's Tragedies, Varro, Auſonius, Feſtus," &c.; "De tribus Sectis Judæorum;" "Diſſertationes;" "Poemata;" "Epiſtolæ," which laſt are learned and valuable. Two collections of "Scaligeriana" were publiſhed after his death, which did not add to his reputation. He is thought to have had leſs genius, but more learning, than his father; and he has been more ſerviceable to literature.

SCALIN, or ESCALIN, in *Commerce*, a baſe ſilver coin in the Netherlands. The eſcalin, or chelling, at Antwerp is equal to 6 ſtivers of exchange, or 7 ſtivers current. It weighs 3 dwt. 4¼ grs., contains in pure ſilver 44 grains, and in ſterling value is 6*d*.

SCALING *of Guns*, denotes the act of cleaning the inſide of a ſhip's cannon, by the exploſion of a ſmall quantity of powder, which effectually blows out any dirt or ſcales of iron which may adhere to the interior ſurface.

SCALING-*Ladders*. See LADDERS.

SCALIS, in *Geography*, a town of the duchy of Stiria; 6 miles S. of Windiſch-Gratz.

SCALITZ, or SCALA, a town of Hungary; 31 miles W.N.W. of Topoltzan.

SCALLED HEAD. See PORRIGO.

SCALLION, or ESCALLION, in *Botany* and *Gardening*, a ſort of onion which never forms any bulb at the root, but is uſed green in ſpring, before the other ſorts ſown in July are large enough.

This is, however, very ſcarce in London, the gardeners uſually ſelling in its place the ſhoots of ſuch decayed common onions as have ſprouted in the houſe. Theſe they plant in a bed early in the ſpring, and they ſoon grow large enough for uſe, when they pull them out; and taking off all the old outer coat of the roots, they lay them in bunches, and ſell them in the market for ſcallions.

The true ſcallion is eaſily propagated by parting the roots in autumn, and planting them three or four together in a hole at ſix inches diſtance. Theſe will grow in any ſoil or ſituation, and will multiply very quickly, and in very great abundance; and their being hardy enough to endure the ſevereſt winter, and fit for uſe ſo early in ſpring, makes them worthy a place in all kitchen gardens. See ALLIUM.

SCALLOP, in *Ichthyology*, a ſhell-fiſh, whoſe animal is a *tethys*, grows to a large ſize, is found in ſeparate beds, dredged up, pickled and barrelled for ſale. The anatomy of this fiſh lets us greatly into the knowledge of the ſtructure of the parts of other bivalve ſhell-fiſh.

The ſcallop is compoſed of two ſhells, which, as in many others, are one concave, and the other plane or flat. The cardo, or hinge, is lightly bent from the concave ſhell, and thence carried over a part of the plane ſhell, in the middle, and all the way between, it is firmly connected to a cartilage. In the middle of the length of the cardo there is placed another ſhort, black, and very ſtrong cardo.

It is eaſy to ſee, from hence, to what is owing that remarkable ſtrong power, which this creature has of ſhutting and opening its ſhell; and it is very poſſible, that by means of ſo ſtrong an apparatus of tendons or ligaments as it has in this part, it may be able to move the plane ſhell in ſo ſwift and regular, as well as forcible and eaſy a manner, that it may uſe it in moving from place to place; and poſſibly it may make a ſort of wing of it, to beat againſt the water, as the pinion of a bird does againſt the air; and what the ancients have ſo frequently ſaid of its moving about in a very ſwift manner, from place to place, may be true, though we have been wanting in later obſervations to ſee it.

For a more particular examination into the ſtructure of this fiſh, ſee Philoſ. Tranſ. Nº 299. p. 567. See CONCHOLOGY and OSTREA.

SCALLOP *Tyles*. See TYLES.

SCALLOWAY, in *Geography*, a ſea-port town, ſituated on the ſouthern coaſt of the mainland of Shetland, county of Orkney and Shetland, and kingdom of Scotland, was formerly diſtinguiſhed as the capital of the Shetland iſles; but ſince the riſe of Lerwick, it has dwindled into an inſignificant village, conſiſting of about 30 ſcattered houſes ſurrounding a caſtle. This ſtructure was founded by Patrick, earl of Orkney and Shetland, in the year 1600, and gave occaſion to ſuch oppreſſive exactions of ſervices and contributions, that the memory of the founder is ſtill held in deteſtation by the natives. During the commonwealth, it was occupied as barracks by a party of Cromwell's ſoldiers, to whom, it is ſaid, the inhabitants of the neighbourhood were indebted for ſeveral improvements, particularly the culture of cabbages. Scalloway caſtle, ſays Brand, in his New Deſcription of Orkney, Zetland, &c. "is three ſtories high, beſide kitchen and wardrobe, and hath in it many excellent chambers and other apartments, with their ſeveral conveniencies; alſo there hath been much good painting, ſome of which is yet to be ſeen, though much defaced. The chambers are high between the floors, but eſpecially the gallery or dining-room. In the kitchen there is a well in the ſide of the wall, the water whereof is very good, though little uſed." The harbour of Scalloway is both ſafe and commodious, and the country along the coaſt is ſaid to be the moſt delightful and fertile in Shetland. A New Deſcription of Orkney and Zetland, by John Brand, 12mo. Edin. 1703. A Tour through ſome of the Iſlands of Orkney and Shetland, by Patrick Niell, A.M., 8vo. 1806.

SCALMUS, among the *Romans*, a block or round piece of wood in a boat, to which the oars were tied with a thong of leather, called *ſtrappus*.

Scalmus was alſo uſed to denote the boat, a part being taken for the whole.

SCALPA, in *Geography*, a village and ſea-port in the pariſh of St. Ola, iſland of Pomona, and ſhire of Orkney and Shetland, Scotland, is ſituated about two miles to the ſouth of the town of Kirkwall. It is chiefly worthy of notice on account of the beauty of the bay, to which it gives name, and its excellence as a ſafe and commodious harbour for ſhipping. Scalpa-Flow extends about 50 miles in circumference, reſembling a ſmall Mediterranean, being environed by twelve different iſlands, between which are ſeveral outlets to the Pentland Frith, and the Northern and Atlantic oceans; but the principal entrances are through Holm Sound on the eaſt, and Hoy Mouth on the weſt. This Flow abounds with fine roadſteads and harbours, and for that reaſon is much reſorted to by ſhips coming north about. All the ſmacks employed in fiſhing, and carrying lobſters to the London market, rendezvous in one or other of theſe harbours. Carliſle's Topographical Dictionary of Scotland, 2 vols. 4to. 1813.

SCALPA, one of the Hebrides, or Weſtern iſlands of Scotland, included in the pariſh of Strath, and county of Inverneſs, is ſituated between the Mainland and the iſle of Skye, from which it is ſeparated by a narrow branch of the ſea, called the Sound of Scalpa. It extends about three miles in length, and two in breadth, and is in general rocky and barren. In the higheſt part of this iſland is a rock of petrified moſs, in which various ſea-ſhells are imbedded; and at other ſpots great quantities of ſimilar ſhells are to be met with, ſeveral feet under ground. The Statiſtical Account of Scotland, by Sir John Sinclair, vol. xvi. 8vo. 1795.

SCALPAY, one of the Hebrides, or Weſtern iſlands of Scotland, in the pariſh of Harris, and county of Inverneſs, is ſituated in Eaſt Loch Tarbet, which ſeparates Harris from Lewis. Its ſurface is flat, and in great part covered with heath; and from the numerous branches of the ſea, which penetrate it in every direction, its form is unuſually irregular. Its two extreme points, from eaſt to weſt, are about three miles diſtant. On the eaſtern point is a light-houſe, erected in 1788; and near the weſtern one are two of the beſt natural harbours in the Hebrides. The Statiſtical Account of Scotland, by Sir John Sinclair, vol. x. 8vo. 1794.

SCALPEL, a term applied by ſurgeons to any common kind of ſmall ſtraight knife, for ſurgical and anatomical purpoſes.

SCALPING, in *Military Hiſtory*, a barbarous cuſtom in practice among the Indian warriors, of taking off the tops of the ſcalps of the enemies' ſkulls, with their hair on: theſe are preſerved as trophies of victory, and thoſe who bring them are rewarded by their chiefs, in proportion to their number.

SCALPRA DENTALIA, inſtruments uſed by the ſurgeons to take off thoſe black, livid, or yellow cruſts, which infeſt the teeth, and not only looſen and deſtroy them, but taint the breath.

According to the varieties of the occaſion, the ſurgeon has theſe inſtruments of various ſhapes and ſizes: ſome are pointed and narrow at the end; others are broader pointed, and have edges; others are hooked, or falciform; but theſe are uſually, for the convenience of carriage, all adapted to one handle.

The manner of uſing them is to begin near the gums, ſupporting the blade with the left hand, and ſcraping all along the tooth, till the cruſt is taken off, taking care not to wound the gums, or diſplace the teeth. Heiſter.

SCALPRUM, from *ſcalpro*, *to raſp*, an inſtrument termed a raſpatory, or rugine, uſed for ſcraping diſeaſed portions of bone, removing the perioſteum, &c. See the preceding article.

SCALTERN, in *Geography*, a town of the duchy of Stiria; 7 miles S.W. of Pettau.

SCALY DISEASES, in *Medicine*, are thoſe diſeaſes of the ſkin which are characterized by the deſquamation of the cuticle in ſmall, detached, white laminæ.

Theſe hard, white, thickened, and opaque laminæ of the cuticle, which are called *ſcales*, ſeem to originate from an inflammation affecting the ſurface of the true ſkin, in conſequence of which the cuticle is changed in its texture, looſened, and undermined by the formation of a new cuticle, by which it is at length thrown off. Sometimes, however, ſcales originate from indurated papulæ, or larger elevations of the true ſkin, which, by preſſure or diſtention, injure the texture of the cuticle, and produce thickened irregular layers of it. Occaſionally, however, the cuticle alone, or together with the rete mucoſum, appears to be in a morbid condition.

In the artificial claſſification of diſeaſes of the ſkin, deviſed by Dr. Willan, as well as in that invented by Dr. Plenck, of Vienna, and founded upon the external appearances, one of the orders includes the *ſcaly* diſeaſes. Of theſe, according to the ſyſtem of Willan, there are four genera; the *lepra*, or leproſy of the Greeks; the *pſoriaſis*, or ſcaly tetter; the *ptyriaſis*, or dandriff; the *ichthyoſis*, or fiſh-ſkin diſeaſe; which ſee reſpectively. See alſo Willan, Deſcription and Treatment of Cutan. Diſ.; and Bateman's Pract. Synopſis of his Claſſification.

SCALY *Roots*, in *Botany*, are of the bulbous kind, but conſiſting of imbricated ſcales, inſtead of uninterrupted concentric layers. Of this *Lilium* affords examples. See *Radix bulboſa* under the article ROOT.

SCALZI, CARLO, of Genoa, in *Biography*, a ſecond ſinger in Handel's opera of "Ariadne," in which Careſtini was the firſt. Handel ſeems to have had no ſplendid ideas of his abilities, as he gave him but little to do; yet, according to Mancini (Penſieri ſopra il canto ſigurato), he afterwards became ſo eſtimable a performer, that he ranked among ſingers of the firſt claſs.

SCAMACHIE, in *Geography*. See SCHAMACHI.

SCAMANDER, in *Ancient Geography*, one of the rivers which watered Troas, or Phrygia Minor. According to Homer's account, it had its ſources in mount Ida, towards the eaſtern part of that mountain, and having received within its banks, not far from Troy, the Simois, diſcharged itſelf into the Ægean ſea, over-againſt the iſland of Tenedos. Herodotus ſays that it was *drank* up by the army of Xerxes. Its original name was Scamander; but it was afterwards called Zanthus, becauſe it was thought to communicate a yellowiſh tincture to the ſheep that drank its waters. Homer ſays that it was called Xanthus by the gods, and Scamander by men. It was a cuſtom among the Phrygian brides to bathe themſelves before marriage in this river. But this ſuperſtitious ceremony was abrogated, in conſequence of Cimon an Athenian's having aſſumed the diſguiſe of a river god, and deflowering Calirrhoe, a noble virgin, at that time betrothed. According to the account given of the preſent Scamander by Olivier, it takes its riſe at the extremity of the plain of Troy, from five or ſix ſprings, one of which is remarkable for its waters being ſomewhat lukewarm. After having traverſed a ſpace of ſix or ſeven miles, it diſcharges itſelf into the Simois, a league from the ſea. Confined in its bed, it undergoes no perceptible variation; its banks are enamelled with flowers in almoſt all ſeaſons; and in ſeveral places the lands are ſo low, and the waters fill its bed in ſuch a manner, that they ſpread themſelves, and form ſeveral marſhes, producing reeds, ruſhes, and various aquatic plants. In the rainy ſeaſon the Scamander is leſs conſiderable than the Simois, but it is ſuperior to it in having always nearly the ſame quantity of water, and in carrying fertility into the plain which it traverſes. Olivier continues the name of Simois as far as the ſea, but all the ancients ceaſed to give it that name on its junction with the Scamander: but independently of the Simois having a larger bed and a more extenſive ſtream than the other, and independently of its receiving in winter the waters of all the mountains ſituated to the eaſt of Troas, the Scamander has at this day taken another courſe. Under the reign of Abdul-Hamed, Haſſan, captain-pacha, wiſhing to conſtruct ſeveral mills, and to water the lands which he poſſeſſed towards the cape of Troy, cauſed a canal to be dug to the weſtward of the little village of Erkeſſikeui, and poured into it the waters of the Scamander; from that time they have flowed into the Ægean ſea, near half a league to the S. of the cape of Troy. The coaſt is low and marſhy at the new mouth of the Scamander; but it riſes from the cape of Troy to the village of Yeni-koui, and thence to cape Sigeum it is ſteep. See SIMOIS.

SCAMANDRIA, a ſmall town of the Troas, on the banks of the river Scamander; 1500 paces from port Ilum, according to Pliny.

SCAMBENA, a town of Aſia, in Media, in the interior of the country. Ptolemy.

SCAMILLI IMPARES, in the *Ancient Architecture*, a term much contended about among the critics, though, in effect, it ſignifies no more than certain zoccoes, or blocks, ſerving to raiſe the reſt of the members of an order, column, ſtatue, or the like, and to prevent their being loſt to the eye, which may chance to be placed below the level, or below the projecture of ſome of the ornaments of them.

The ſcamilli are well enough repreſented by the pedeſtals of ſtatues. See Pedestal.

SCAMINA, in *Geography*, a town of European Turkey, in Livadia; 20 miles N. of Athens.

SCAMMA, Σκαμμα, among the *Greeks*, the mark in leaping, or throwing quoits; ſo called from its being made by digging up the earth.

SCAMMATHA, or Shematta, שמתא, in the *Jewiſh Cuſtoms*, a kind of excommunication, and the moſt terrible of all in uſe among that people. Some pretend that this was proclaimed by the ſound of four hundred trumpets, and that a perſon ſo excommunicated, was never to be received again into the congregation, and that it was even lawful to put him to death; and they derive the term from שם, *there*, and מתה, *death*, to which they ſuppoſe the expreſſion of St. John to allude, *there is a ſin unto death;* others derive it from שם, *name*, אתא, *comes*, or *approaches*, and ſuppoſe that it anſwers to the *maranatha* of St. Paul, 1 Cor. xvi. 22. and refer it to a tradition among the Jews, derived from Enoch, and recorded Jude, v. 14. See Niddui.

SCAMMONIA Monspeliaca, *Montpelier ſcammony*, a name given by ſome botanical writers to a ſpecies of periploca, diſtinguiſhed by Mr. Tournefort by the name of *periploca Monſpeliaca foliis rotundioribus*. This, in the Linnæan ſyſtem, is a ſpecies of *cynanchum;* which ſee.

SCAMMONY, Scammonium, in *Pharmacy*, an inſpiſſated, gummy, reſinous juice, of the root of a plant of the ſame name, growing in Syria, particularly on the mountains between Aleppo and Latachia, and which being hardy, will thrive in the open air in England on any ſoil. It is a ſpecies of bindweed. See Convolvulus.

This milky juice flows from an inciſion made in the root, and on ſtanding concretes into ſolid maſſes.

It is procured in the following manner by the peaſants, who collect it in the beginning of June: "Having cleared away the earth from about the root, they cut off the top, in an oblique direction, about two inches below where the ſtalks ſpring from it. Under the moſt depending part of the ſlope they fix a ſhell, or ſome other convenient receptacle, into which the milky juice gradually flows. It is left there about twelve hours, which time is ſufficient for draining off the whole juice; this, however, is in ſmall quantity, each root affording but a very few drachms. This juice from the ſeveral roots is put together, often into the leg of an old boot, for want of ſome more proper veſſel, where in a little time it grows hard, and is the genuine ſcammony." The Jews make it their buſineſs to go to the places where the ſcammony is collected, and there buying it while yet ſoft, have an opportunity of mixing it with ſuch things as beſt anſwers their purpoſe; as wheat-flower, aſhes, fine ſand, with all of which Dr. Ruſſel found it adulterated. The pureſt ſcammony is therefore the moſt active and moſt ſoluble. It is brought here from Aleppo, in what are called drums, which weigh from 75 to 125 lbs. each; and from Smyrna in cakes, like wax, packed in cheſts. The beſt is that which is brought from Aleppo in light ſpongy maſſes, eaſily friable, gloſſy, of different ſhades of colour, from grey or yellowiſh to white, almoſt to black; when reduced to powder, of a browniſh-white colour. That ſhould be choſen which crumbles moſt eaſily betwixt the fingers, becomes inſtantly white on the contact of watery moiſture, and leaves little or no fæces on being diſſolved. Its colour in the maſs affords no criterion of its purity or goodneſs. Its ſpecific gravity is 1.235.

The ſcammony of Smyrna, and that of the Eaſt Indies, are leſs valued; the firſt as being more heavy, hard, and black, full of ſand and other impurities; the latter, though light, friable, &c. is in reality only a compoſition of common reſin with ſome other violent purgatives. Pomet aſſerts, that both theſe kinds are rather poiſons than remedies.

Scammony has a ſlight unpleaſant ſmell, and a weak bitteriſh ſlightly acrid taſte. When triturated with water, nearly one-fourth of it is diſſolved, and the ſolution appears ſlightly mucilaginous, opaque, and of a greeniſh-grey colour. This ſolution is not affected by alcohol, ſolutions of ſuperacetate, and acetate of lead, or ſulphate of iron, nor precipitated by the acids; but with ſulphuric acid it gives out the odour of vinegar. Solution of ammonia does not alter it, but potaſs occaſions a yellowiſh precipitate, which is quickly rediſſolved on the addition of an acid. Ether takes up two parts in ten of ſcammony, and, when evaporated, leaves a browniſh ſemitranſparent reſin. Alcohol diſſolves two-thirds of its weight; but proof ſpirit is its beſt menſtruum, taking up the whole except the impurities. Scammony, therefore, appears to contain chiefly reſin, a peculiar extractive matter, and gum.

This gummy reſin is one of the ſtrong ſtimulating cathartics, operating, in general, quickly and powerfully. Scammony appears to have been well known to the Greek and Arabian phyſicians, and was not only employed internally as a purgative, but alſo as an external remedy for tumours, ſcabies, tinea, fixed pains, &c.—Although this drug was ſeldom given alone, yet we find it was very generally uſed as an ingredient in many compounds which were formerly held in very great repute.—Hoffman, however, entertained an opinion, that ſcammony was a dangerous medicine. But ſince Boerhaave's time it has been conſidered as a ſafe though ſtimulating cathartic, and frequently preſcribed uncombined with any other ſubſtance, yet neither producing tormina nor hypercatharſis. Like other reſinous purgatives it is uncertain in its operation, which may be occaſioned by the inteſtines being more or leſs defended from the action of theſe ſtimulants, by the quantity of natural mucus with which they are covered. The doſe is from grs. v to grs. xvj, in powder, or a bolus, or in the form of mixture, triturated with almonds, gum, or extract of liquorice, and water. Its officinal preparations are as follow: *viz.* "Confectio ſcammoniæ," for which the London Pharmacopeia directs to take of ſcammony powdered 1½ oz., cloves bruiſed, ginger-root powdered, of each ſix drachms, and a ſufficient quantity of ſyrup of roſes. Rub the dry ſubſtance into a very dry powder, then add gradually the ſyrup, and rub them again; laſtly, after adding the oil of caraway, mix the whole together. The "electuary ſcammony" of the Dublin Pharmacopeia is prepared by taking ſcammony and ginger-root, of each reduced to powder, an ounce, oil of cloves, a ſcruple, and a ſufficient quantity of ſyrup of orange; mixing the ginger in powder with the ſyrup of orange, then adding the ſcammony, and laſtly the oil. This is a ſtimulating cathartic, and may be given in a doſe of from fʒſs to fʒj; but it is ſeldom ordered. Another preparation is the "Compound powder of ſcammony." (See Powder.) For the "Extractum Colocynthidis compoſitum," ſee Colocynthis; and for the "Compound powder of ſenna," ſee Powder.

Many ill qualities have been aſcribed to it which it does not poſſeſs, and many correctives have been deviſed which it does not need. See Diagrydium.

In cold, indolent, ſerous habits, ſcammony itſelf procures generally a plentiful evacuation with great eaſe and ſafety. Accordingly it is in general uſe as a purgative, in the torpid ſtate of the inteſtines, of leucophlegmatic, hypochondriacal, and maniacal ſubjects; in worm caſes, and the ſlimy ſtate of the bowels to which children are ſubject, and as a hydragogue cathartic in dropſy; but as it is apt to gripe, it is generally united with an aromatic, or a drop or two of ſome eſſential oil: in inflammatory caſes, and with the more irritable diſpoſitions, it is dangerous, but not otherwiſe ſo than the reſt of the ſtrong purgatives. By the ſmallneſs of the doſe of this medicine, its eaſy ſolubility, and its having little taſte, it is fitted for being commodiouſly taken in almoſt any form.

Agreeable purging troches are prepared by grinding together three drachms of ſcammony, four drachms of cryſtals of tartar, four drops of oil of cinnamon, and eight ounces of fine ſugar, and moiſtening the mixture with as much roſe-water as will render it of a due conſiſtence for being formed; each tablet is made to weigh about a drachm, and conſequently contains two grains and a half of ſcammony. One of the moſt elegant liquid preparations is a ſolution of the ſcammony in a ſtrong infuſion or decoction of liquorice, poured off from the fæces, and aromatiſed with ſome grateful diſtilled water, or aromatic tincture, as thoſe of cardamom ſeeds. The dried root of the plant, as well as the juice, may deſerve notice; as Dr. Ruſſel relates, that a decoction of half an ounce of the root procured five ſtools, without gripes, ſickneſs, or any uneaſineſs; and that the decoctions are entirely without ſmell, and in taſte rather ſweetiſh than diſagreeable. Neither the ſtalks, leaves, flowers, nor ſeeds ſeemed to have any purgative virtue. Lewis's Mat. Med. Med. Obſerv. vol. i. p. 13, &c.

The ſcammony now in uſe muſt be very different from that of the ancients, at leaſt in the preparation; becauſe the ancients gave it in much greater doſes: hence Fallopius conjectures the modern ſcammony to be adulterated with juice of tithymal.

Some give the name of American ſcammony to mechoacan.

SCAMNUM HIPPOCRATIS, in *Surgery*, an ancient machine for reducing fractures and diſlocations.

SCAMOZZI, VINCENZO, in *Biography*, a celebrated architect, was born at Vicenza in 1550. He was educated under his father, Gian-Domenico, an able artiſt in the ſame branch, and at the age of ſeventeen made deſigns for buildings that were very highly eſteemed. He went to Venice for improvement, where Palladio and others were then employed about works of magnitude and conſideration, and he made very rapid advances in his profeſſion. At the age of twenty-two he compoſed a treatiſe in ſix books, "De Teatri e delle Scene," which has never been publiſhed. In a viſit to Rome he was engaged in the diligent ſtudy of the remains of antiquity to be found in that city, and in the ſtudy of mathematics under the celebrated Clavio. After extending his tour to Naples, he returned in 1583 to his native city, and ſettled at Venice, where, Palladio being dead, he became the firſt architect, and was employed in various public and private works, of which one of the moſt remarkable was the additions to the library of St. Mark. He was ſent for to Vicenza to finiſh the famous Olympic theatre, by which he gained credit. In 1588 duke Veſpaſian Gonzaga engaged him in the conſtruction of a new theatre at his town of Sabbioneta. After this he viſited many of the chief places on the continent; and decorated ſeveral other cities in Italy, beſides Venice and Vicenza, and few artiſts ſeem to have enjoyed a more extenſive reputation. In 1615 he publiſhed a work entitled "L'Idea dell' Architettura univerſale," in ſix books, which contains many uſeful obſervations and inſtructions. The ſixth book, which contains the five orders of architecture, is moſt eſteemed, and has been tranſlated into the French language. Scamozzi died in 1616. Beſides the writings above-mentioned, he publiſhed a work of deſcriptions, of which three chapters contained the buildings and topography of Rome.

SCAMPÆ, in *Ancient Geography*, a town of Macedonia, on the route from Dyrrhacium to Byzantium, between Claudiana and Tres Tabernæ, according to the Itinerary of Antonine.

SCAMPF, in *Geography*, a town of Switzerland, in the Upper Engadina; 3 miles N. of Zulz.

SCANDA, a town of Imiretta; 40 miles E. of Cotatis.

SCANDAL, in the *popular language*, is ſome action, or opinion, contrary to good manners, or to the general ſenſe of a people.

Scandal alſo denotes a diſadvantageous rumour or report, or an action whereby one is affronted in public.

For the legal puniſhment of ſcandal, ſee SCANDALUM *Magnatum*.

SCANDAL, *Stone of*, *Lapis ſcandali*, or *vituperii*, a ſtone raiſed in the great portal of the Capitol in Rome, whereon was engraven the figure of a lion, upon which bankrupts or ceſſionaries being ſeated bare-breeched, cried with a loud voice, *cedo bonis*, *I ſurrender my effects*; when, ſquatting their breech violently three times on the ſtone, they were acquitted.

It was called the ſtone of ſcandal, becauſe thenceforward the ceſſionary became inteſtable, and incapable of giving any evidence.

Julius Cæſar introduced this form of ſurrender, after abrogating that article of the laws of the Twelve Tables, which allowed their creditors to cut their inſolvent debtors in pieces, and take each his member, or at leaſt to make a ſlave of him.

SCANDALEK, in *Geography*, a town of Pruſſia, in Natangen; 3 miles E. of Barten.

SCANDALERA, a town of Italy, in the department of the Upper Po; 9 miles N. of Cremona.

SCANDALUM MAGNATUM, in *Law*, denotes a ſcandal or wrong done to any high perſonage of the land, as peers, prelates, judges, or other great officers, by falſe or ſlanderous news or tales, whereby any debate or diſcord between them and the commons, or any ſcandal to their perſons might ariſe.

This offence has alſo given name to a writ granted to recover damages thereupon.

Slanders of this kind, though they be ſuch as would not be actionable in the caſe of common perſons, amount to an atrocious injury, which is redreſſed by an action on the caſe founded on many ancient ſtatutes, *viz.* Weſtm. 1. 3 Edw. I. c. 34. 2 Rich. II. c. 5. 12 Rich. II. c. 11. as well on behalf of the crown, to inflict the puniſhment of impriſonment on the ſlanderer, as on behalf of the party, to recover damages for the injury ſuſtained. Words alſo tending to ſcandalize a magiſtrate, or perſon in a public truſt, are reputed more highly injurious than when ſpoken of a private man. (Ld. Raym. 1369.) It is ſaid that formerly no actions were brought for words, unleſs the ſlander was ſuch, as, if true, would endanger the life of the object of it. (2 Vent. 28.) But it is now held, that for ſcandalous words, that may endanger a man in law, by impeaching him of ſome heinous crime, exclude him from ſociety by charging him with having an infectious diſeaſe, impair his trade, by calling a tradeſman a bankrupt, a phyſician a quack, or a lawyer a knave, or affect a peer of the realm, a magiſtrate, or one in public truſt, an action on the caſe may be had, without proving any particular damage to have happened, but merely upon the probability that it might happen. However, actions for words muſt be brought within two years after the injury committed. With regard to words not apparently, and upon the face of them injurious, the plaintiff muſt aver ſome particular damage to have happened, which is called laying his action with a *per quod*. But mere ſcurrility, or opprobrious words, which neither in themſelves import, nor are in fact attended with any injurious effects, will not ſupport an action. Words of heat and paſſion, as to call a man a rogue and raſcal, if productive of no ill conſequence, and not of any of the dangerous ſpecies before-mentioned, are not actionable; neither are words ſpoken in a friendly manner, as by way of advice, admonition, or concern, without any tincture or circumſtance of ill-will; for in both theſe caſes they are not maliciouſly ſpoken, which is part of the definition of ſlander (Finch. l. 186. 1 Leo. 82. Cro. Jac. 91.); neither are any reflecting words made uſe of in legal proceedings, and pertinent to the cauſe in hand, a ſufficient ground of action for ſlander. (Dyer, 285. Cro. Jac. 90.) Alſo, if the defendant be able to juſtify and prove the words to be true, no action will lie, even though ſpecial damage hath enſued; for then it is no ſlander or falſe tale. In this caſe, though there may be damage ſufficient accruing from it, yet if the fact be true, it is *damnum abſque injuria;* and where there is no injury the law gives no remedy. Blackſtone's Comment. vol. iii.

SCANDARETTA, or Scanderoon, in *Geography*, a village of Paleſtine, on the coaſt of the Mediterranean, founded by Alexander the Great when he laid ſiege to Tyre, from which it is diſtant about ſix miles. At preſent it conſiſts only of a few houſes.

SCANDARIEH, a town of the Arabian Irak, on a river or canal, which forms a communication between the Tigris and the Euphrates; 120 miles N.W. of Baſſorah.

SCANDENS, Caulis, in *Botany*, is a climbing ſtem, whether ſupported by tendrils, as in the vine; by adheſive fibres, as in the ivy; or by its own circumvolutions, as in the convolvulus and honeyſuckle. See Caulis.

SCANDERBERG, in *Biography*, prince of Albania, whoſe proper name was Caſtriot, ſon of John, prince of that country, was born in 1404. He was ſent by his father as a hoſtage to ſultan Amurath II., and was educated in the Mahometan religion, and when he was only eighteen years old he was placed at the head of a body of troops with the title of ſanjiak. After the death of his father, in 1432, he formed the deſign of poſſeſſing himſelf of his principality, and having accompanied the Turkiſh army to Hungary, he made a ſecret alliance with the famous Huniades, promiſing to deſert to the Chriſtians during the firſt battle that ſhould occur. This he put in execution, and having defeated the Turks with great loſs, he compelled Amurath's ſecretary to ſign an order for the governor of Croia, the capital of Albania, to deliver that place and its citadel to its bearer. The ſtratagem ſucceeded, he aſcended the throne of his father, and renounced the Mahometan religion. Amurath made many attempts to recover Albania, but without effect. A courſe of warfare was continued for eleven years under Mahomet II., Amurath's ſucceſſor, who, by the conqueſt of Conſtantinople, was become very formidable to all Europe. Scanderberg met with various fortune, but was generally ſucceſsful, ſo that the ſultan, in 1461, propoſed terms of peace to him, which were accepted. Scanderberg then, at the deſire of the pope, came into Italy to the ſuccour of Ferdinand II., king of Naples, beſieged in Bari, and having cauſed the ſiege to be raiſed, contributed greatly to the ſubſequent victory over the count of Anjou. The Venetians having entered into a war with Mahomet, induced Scanderberg to renounce his treaty with the ſultan, and make an inroad into his dominions. He obtained ſeveral important victories, and ſaved his own capital, which was inveſted by a great army under Mahomet himſelf. He died in 1467, at the age of 63, and his death was conſidered by the ſultan as relieving him from the moſt formidable enemy he had to contend with, and it was ſoon followed by the ſubmiſſion of Albania to the Turkiſh dominion. Scanderberg was undoubtedly one of the greateſt warriors of his time. By many of his biographers he has been repreſented as a hero of romance, while his enterprize and military ſkill placed him among the ableſt and moſt ſucceſsful of generals. The Turks gave a ſingular proof of their admiration of his valour, for when they took Liſſa, the place at which he had been interred, they dug up his bones with great reſpect, and made uſe of them as relics, ſet in gold and ſilver, to be worn about their perſons as amulets.

SCANDEROON, in *Geography*. See Alexandretta.

SCANDIACA, in *Botany*, a name given by ſome authors to the white-flowered lamium, called *archangel* by others.

SCANDIANO, in *Geography*, a town of Italy, in the duchy of Modena; 9 miles W. of Modena.

SCANDINAVIA, a name not unfrequently given to that part of Europe, which comprehends Denmark, Sweden, and Norway, and ſometimes applied more extenſively to adjacent countries and iſlands. Scandinavia, conſidered as compriſing the preſent Sweden, Norway, Lapland, and Finmark, was formerly thought to have been an iſland, but is now well known to be a peninſula. Pliny calls it Scandinuvia, and according to the orthography of Voſſius and Gronovius, it is written Scandinovia; by Xenophon Lampſacenus, it is named Baltia; by Timæus, Baſilea; and by Pytheas, ſometimes Baſilea, and at other times Abalus. The writers of the middle ages denominate it Scanza, Scanzia, Scantia, and Scandia, which ſome derive from the German or Gothic word *Scanzen*, ſignifying caſtles, alleging that the firſt inhabitants made caſtles of the ſteep rocks with which the country abounds; and hence they ſay came the word Scandinavia, denoting "a country filled with caſtles." Others again write Scandinavia, Scanzia, &c. from the word *Seckanten*, importing the ſea-coaſt or ſhore. The Greek word *Baltia* ſignifies the breaking in of the ſea. Tacitus places in Scandinavia two diſtinct nations, the Suiones and the Sittones, the former inhabiting the preſent Sweden. and the latter Norway; for they were ſeparated by mount Sevo, now Seager, the ridge that ſeparates Norway from Sweden. However it is certain, that before the time of Tacitus, Scandinavia was inhabited by the Goths; as we have already ſtated under the article Goths. It has been an opinion very generally maintained, that a few years before the commencement of the Chriſtian era, a nation of Aſiatic Goths, under Odin, ſettled in the Scandinavian territory, as we have already mentioned under the article Runic. But the hiſtory of Odin, and of his appearance among the Scandinavians, is involved in conſiderable obſcurity. (See Odin.) M. Mallet, in his "Northern Antiquities," acknowledges that he can diſcover nothing very certain concerning Odin, but only this, that he was the founder of a new religion before unknown to the rude and artleſs inhabitants of Scandinavia. For other particulars reſpecting him we refer to his biographical article. In inveſtigating the religion of the Scandinavians, he begins with that of the ancient Scythians, from whom they are ſuppoſed to have originated. The religion of the Scythians, he ſays, was, in the firſt ages, extremely ſimple, conſiſting of a few plain eaſy doctrines, which ſeem to have comprized the whole of religion known to the firſt inhabitants of Europe. Theſe were preſerved, in the North, without any material alteration. In proceſs of time, however, the Scythian nations ſuffered their religion to be corrupted by an intermixture of ceremonies, ſome of them ridiculous, others cruel; in which, by little and little, as it commonly happens, they placed the whole of their religion. Accordingly our author diſtinguiſhes two different epochs or ages in the religion of this people; and in each of theſe he thinks it of importance not to confound the opinions of the ſages with fables or mythology of the poets. The Scythian religion, in its primeval purity, taught the being of a ſupreme God, maſter of the univerſe, to whom all things were ſubmiſſive and obedient. (See Tacitus, de Mor. Germ. c. xxxv.) It attributed to their deity, an infinite power, a boundleſs knowledge, an incorruptible juſtice. It forbad the repreſentation of this divinity under any corporeal form, or the confinement of him within the incloſure of walls; but taught that it was only within woods and conſecrated foreſts that they could ſerve him properly. (Id. c. ix.) From this ſupreme God were ſprung, as it were emanations of his divinity, an infinite number of ſubaltern deities and genii, of which every part of the world was the ſeat and temple. Theſe intelligences directed the operations of nature; and each element was under the guidance of ſome being peculiar to it. The earth, the water, the fire, the air, the ſun, moon, and ſtars had each their reſpective divinity. The trees, foreſts, rivers, mountains, rocks, winds, thunder and tempeſts had the ſame; and merited on that ſcore a religious worſhip, which, at firſt, could not be directed to the viſible object, but to the intelligence with which it was animated. The motive of this worſhip was the fear of a deity irritated by the ſins of men, but who, at the ſame time, was merciful, and capable of being appeaſed by prayer and repentance. They looked up to him as to the active principle, which, by uniting with the earth or paſſive principle, had produced men, animals, plants, and all viſible beings; they even believed that he was the only agent in nature who preſerves the ſeveral beings, and diſpoſes of all events. To ſerve this divinity with ſacrifices and prayers, to do no wrong to others, and to be brave and intrepid themſelves, were all the moral conſequences they drew from theſe doctrines. Laſtly, the belief of a future ſtate cemented and completed the whole building. Cruel tortures were there reſerved for ſuch as deſpiſed theſe three fundamental precepts of morality, and joys without number and without end awaited every religious, juſt, and valiant man.

Theſe are the principal heads of that ancient religion, which probably prevailed for many ages through the greateſt part of the north of Europe, and doubtleſs among ſeveral nations of Aſia. It was preſerved tolerably pure in the North till towards the decline of the Roman republic; one may judge at leaſt by the teſtimony of ſeveral authors, that the Germans had maintained till that time the chief of theſe doctrines, whilſt the inhabitants of Spain, Gaul and Britain, half ſubdued by the arms and luxury of the Romans, adopted by degrees new gods, at the ſame time that they received new maſters. It is probable then, that it was not till the arrival of Odin in the North, that the Scythian religion among the ancient Danes and other Scandinavians began to loſe the moſt beautiful traits of its original purity. Though the fact itſelf is probable, it is not ſo eaſy to aſſign the cauſes of it.

The moſt ſtriking alteration in the doctrines of the primitive religion regarded the number of the gods who were to be worſhipped. A capital point among the Scythians was the pre-eminence of one all-powerful and perfect being over all the other intelligences with which univerſal nature was peopled. But their deſcendants, abandoning this ſimplicity of religion, aſſociated to the ſupreme God many of thoſe genii or ſubaltern divinities, who had been always ſubordinate to him; and by degrees they ſelected, as the object of their peculiar veneration, that divinity, whoſe dominion extended over ſuch things as were moſt dear to them, or which appeared moſt worthy of admiration. This happened in Scandinavia. Accordingly, that ſupreme being, the idea of whom comprehends all exiſtence, was reſtrained to one particular province, and paſſed among the generality of inhabitants for the god of war. This was the character aſcribed to Odin. The principal deity after Odin was Frigga or Frea, his wife, denoting the Earth. She is ſuppoſed to have been the ſame with the Venus of the Greeks and Romans; and the ſixth day of the week, which was conſecrated to her under the name of Freytag, Friday, or Frea's day, was rendered into Latin Dies Veneris, or Venus's day. The third principal deity of the Scandinavians was Thor, whoſe authority extended over the winds and ſeaſons, and particularly over thunder and lightning. Such a deity is mentioned by Cæſar under the name of Jupiter. He is ſuppoſed to have ſprung from the union of Odin or the ſupreme being, and the Earth.

The three deities now mentioned formed the court or ſupreme council of the gods, and were the principal objects of the worſhip and veneration of all the Scandinavians. There were other deities of the ſecond order, of whom the Edda reckons twelve, beſides twelve goddeſſes, to whom divine honours were due. Loke was regarded by the ancient Scandinavians as their evil principle, and ranked among the gods. To their gods they attributed the creation and government of the world; and they conſidered all nature as animated and moved by one or more intelligent cauſes, which was, in their ſyſtem, nothing more than the inſtrument or organ of the divinity, and a kind of book in which they could read the will and deſign of their deity. Hence they were led to regard various phenomena, of an indifferent and of the moſt trivial kind, as intimations which the deity gave of his will to mankind. Hence proceeded oracles, divinations, auſpices, preſages, and lots, and alſo magic in all its different degrees and forms. Every man, in their ſyſtem, had his peculiar deſtiny, who aſſiſted at the moment of his birth, and marked before-hand the period of his days; but Odin, or the ſupreme god, they probably regarded as the author and arbiter of the deſtinies. The effect of this principle was to produce in thoſe who were fond of war, a blind temerity which diſregarded danger. They had alſo another principle, the influence of which was no leſs barbarous; and this was, that the term of a man's life might be prolonged, if any one would put himſelf in his place and die in his ſtead. This was often practiſed when a prince or illuſtrious warrior was ready to periſh by ſome accident. Odin was appeaſed by ſuch a ſacrifice, and conſented to revoke the deſtinies and to lengthen the thread of the life that was to be ſaved. The other precepts of this religion probably extended no farther than to be brave and intrepid in war, to ſerve the gods, and to appeaſe them by ſacrifices; not to be unjuſt, to ſhew hoſpitality to ſtrangers, to keep their words inviolably, and to be faithful to the marriage-bed.

The Scandinavians adopted, as a principle of their religion, the belief of the immortality of the ſoul, and of a future ſtate, which would be happy or miſerable according to men's preſent conduct. Upon this principle they founded the obligation of ſerving the gods, and of being valiant in battle. After this conciſe ſtatement of their principles, it is no wonder that the Scandinavians ſhould carry their valour to the utmoſt exceſſes of fanaticiſm.

Although the Scandinavians had at firſt no incloſed temples for worſhip, they formed by degrees new connections and intercourſe with the other nations of Europe, either by their expeditions, or by foreign colonies which were eſtabliſhed among themſelves, and thus admitted a change in their religion, which tolerated temples and idols, and in proceſs of time adopted them without reſerve. The three principal nations of Scandinavia, *viz.* Sweden, Denmark, and Norway, vied with each other in erecting temples, but none were more famous than that of Upſal in Sweden, which glittered with gold. A chain of the ſame metal, or at leaſt one that was gilt, ran round the roof, although the circumference was not leſs than 900 ells. Hacon, earl of Norway, built another near Drontheim, which was not inferior to that of Upſal. Iceland alſo had its temples, altars, and idols. The great temple of Upſal was particularly conſecrated to the three ſuperior deities, each of whom was characterized by ſome peculiar ſymbol. They had alſo three great feſtivals in the year, which were celebrated in honour of their gods, and on theſe occaſions, ſacrifices, feaſting, dances, nocturnal aſſemblies, and all the demonſtrations of a moſt diſſolute joy, were authorized by general uſage. Theſe correſponded to the ſaturnalia of the Romans. In the earlieſt ages the offerings were ſimple, ſuch as ſhepherds and ruſtics could preſent: they loaded the altars of their gods with the firſt-fruits of their crops, and the choiceſt products of the earth. Afterwards they ſacrificed animals. At length they proceeded to ſhed the blood of men, nor was this barbarous practice, which was ancient and almoſt univerſal, entirely aboliſhed among the northern nations till towards the ninth century, becauſe before that time they had not received the light of the goſpel, and were ignorant of thoſe arts which had ſoftened the ferocity of the Romans and Greeks even whilſt they were ſtill pagans.

In every ninth month this bloody ceremony was renewed; it laſted nine days, and every day they offered up nine living victims, whether men or animals. But the moſt ſolemn ſacrifices were thoſe which were offered at Upſal in Sweden every ninth year. Then the king, ſenate, and all the citizens of any diſtinction, were obliged to appear in perſon, and to bring offerings, which were placed in the great temple abovementioned. Strangers alſo flocked in crowds from all parts, and none were excluded but thoſe whoſe honour had been ſtained, and eſpecially ſuch as had been accuſed of cowardice. Then they choſe among the captives in time of war, and among the ſlaves in time of peace, nine perſons to be ſacrificed. In great calamities, ſuch as an urgent famine, they ſacrificed the king, as the higheſt price with which they could purchaſe the divine favour. Theſe abominable ſacrifices were accompanied with various ceremonies. When the victim was choſen, they conducted him towards the altar, where the ſacred fire was kept burning night and day, and the nine were killed at the foot of the altar. When men were ſacrificed, they were laid upon a large ſtone, and inſtantly ſtrangled or knocked on the head. The body was opened by the prieſts, who read in the entrails, and eſpecially in the heart, the will of the gods, and the good or ill fortune that was impending. The bodies were afterwards burnt, or ſuſpended in a ſacred grove near the temple. Part of the blood was ſprinkled upon the people, and part upon the ſacred grove; and with part they bedewed the images of the gods, the altars, and the temple. Sometimes theſe ſacrifices were differently performed: in the neighbourhood of the temple was a deep well; the choſen perſon was thrown headlong into it. The whole ceremony was concluded with magnificent feaſtings, at which they drank immoderately, and indulged in licentious practices, which ſhocked the wiſeſt men among them, and cauſed them to refuſe giving their aſſiſtance at them.

Tacitus ſupplies us with an account of the moſt prominent and diſtinguiſhing circumſtances that characterize the ancient Gothic form of government. In his hiſtory we ſee kings, who owe their advancement to an illuſtrious extraction, preſiding, rather than ruling, over a free people. Here we ſee the nation aſſembling at certain ſtated times, and making reſolutions in their own perſons on all affairs of importance, as to enact laws, to chooſe peace or war, to conclude alliances, to diſtribute juſtice in the laſt reſort, and to elect magiſtrates. Here alſo we diſtinguiſh a body of the grandees or chiefs of the nation, who prepare and propoſe the important matters, the deciſion of which is reſerved for the general aſſembly of all the free men: that is, we trace here the firſt lineaments, as it were, of what was afterwards named in different countries, "the council of the nation," "the ſenate," "the houſe of peers," &c. Here we diſcover the origin of that ſingular cuſtom, of having an elective general under an hereditary king; a cuſtom received among moſt of the nations of German extraction, who had either mayors of the palace, or grand marſhals, or conſtables, or counts: for all theſe different names only expreſſed the ſame thing in different countries. Laſtly, if we examine with attention the words of Tacitus, we cannot doubt but vaſſalage and the feudal tenure had already taken footing among this people before ever they left their native foreſts. For although perhaps they did not in thoſe early times give lands in fee, and although their fees or fiefs were then perhaps nothing but arms, war-horſes, and banquets; what we read of the reciprocal engagements between the princes or chiefs and their followers, evidently contains whatever was eſſential to the nature of vaſſalage, and all the changes which were afterwards made in it were only ſlight and accidental, occaſioned by the conqueſts and new eſtabliſhments which followed from it.

If we conſider after this, the character of theſe nations, as it is ſketched out by Tacitus, we ſhall not be ſurprized to ſee them wedded to inſtitutions which they found ſo ſuitable to their ſituation and temper; for being the moſt free and warlike people upon earth, they muſt have had a natural averſion to the authority of a ſingle perſon; and if they placed themſelves under leaders, it was only becauſe war cannot be conducted in any other form. As free men, they would only obey from choice, and be leſs influenced by perſonal authority than by reaſon; as warriors, they conceived no other duty to be owing to a prince, than to be ready to ſhed their blood for his cauſe. If we inquire how theſe men acquired and preſerved ſo great a degree of liberty; M. Mallet replies, they were free, becauſe they inhabited an uncultivated country, rude foreſts and mountains; and liberty is the ſole treaſure of an indigent people; for a poor country excites no avidity, and he who poſſeſſes little, defends it eaſily. They were free, becauſe they were ignorant of thoſe pleaſures, often ſo dearly bought, which render the protection of a powerful maſter neceſſary. They were free, becauſe hunters and ſhepherds, who wander about in woods through inclination or neceſſity, are not ſo eaſily oppreſſed as the timorous inhabitants of incloſed towns, who are there chained down to the fate of their houſes; and becauſe a wandering people, if deprived of their liberty in one place, eaſily find it in another, as well as their ſubſiſtence. Laſtly, they were free, becauſe knowing not the uſe of money, there could not be employed againſt them that inſtrument of ſlavery and corruption, which enables the ambitious to collect and diſtribute at will the ſigns of riches.

Further, that ſpirit of liberty, ariſing from their climate, and from their ruſtic and military life, had received new ſtrength from the opinions it had produced; as a ſucker which ſhoots forth from the root of a tree, ſtrengthens by embracing it. In effect, theſe people, eſteeming beyond all things, the right of revenging an affront, the glory of deſpiſing death and periſhing ſword in hand, were always ready to attack tyranny in the firſt who dared to attempt it, and in whatever formidable ſhape it appeared.

By theſe means was liberty preſerved among the inhabitants of Germany and the North, as it were in the bud, ready to bloſſom and expand through all Europe, there to flouriſh in their ſeveral colonies. It is remarked by the author of the "Spirit of Laws," that in proportion as any people love liberty, the milder are their puniſhments. The ancient Germans and Scandinavians, the moſt brave and free race of men that perhaps ever exiſted, knew ſcarcely any other than pecuniary penalties. They carried this ſpirit with them through all parts of Europe, as appears from the codes of the Viſigoths, the Burgundians, &c. But the governments which they eſtabliſhed in the more ſouthern countries could not ſubſiſt with ſo much lenity. The diſtribution of the people into different communities ſubordinate to one another, the right of being judged every one by the members of his own community, the care of watching over each citizen committed to the community of which he was a member, the general aſſemblies of the whole nation, with which alone the legiſlative power was depoſited, &c. were inſtitutions that exiſted among the Germans in the time of Tacitus, and without doubt long before. They prevailed in Denmark and Sweden; they were carried into Iceland, where they were perfected; they followed the Saxons into England; and although in times of confuſion they were almoſt ſunk into oblivion, the great Alfred immortalized his name by reviving them. Traces of them might be eaſily ſhewn in the firſt eſtabliſhments of the Franks in Gaul, of the Goths in Spain, and of the ſame in ſeveral parts of Germany. With regard to the laws which prevailed in Scandinavia during the times of paganiſm, all that we can ſay for certain about them may be reduced within very ſmall compaſs. Tradition, cuſtom, maxims learnt by heart, and above all, ſimplicity of manners, ſerved this people in the firſt ages inſtead of laws. They had maxims, which from time immemorial had been in the mouths of their ſages, and which were thought to have been delivered to the firſt men by the gods themſelves. The laws of the Scandinavians reſembled thoſe of the Angles and Jutes, who ſhared with the Saxons in the honour of being conquerors of Great Britain; and for a ſketch of theſe we refer to the article SAXONS.

From the whole hiſtory of the ancient Scandinavians it appears that they breathed nothing but war, which was at once with them the ſource of honour, riches, and ſafety. Their education, laws, prejudices, morality, and religion, all concurred to make that their ruling paſſion and only object. From their moſt tender age they applied themſelves to learn the military art; they hardened their bodies, and accuſtomed themſelves to cold, fatigue, and hunger. They exerciſed themſelves in running, in the chace, in ſwimming acroſs the greateſt rivers, and in handling their arms. The very ſports of childhood itſelf, and of early youth, were directed all towards this end: dangers were always intermingled with their play. For it conſiſted in taking frightful leaps, in climbing up the ſteepeſt rocks, in fighting naked with offenſive weapons, in wreſtling with the utmoſt fury: it was therefore common to ſee them at the age of fifteen years already grown robuſt men, and able to make themſelves feared in combat. It was alſo at this age that their young men became their own maſters, which they did by receiving a ſword, a buckler, and a lance. This ceremony was performed in ſome public meeting. One of the principal perſons of the aſſembly armed the youth in public. "This (we are told by Tacitus) was his *toga virilis*, his entrance upon dignities. Before this he made only part of a family, now he became a member of the ſtate." After this he was obliged to provide for his own ſubſiſtence, and was either now to live by hunting, or by joining in ſome excurſion againſt an enemy. Particular care was taken to prevent theſe young ſoldiers from enjoying too early an acquaintance with the oppoſite ſex, till their limbs had acquired all the vigour of which they were capable. Indeed they could have no hope to be acceptable to the women, but in proportion to the courage and addreſs they had ſhewn in war and in their military exerciſes.

Their children were generally born in the midſt of camps and armies. Their eyes, from the moment they were firſt opened, ſaw nothing but military ſpectacles, arms, effuſion of blood, and combats either real or in ſport: thus as they grew up from their infancy, their ſouls were early diſpoſed to imbibe the cruel prejudices of their fathers.

Their laws for the moſt part (like thoſe of the ancient Lacedæmonians) ſeemed to know no other virtues than thoſe of a military nature, and no other crimes but cowardice. They inflicted the greateſt penalties on ſuch as fled the firſt in battle. The laws of the ancient Danes, according to Saxo, excluded them from ſociety and declared them infamous. Among the Germans this was ſometimes carried ſo far as to ſuffocate cowards in mud; after which, they covered them over with hurdles: to ſhew, ſays Tacitus, that though the puniſhment of crimes ſhould be public, there are certain degrees of cowardice and infamy which ought to be buried in eternal ſilence. The moſt flattering diſtinctions were reſerved for ſuch as had performed ſome ſignal exploit; and the laws themſelves diſtributed men into different ranks according to their different degrees of courage.

Religion, by annexing eternal happineſs to the military virtues, had given the laſt degree of activity to the ardour and propenſity theſe people had for war. Their contempt of death was proverbial, and characteriſed the chief warrior and the private ſoldier. To die with his arms in his hand was the vow of every free man, and the pleaſing idea they had of this kind of death naturally led them to dread ſuch as proceeded from diſeaſe and old age. Among theſe people none were found who were guilty of cowardice, and the bare ſuſpicion of that vice was always attended with univerſal contempt. A man who had loſt his buckler, or who had received a wound behind, durſt never more appear in public. In order to acquire glory, the ancient Scandinavians employed various means ſuited to the groſſneſs and rudeneſs of the times. One method which they practiſed with this view, was that of burying their heroes under little hills, which they raiſed in the middle of ſome plain, and of giving to theſe hillocks, and ſometimes to the plains themſelves, the names of the perſon who was there interred. (See BARROW.) They alſo availed themſelves of the art of poetry to immortalize their kings or great captains. See SCALD.

A people who nouriſhed ſo ſtrong a paſſion for war as the Scandinavians would ſeek occaſions for it: and ſo determined and prepared were they for acts of hoſtility, that they were accuſtomed every ſpring to hold a general aſſembly, at which every free man appeared completely armed, and ready to go upon any expedition. When they had determined on war, and ſettled the plan of the campaign, they immediately began their march, furniſhed each of them with a proper quantity of proviſions; and almoſt every grown man in the country made haſte to join the army thus tumultuouſly aſſembled. We are not to wonder after this, that there ſhould iſſue from the North ſwarms of ſoldiers, as formidable for their numbers as their valour: and we ought not haſtily to conclude from hence, that Scandinavia formerly contained more people than it does at preſent. We have had many reports of the incredible multitudes of men, which that country is ſaid to have poured forth: but on the other hand, who does not know how much nations and hiſtorians have been, in all ages, inclined to exaggeration in this reſpect; ſome being deſirous to enhance the power of their country, and others, when it has been conquered, being willing to ſave its credit by making it yield only to ſuperior numbers? But the greateſt part have been guilty of enlargement from no other motive than a blind love of the marvellous, authoriſed by the difficulty of pronouncing with certainty on a ſubject, in which men often commit great miſtakes even after long reſearches. Beſides this, it is very probable that many particular circumſtances of thoſe famous expeditions made by the Scandinavians, have contributed to countenance that name of *Vagina gentium,* which an hiſtorian (Jornandes) gives their country. For when theſe emigrations were made by ſea, the promptitude and celerity with which they could carry their ravages from one coaſt to another, might eaſily multiply armies in the eyes of the people they attacked, and who heard many different irruptions ſpoken of almoſt at the ſame time. If, on the contrary, they iſſued forth by land, they found every where on their march nations as greedy of fame and plunder as themſelves, who joining with them, afterwards paſſed for people of the ſame original with the firſt ſwarm which put itſelf in motion. It ſhould alſo be conſidered, that theſe emigrations did not all of them take place at the ſame time; and that after a nation was thus exhauſted, it probably remained inactive until it had been able to recruit its numbers. The vaſt extent of Scandinavia being in thoſe times divided among many different people who were little known, and only deſcribed by ſome one general name, as that of Goths, for inſtance, or Normans (that is Northern men), it could not exactly be aſcertained from what country each troop originally came, and ſtill leſs to what degree of depopulation each country was reduced after loſing ſo great a quantity of its inhabitants. But what, in Mallet's opinion, beſt accounts for thoſe numerous and frequent inundations of northern people, is that we have reaſon to believe, entire nations often engaged in enterpriſes of this ſort: even the women and children ſometimes marched in the rear of the armies, when a people, either by inconſtancy, by indigence, or the attraction of a milder climate, reſolved to change their place of abode. Projects of this kind, it is true, appear very ſtrange to us at preſent; but it is no leſs true, that our anceſtors often engaged in them.

From the obſervations already made, and other circumſtances that might be adduced, we may ſafely conclude, that as all were ſoldiers among the ancient Scandinavians, they could eaſily fill all Europe with the noiſe of their arms, and ravage for a long time different parts of it, although the ſum total of the inhabitants ſhould have been much leſs than it is at preſent. If it was otherwiſe, we muſt acknowledge, that this extreme population can be very ill reconciled, either with what hiſtory informs us of the manners, cuſtoms, and principles of the ancient Scandinavians, or with the foundeſt notions of policy with reſpect to what makes the true proſperity of a people. For we cannot allow them ſuch a ſuperiority over us in the number of inhabitants, without granting them at the ſame time a proportionable excellence in their cuſtoms, manners, civil regulations, and conſtitution of government, as ſo many efficacious cauſes of the good or bad ſtate of all ſocieties, and conſequently of their greater or leſs degree of population. But who can perſuade himſelf, that thoſe ſavage times when men ſowed and reaped but little, when they had no other choice but that of the deſtructive profeſſion of arms, or of a drowſy indolence no leſs deſtructive; when every petty nation was torn to pieces either by private revenge and factions within, or by war with their neighbours from without; when they had no other ſubſiſtence but rapine, and no other ramparts but wide frontiers laid waſte; who can believe ſuch a ſtate as this to be more favourable to the propagation of the human ſpecies, than that wherein men's goods and perſons are in full ſecurity; wherein the fields are covered with labourers, and their cities, rich and numerous, flouriſh in tranquillity; wherein the people are left to breathe during long intervals of peace, and there is never more than a ſmall part of the inhabitants to whom war is deſtructive: and laſtly, wherein commerce, manufactures, and the arts offer ſo many reſources, and ſecond ſo well that natural propenſity to increaſe and multiply, which nothing but the fear of indigence can check and reſtrain?

As to the tactics of the Northern nations we may obſerve, that it appears to have been their cuſtom to diſpoſe an army in the form of a triangle or pyramid, the point of which was directed againſt the centre of the enemy's army. This body was only compoſed of infantry; the cavalry being generally upon a very inconſiderable footing in the North, whether becauſe the country is ſo divided there by mountains and arms of the ſea, or becauſe their principal forces were reſerved for the marine. They had only ſome ſoldiers who ſerved both on foot and horſeback, like our dragoons at preſent, and who were commonly placed in the flanks of their armies. When they were going to join battle, they raiſed great ſhouts, they claſhed their arms together, they invoked with a great noiſe the name of Odin, and ſometimes ſung hymns in his praiſe. They made an intrenchment with their baggage round the camp, where the women and children remained during the engagement. The conquered in vain fled there for refuge if they happened to be routed. Moſt commonly the women only waited their coming back to cut them in pieces; and if they could not oblige them to return to battle, they choſe to bury themſelves and their children in one common carnage with their huſbands, rather than fall into the hands of a mercileſs conqueror. Such were the dreadful effects of that inhumanity with which war was then carried on. An act of rigour occaſioned an act of cruelty, and this again produced a degree of barbarity ſtill greater. The chains and puniſhments which were reſerved for the vanquiſhed, only ſerved to render the victory the more bloody, and to make it coſt the dearer to thoſe who purchaſed the honour of deſtroying their fellow-creatures without neceſſity.

Their offenſive weapons were commonly the bow and arrows, the battle-axe, and the ſword. The ſword was ſhort, moſt frequently crooked, in the manner of a ſcimitar, and hung to a little belt which paſſed over the right ſhoulder. Yet they ſometimes made uſe of very long ſwords which went by a different name, (ſpad or ſpada,) and theſe were what the Cimbri employed, according to Plutarch. Their champions or heroes took particular care to procure very keen ſwords, which they inſcribed with myſterious characters, and called by ſuch names as might inſpire terror. The battle-axe had two edges; when it had a long handle it went by the name of an halberd, and was particularly affected by the Trabants, (or Drabants,) or thoſe who ſtood upon guard in the caſtles of their kings. The Scandinavians were reckoned very ſkilful at ſhooting, and accordingly made great uſe of the bow, as we learn from all enables the ambitious to collect and diſtribute at will the ſigns of riches.

Further, that ſpirit of liberty, ariſing from their climate, and from their ruſtic and military life, had received new ſtrength from the opinions it had produced; as a ſucker which ſhoots forth from the root of a tree, ſtrengthens by embracing it. In effect, theſe people, eſteeming beyond all things, the right of revenging an affront, the glory of deſpiſing death and periſhing ſword in hand, were always ready to attack tyranny in the firſt who dared to attempt it, and in whatever formidable ſhape it appeared.

By theſe means was liberty preſerved among the inhabitants of Germany and the North, as it were in the bud, ready to bloſſom and expand through all Europe, there to flouriſh in their ſeveral colonies. It is remarked by the author of the "Spirit of Laws," that in proportion as any people love liberty, the milder are their puniſhments. The ancient Germans and Scandinavians, the moſt brave and free race of men that perhaps ever exiſted, knew ſcarcely any other than pecuniary penalties. They carried this ſpirit with them through all parts of Europe, as appears from the codes of the Viſigoths, the Burgundians, &c. But the governments which they eſtabliſhed in the more ſouthern countries could not ſubſiſt with ſo much lenity. The diſtribution of the people into different communities ſubordinate to one another, the right of being judged every one by the members of his own community, the care of watching over each citizen committed to the community of which he was a member, the general aſſemblies of the whole nation, with which alone the legiſlative power was depoſited, &c. were inſtitutions that exiſted among the Germans in the time of Tacitus, and without doubt long before. They prevailed in Denmark and Sweden; they were carried into Iceland, where they were perfected; they followed the Saxons into England; and although in times of confuſion they were almoſt ſunk into oblivion, the great Alfred immortalized his name by reviving them. Traces of them might be eaſily ſhewn in the firſt eſtabliſhments of the Franks in Gaul, of the Goths in Spain, and of the ſame in ſeveral parts of Germany. With regard to the laws which prevailed in Scandinavia during the times of paganiſm, all that we can ſay for certain about them may be reduced within very ſmall compaſs. Tradition, cuſtom, maxims learnt by heart, and above all, ſimplicity of manners, ſerved this people in the firſt ages inſtead of laws. They had maxims, which from time immemorial had been in the mouths of their ſages, and which were thought to have been delivered to the firſt men by the gods themſelves. The laws of the Scandinavians reſembled thoſe of the Angles and Jutes, who ſhared with the Saxons in the honour of being conquerors of Great Britain; and for a ſketch of theſe we refer to the article SAXONS.

From the whole hiſtory of the ancient Scandinavians it appears that they breathed nothing but war, which was at once with them the ſource of honour, riches, and ſafety. Their education, laws, prejudices, morality, and religion, all concurred to make that their ruling paſſion and only object. From their moſt tender age they applied themſelves to learn the military art; they hardened their bodies, and accuſtomed themſelves to cold, fatigue, and hunger. They exerciſed themſelves in running, in the chace, in ſwimming acroſs the greateſt rivers, and in handling their arms. The very ſports of childhood itſelf, and of early youth, were directed all towards this end: dangers were always intermingled with their play. For it conſiſted in taking frightful leaps, in climbing up the ſteepeſt rocks, in fighting naked with offenſive weapons, in wreſtling with the utmoſt fury: it was therefore common to ſee them at the age of fifteen years already grown robuſt men, and able to make themſelves feared in combat. It was alſo at this age that their young men became their own maſters, which they did by receiving a ſword, a buckler, and a lance. This ceremony was performed in ſome public meeting. One of the principal perſons of the aſſembly armed the youth in public. "This (we are told by Tacitus) was his *toga virilis*, his entrance upon dignities. Before this he made only part of a family, now he became a member of the ſtate." After this he was obliged to provide for his own ſubſiſtence, and was either now to live by hunting, or by joining in ſome excurſion againſt an enemy. Particular care was taken to prevent theſe young ſoldiers from enjoying too early an acquaintance with the oppoſite ſex, till their limbs had acquired all the vigour of which they were capable. Indeed they could have no hope to be acceptable to the women, but in proportion to the courage and addreſs they had ſhewn in war and in their military exerciſes.

Their children were generally born in the midſt of camps and armies. Their eyes, from the moment they were firſt opened, ſaw nothing but military ſpectacles, arms, effuſion of blood, and combats either real or in ſport: thus as they grew up from their infancy, their ſouls were early diſpoſed to imbibe the cruel prejudices of their fathers.

Their laws for the moſt part (like thoſe of the ancient Lacedæmonians) ſeemed to know no other virtues than thoſe of a military nature, and no other crimes but cowardice. They inflicted the greateſt penalties on ſuch as fled the firſt in battle. The laws of the ancient Danes, according to Saxo, excluded them from ſociety and declared them infamous. Among the Germans this was ſometimes carried ſo far as to ſuffocate cowards in mud; after which, they covered them over with hurdles: to ſhew, ſays Tacitus, that though the puniſhment of crimes ſhould be public, there are certain degrees of cowardice and infamy which ought to be buried in eternal ſilence. The moſt flattering diſtinctions were reſerved for ſuch as had performed ſome ſignal exploit; and the laws themſelves diſtributed men into different ranks according to their different degrees of courage.

Religion, by annexing eternal happineſs to the military virtues, had given the laſt degree of activity to the ardour and propenſity theſe people had for war. Their contempt of death was proverbial, and characteriſed the chief warrior and the private ſoldier. To die with his arms in his hand was the vow of every free man, and the pleaſing idea they had of this kind of death naturally led them to dread ſuch as proceeded from diſeaſe and old age. Among theſe people none were found who were guilty of cowardice, and the bare ſuſpicion of that vice was always attended with univerſal contempt. A man who had loſt his buckler, or who had received a wound behind, durſt never more appear in public. In order to acquire glory, the ancient Scandinavians employed various means ſuited to the groſſneſs and rudeneſs of the times. One method which they practiſed with this view, was that of burying their heroes under little hills, which they raiſed in the middle of ſome plain, and of giving to theſe hillocks, and ſometimes to the plains themſelves, the names of the perſon who was there interred. (See BARROW.) They alſo availed themſelves of the art of poetry to immortalize their kings or great captains. See SCALD.

A people who nouriſhed ſo ſtrong a paſſion for war as the Scandinavians would ſeek occaſions for it: and ſo determined and prepared were they for acts of hoſtility, that they were accuſtomed every ſpring to hold a general aſſembly, at which every free man appeared completely armed, and ready to go upon any expedition. When they had determined on war, and ſettled the plan of the campaign, they immediately began their march, furniſhed each of them with a proper quantity of proviſions; and almoſt every grown man in the country made haſte to join the army thus tumultuouſly aſſembled. We are not to wonder after this, that there ſhould iſſue from the North ſwarms of ſoldiers, as formidable for their numbers as their valour: and we ought not haſtily to conclude from hence, that Scandinavia formerly contained more people than it does at preſent. We have had many reports of the incredible multitudes of men, which that country is ſaid to have poured forth: but on the other hand, who does not know how much nations and hiſtorians have been, in all ages, inclined to exaggeration in this reſpect; ſome being deſirous to enhance the power of their country, and others, when it has been conquered, being willing to ſave its credit by making it yield only to ſuperior numbers? But the greateſt part have been guilty of enlargement from no other motive than a blind love of the marvellous, authoriſed by the difficulty of pronouncing with certainty on a ſubject, in which men often commit great miſtakes even after long reſearches. Beſides this, it is very probable that many particular circumſtances of thoſe famous expeditions made by the Scandinavians, have contributed to countenance that name of *Vagina gentium,* which an hiſtorian (Jornandes) gives their country. For when theſe emigrations were made by ſea, the promptitude and celerity with which they could carry their ravages from one coaſt to another, might eaſily multiply armies in the eyes of the people they attacked, and who heard many different irruptions ſpoken of almoſt at the ſame time. If, on the contrary, they iſſued forth by land, they found every where on their march nations as greedy of fame and plunder as themſelves, who joining with them, afterwards paſſed for people of the ſame original with the firſt ſwarm which put itſelf in motion. It ſhould alſo be conſidered, that theſe emigrations did not all of them take place at the ſame time; and that after a nation was thus exhauſted, it probably remained inactive until it had been able to recruit its numbers. The vaſt extent of Scandinavia being in thoſe times divided among many different people who were little known, and only deſcribed by ſome one general name, as that of Goths, for inſtance, or Normans (that is Northern men), it could not exactly be aſcertained from what country each troop originally came, and ſtill leſs to what degree of depopulation each country was reduced after loſing ſo great a quantity of its inhabitants. But what, in Mallet's opinion, beſt accounts for thoſe numerous and frequent inundations of northern people, is that we have reaſon to believe, entire nations often engaged in enterpriſes of this ſort: even the women and children ſometimes marched in the rear of the armies, when a people, either by inconſtancy, by indigence, or the attraction of a milder climate, reſolved to change their place of abode. Projects of this kind, it is true, appear very ſtrange to us at preſent; but it is no leſs true, that our anceſtors often engaged in them.

From the obſervations already made, and other circumſtances that might be adduced, we may ſafely conclude, that as all were ſoldiers among the ancient Scandinavians, they could eaſily fill all Europe with the noiſe of their arms, and ravage for a long time different parts of it, although the ſum total of the inhabitants ſhould have been much leſs than it is at preſent. If it was otherwiſe, we muſt acknowledge, that this extreme population can be very ill reconciled, either with what hiſtory informs us of the manners, cuſtoms, and principles of the ancient Scandinavians, or with the ſoundeſt notions of policy with reſpect to what makes the true proſperity of a people. For we cannot allow them ſuch a ſuperiority over us in the number of inhabitants, without granting them at the ſame time a proportionable excellence in their cuſtoms, manners, civil regulations, and conſtitution of government, as ſo many efficacious cauſes of the good or bad ſtate of all ſocieties, and conſequently of their greater or leſs degree of population. But who can perſuade himſelf, that thoſe ſavage times when men ſowed and reaped but little, when they had no other choice but that of the deſtructive profeſſion of arms, or of a drowſy indolence no leſs deſtructive; when every petty nation was torn to pieces either by private revenge and factions within, or by war with their neighbours from without; when they had no other ſubſiſtence but rapine, and no other ramparts but wide frontiers laid waſte; who can believe ſuch a ſtate as this to be more favourable to the propagation of the human ſpecies, than that wherein men's goods and perſons are in full ſecurity; wherein the fields are covered with labourers, and their cities, rich and numerous, flouriſh in tranquillity; wherein the people are left to breathe during long intervals of peace, and there is never more than a ſmall part of the inhabitants to whom war is deſtructive: and laſtly, wherein commerce, manufactures, and the arts offer ſo many reſources, and ſecond ſo well that natural propenſity to increaſe and multiply, which nothing but the fear of indigence can check and reſtrain?

As to the tactics of the Northern nations we may obſerve, that it appears to have been their cuſtom to diſpoſe an army in the form of a triangle or pyramid, the point of which was directed againſt the centre of the enemy's army. This body was only compoſed of infantry; the cavalry being generally upon a very inconſiderable footing in the North, whether becauſe the country is ſo divided there by mountains and arms of the ſea, or becauſe their principal forces were reſerved for the marine. They had only ſome ſoldiers who ſerved both on foot and horſeback, like our dragoons at preſent, and who were commonly placed in the flanks of their armies. When they were going to join battle, they raiſed great ſhouts, they claſhed their arms together, they invoked with a great noiſe the name of Odin, and ſometimes ſung hymns in his praiſe. They made an intrenchment with their baggage round the camp, where the women and children remained during the engagement. The conquered in vain fled there for refuge if they happened to be routed. Moſt commonly the women only waited their coming back to cut them in pieces; and if they could not oblige them to return to battle, they choſe to bury themſelves and their children in one common carnage with their huſbands, rather than fall into the hands of a mercileſs conqueror. Such were the dreadful effects of that inhumanity with which war was then carried on. An act of rigour occaſioned an act of cruelty, and this again produced a degree of barbarity ſtill greater. The chains and puniſhments which were reſerved for the vanquiſhed, only ſerved to render the victory the more bloody, and to make it coſt the dearer to thoſe who purchaſed the honour of deſtroying their fellow-creatures without neceſſity.

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The caſque or helmet was known to the Scandinavians from the moſt early ages. The private ſoldiers had their helmets frequently of leather: thoſe of the officers were of iron, and, if their rank or wealth permitted, of gilded braſs. The coat of mail, the breaſt-plate and back-piece, the armour for the thighs, and other leſs eſſential pieces, were only for ſuch as were able to procure them. Thus, although the invention of all theſe was certainly owing to the Scythians and firſt inhabitants of Europe, few of their deſcendants were for many ages able to obtain them: a ſtriking proof of their indifference, or rather barbarous contempt for all the arts, ſince they cultivated ſo ill even that which was ſo neceſſary to them in battle.

They did not carry to a much greater degree of perfection the art of fortifying or attacking places of defence. Their fortreſſes were only rude caſtles ſituate on the ſummits of rocks, and rendered inacceſſible by thick mis-ſhapen walls. As theſe walls ran winding round the caſtles, they often called them by a name which ſignified ſerpents or dragons, and in theſe they commonly ſecured the women and young maids of diſtinction, who were ſeldom ſafe at a time when ſo many bold warriors were rambling up and down in ſearch of adventures.

How formidable ſoever the ancient Scandinavians were by land to moſt of the inhabitants of Europe, it muſt yet be allowed that their maritime expeditions occaſioned ſtill more deſtructive ravages, and greater terror. We cannot read the hiſtory of the eighth, the ninth, and tenth centuries, without obſerving with ſurpriſe, the ſea covered with their veſſels, and from one end of Europe to the other, the coaſts of thoſe countries, now the moſt powerful, a prey to their depredations. During the ſpace of two hundred years, they almoſt inceſſantly ravaged England, and frequently ſubdued it. They often invaded Scotland and Ireland, and made incurſions on the coaſts of Livonia, Courland, and Pomerania. Already feared, before the time of Charlemagne, they became ſtill more terrible as ſoon as this great monarch's eyes were cloſed. He is known to have ſhed tears on hearing that theſe barbarians had, on ſome occaſion, defied his name, and all the precautions he had taken to oppoſe them. He foreſaw what his people would ſuffer from their courage under his feeble ſucceſſors. And never was preſage better grounded. They ſoon ſpread, like a devouring flame, over Lower Saxony, Frieſland, Holland, Flanders and the banks of the Rhine as far as Mentz. They penetrated into the heart of France, having long before ravaged the coaſts; from various parts they found their way up the Somme, the Seine, the Loire, the Garonne, and the Rhone. Within the ſpace of thirty years, they frequently pillaged and burnt Paris, Amiens, Orleans, Poitiers, Bourdeaux, Toulouſe, Saintes, Angoulême, Nantes, and Tours. They ſettled themſelves in Camargue, at the mouth of the Rhone, from whence they waſted Provence and Dauphiny as far as Valence. In ſhort, they ruined France, levied immenſe tribute on its monarchs, burnt the palace of Charlemagne at Aix-la-Chapelle, and, in concluſion, cauſed one of the fineſt provinces of the kingdom to be ceded to them. They often carried their arms into Spain, and even made themſelves dreaded in Italy and Greece. In fine, they no leſs infeſted the North than the South with their incurſions, ſpreading every where deſolation and terror: ſometimes as furiouſly bent on their own mutual deſtruction, as on the ruin of other nations; ſometimes, animated by a more pacific ſpirit, they tranſported colonies to unknown or uninhabited countries, as if they were willing to repair in one place the horrid deſtruction of the human kind occaſioned by their furious ravages in others.

If we reflect on the interior ſtate of Scandinavia, during the time that its inhabitants were ſo unfortunately famous, we ſhall ſoon ſee the cauſe of that amazing exterior power which they poſſeſſed. We have before obſerved, that they neglected agriculture, which, among a thouſand other good effects, extinguiſhes in a riſing people the reliſh for ſavage life, and inſpires them with the love of peace and juſtice, without which the cultivation of their lands is uſeleſs. Their flocks being almoſt their only ſubſiſtence, they were neither obliged to a conſtant abode on the ſame ſpot, nor to wait for the time of harveſt, and conſequently ſuch a people, though in fact but few, were able, on ſhort notice, to levy numerous armies. Moſt of them brought up in a maritime country, and inured to the ſea from their childhood, had no fear of the dangers, or rather knew not that there were dangers of any kind attending ſuch a life. What a boundleſs field for conqueſts was here opened by the ſole advantage of navigation! What a free ſcope was here afforded a warlike people to ſpread univerſally the terror of their arms! The profeſſion of piracy was ſo far from appearing diſgraceful to them, that it was in their eyes the certain road to honours and to fortune: for it was wiſely contrived that the word *honour*, to which ſo many different ideas are annexed, was among them ſolely confined to a diſregard of dangers. Hence it is, that in the ancient chronicles, more than one hero boaſts of being the moſt renowned pirate in the North; and that often the ſons of the great lords and kings made cruiſing voyages in their youth, in order to render themſelves illuſtrious, and to become one day more worthy of command.

As ſoon as a prince had attained his eighteenth or twentieth year, he commonly requeſted of his father a ſmall fleet completely fitted out, in order to achieve with his followers ſome adventure that might be productive of glory and ſpoil. The father applauded ſuch an inclination in his ſon, as indicating a riſing courage and heroic mind. He gave him ſhips, the commander and crew of which mutually engaged not to return, unleſs adorned with laurels, and loaded with plunder. That nation became the firſt object of their reſentment, from which they had received any injury; and frequently their principal aim was to make repriſals on ſome province which ſerved for the retreat of other corſairs. If the fleets of two different nations met by chance in their voyage, this was alſo an occaſion of fighting which they never neglected.

The vanquiſhed party was commonly put to death, though ſometimes the conquerors were contented to make them ſlaves; and often, by a ſingular ſtrain of generoſity, which the love of glory was able to produce in minds in other reſpects ſo ferocious, if the enemy that fell in their way had fewer ſhips than themſelves, they ſet aſide part of their own veſſels, ſo that, engaging upon equal terms, the victory might not be attributed to ſuperiority of numbers.

While the attention of theſe people was engroſſed by their paſſion for arms, and the pleaſures of the table, we may conclude that love held no violent dominion over them. It is beſides well known, that the inhabitants of the North are not of very quick ſenſibility. The ideas and modes of thinking of the Scandinavians were in this reſpect very different from thoſe of the Aſiatics and more ſouthern nations; who by a contraſt as remarkable as it is common, have ever felt for the female ſex the warm paſſion of love, devoid of any real eſteem. Being at the ſame time tyrants and ſlaves; laying aſide their own reaſon, and requiring none in the object, they have ever made a quick tranſition from adoration to contempt, and from ſentiments of the moſt extravagant and violent love, to thoſe of the moſt cruel jealouſy, or of an indifference ſtill more inſulting. We find the reverſe of all this among the northern nations, who did not ſo much conſider the other ſex as made for their pleaſure, as to be their equals and companions, whoſe eſteem, as valuable as their other favours, could only be obtained by conſtant attentions, by generous ſervices, and by a proper exertion of virtue and courage.

The matrimonial ceremonies were very ſimple, and chiefly conſiſted in feaſting. The bridegroom having obtained the maiden's conſent, together with that of her parents and guardians, appointed the day; and having aſſembled his own relations and friends, ſent ſome of them to receive in his name the bride and her portion from her father. The friends were anſwerable for the charge that was committed to them, and if they abuſed their truſt, the law amerced them in a ſum treble to what was paid for murder. The father or guardian of the young woman attended her alſo to the huſband's houſe, and there gave her into his hands. After this, the new-married pair ſat down to table with their gueſts, who drank to their healths along with thoſe of the gods and heroes. The bride's friends then took her up and bore her on their ſhoulders, which was a mark of eſteem among the Goths; her father afterwards led her to the nuptial bed, a great number of lights being carried before her; a cuſtom known to the Greeks and Romans, and ſtill in uſe in ſome parts of the North. The marriage being conſummated, the huſband made his wife ſeveral preſents, ſuch as a pair of oxen for the plough, an harneſſed horſe, a buckler, together with a lance and a ſword.

A numerous offspring was commonly produced from theſe marriages; but neither the rich nor the poor ſcrupled to expoſe ſuch of their children as they did not chuſe to bring up.

The Scandinavians held all the arts in contempt. For other particulars we muſt refer to the articles Goths, Odin, Runic, Saxons, Scalds, Scythians, and Tartars, and particularly to Mallet's Northern Antiquities, vol. i. paſſim.

SCANDIX, in *Botany*, an ancient Latin name, σκανδιξ of the Greeks, derived by De Theis from σκεω, *to prick*, and alluding, as he ſays, to the needle-like points of the ſeeds, which are very remarkable in the original σκανδιξ of Dioſcorides, our *S. Pecten Veneris.* — Linn. Gen. 142. Schreb. 192. Willd. Sp. Pl. v. 1. 1449. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 323. Prodr. Fl. Græc. Sibth. v. 1. 196. Ait. Hort. Kew. v. 2. 151. Juſſ. 220. Gærtn. t. 85. (Chærophyllum; Lamarck Illuſtr. t. 201. f. 6. Myrrhis; Gærtn. t. 23.) — Claſs and order, *Pentandria Digynia.* Nat. Ord. *Umbelliferæ.*

Gen. Ch. *General umbel* long, of few rays; *partial* of more. *General* involucrum none; *partial* of five leaves, the length of the partial umbel. *Perianth* obſolete. *Cor. Univerſal* irregular, radiant; flowers of the diſk abortive; *partial* of five, inflexed-emarginate, petals, of which the innermoſt are ſmalleſt, the outer one largeſt. *Stam.* Filaments five, capillary; anthers roundiſh. *Piſt.* Germen oblong, inferior; ſtyles two, awl-ſhaped, the length of the ſmalleſt petal, diſtant, permanent; ſtigmas of the radiating flowers obtuſe. *Peric.* Fruit very long, awl-ſhaped, ſeparable into two parts. *Seeds* two, awl-ſhaped, convex and furrowed on the outer ſide, flat on the inner.

Obſ. The flowers of the diſk are, in ſome ſpecies at leaſt, abortive. In *Pecten Veneris* the ſeeds are thread-ſhaped, the kernel being lodged at their baſe. In *Cerefolium* of Rivinus they are ovate-awl-ſhaped, ſtriated; the involucrum is green and permanent; the flowers all perfect. In *S. odorata* the ſeeds are angular; the involucrum caducous. Reichard obſerves that the partial involucrum is liable to vary in the number of its leaves.

Eſſ. Ch. Flowers radiant. Petals emarginate. Fruit awl-ſhaped. Flowers of the diſk often male.

1. S. *odorata.* Sweet Cicely, or Great Chervil. Linn. Sp. Pl. 368. Willd. n. 1. Ait. n. 1. Fl. Brit. n. 1. Engl. Bot. t. 697. Jacq. Auſtr. append. t. 37. (Cerefolium magnum ſive Myrrhis; Ger. Em. 1039. Odorata; Riv. Pentap. Irr. t. 57.) — Seeds furrowed, with ſharp angles. — Native of mountainous umbrageous places, in the north of Britain, as well as in France, Germany, Switzerland, and Aſia Minor, flowering in the early part of ſummer. The *root* is perennial, long, tapering, white, aromatic. Whole *herb* fragrant, reſembling hawthorn-bloſſoms, but when bruiſed more like fennel. *Stem* an inch and a half to three feet high, ſtriated, leafy. *Leaves* large, triply pinnate, cut, ſerrated, rather hairy, light green. *Flowers* copious, ſmall, pure white, in large umbels; the middle ones male only. *Seeds* large, an inch long, not beaked, but crowned with the divaricated *ſtyles;* the angles peculiarly ſharp; the ſurface poliſhed. In a green ſtate theſe *ſeeds* are ſweet and agreeably aromatic.

2. S. *latifolia.* Broad-leaved Chervil. Sm. Prodr. Fl. Græc. Sibth. n. 685. Fl. Græc. t. 284, unpubliſhed. (Cachrys cretica; Lamarck Dict. v. 1. 259. Willd. Sp. Pl. v. 1. 1410. C. cretica, angelicæ folio, aſphodeli radice; Tourn. Cor. 23.)—Seeds elliptical, hiſpid. Leaves twice ternate, ovate, cut; their ſheaths, as well as the ſtem, ſmooth.—Native of Crete, Cyprus, and ſome parts of Greece, apparently in marſhy places. The *leaves* conſiſt of larger, leſs finely cut, *leaflets* than the foregoing, and are nearly ſmooth. *Flowers* ſmall, white; the middle ones male. *Fruit* about half an inch long, very rough, not beaked.

3. S. *Pecten Veneris.* Needle Chervil. Venus's Comb, or Shepherd's Needle. Linn. Sp. Pl. 368. Willd. n. 2. Ait. n. 2. Fl. Brit. n. 2. Engl. Bot. t. 1397. Curt. Lond. faſc. 5. t. 21. Mart. Ruſt. t. 38. Fl. Dan. t. 844. Jacq. Auſtr. t. 263. (Scandix; Riv. Pent. Irr. t. 38. Pecten Veneris, ſive Scandix; Ger. Em. 1040.)—Seeds roughiſh, with very long beaks. Leaflets in many linear ſegments.—Common in cultivated fields, throughout Europe, flowering early in ſummer. *Root* annual, ſmall. *Stems* weak and ſpreading. *Leaves* ſmoothiſh, thrice pinnate, with narrow alternate ſegments. *General umbel* of only two or three rays; *Partial ones* of more, with a notched *involucrum.* *Flowers* pure white. *Seeds* remarkable for their very long beaks. This plant is not pleaſantly aromatic, yet the Greeks appear to have uſed it as an ordinary kind of pot-herb.

4. S. *chilenſis.* Chili Chervil. Willd. n. 3.—"Seeds with a very long beak. Leaflets ovato-lanceolate, undivided."—Obſerved by Molina in Chili. The above character beſpeaks a very diſtinct ſpecies.

5. S. *Cerefolium.* Garden Chervil. Linn. Sp. Pl. 368.

Willd. n. 4. Ait. n. 3. Engl. Bot. t. 1268. Jacq. Auſtr. t. 390. (Cerefolium vulgare ſativum; Ger. Em. 1038. Cerefolium; Riv. Pent. Irr. t. 43.)—Seeds poliſhed, ovate, awl-ſhaped. Umbels ſeſſile, lateral.—Native of cultivated ground in the ſouth of Europe. This is much uſed for ſoups and ſallads in France, and ſometimes in other parts of Europe. Hence it has probably eſcaped from kitchen gardens, and occurs now and then apparently wild in England, flowering in June. It is a pale-green, annual, ſweet-ſcented herb, with lateral *umbels* of ſmall white *flowers*, having ſharp involucral leaves. *Fruit* very ſmooth, ſcarcely beaked.

6. S. *auſtralis*. Radiated Chervil. Linn. Sp. Pl. 369. Willd. n. 6. Ait. n. 5. Sm. Fl. Græc. Sibth. t. 285, unpubliſhed. (Aniſomarathrum; Column. Ecphr. v. 1. 89. t. 90.)—Seeds awl-ſhaped, with a very long beak, hiſpid. Flowers ſtrongly radiant. Stem ſmooth and even.—Native of Italy, Greece, Aſia Minor, Cyprus, and Crete. An annual *herb*, much like *S. Pecten Veneris*, but the *ſtem* is ſmooth and poliſhed; the beak of the *ſeeds* rather rougher and more linear; and the *flowers* more remarkably radiant. The *involucral leaves* are ovate, concave, ſimply cloven at the end.

7. S. *Anthriſcus*. Rough Chervil. Linn. Sp. Pl. 368. Willd. n. 5. Ait. n. 4. Fl. Brit. n. 3. Engl. Bot. t. 818. Curt. Lond. faſc. 1. t. 19. Mart. Ruſt. t. 75. Jacq. Auſtr. t. 154. (Caucalis ſcandicina; Wiggers Holſat. 23. Fl. Dan. t. 863. C. folio cerefolii; Riv. Pent. Irr. t. 35.)—Seeds ovate, hiſpid. Corolla nearly uniform. Stem ſmooth and even.—Common in waſte ground, and the borders of fields, throughout Europe, flowering in the ſpring. *Root* annual. *Stem* two or three feet high, with poliſhed tumid joints. *Leaves* bright green, triply pinnate, hairy, with ovate lobed *leaflets*. *Umbels* lateral and terminal, white. *Seeds* rough with aſcending prickles, their beaks very ſhort, and ſmooth.

8. S. *nodoſa*. Knotty Sicilian Chervil. Linn. Sp. Pl. 369. Mant. 356. Willd. n. 7. Ait. n. 6. Jacq. Hort. Vind. v. 3. 16. t. 25. (Cerefolium annuum nodoſum, ſemine aſpero oblongo; Moriſ. ſect. 9. t. 10. f. 4.)—Seeds nearly cylindrical, hiſpid. Stem clothed with deflexed briſtles, and ſwelled below its joints.—Native of Sicily. Said to have been known in the Britiſh botanic gardens about the middle of the ſeventeenth century. The *root* is annual, not perennial. *Stem* erect, about a foot and half high, leafy, branched, hollow, glaucous, ſtriated, hiſpid; tumid juſt below each ſubdiviſion. *Leaves* bipinnate and cut, hiſpid; the briſtles on their footſtalks pointing backwards. *Umbel* generally of three rough principal rays; partial *umbels* of ſeveral ſhort ones. *Flowers* white, all regular and perfect. *General involucrum* moſtly wanting, rarely of one leaf; *partial* of ſeveral awl-ſhaped leaves. *Seeds* rough with aſcending briſtles; their beaks very ſhort.

9. S. *trichoſperma*. Hairy-ſeeded Chervil. Linn. Mant. 57. Willd. n. 8.—Seeds clothed with copious hairs twice their own length.—Native of Egypt. Sent to Linnæus, with a drawing, by his friend Anthony Turra, of Vicenza. The *root* is annual, ſlender and tapering. *Stem* branched from the baſe, a ſpan high, ſlender, pale, roughiſh, leafy. *Leaves* bipinnate, pinnatifid, with narrow ſegments; paler and hairy beneath. *Briſtles* of the footſtalks, as well as of the ſtem, ſmall, deflexed. Rays of the *general umbel* three or four, unequal; of the *partial* ones ten or twelve, ſhort, ſlender. *Partial involucrum* of ſeven awl-ſhaped leaves. *Flowers* ſmall, regular, uniform, white or fleſh-coloured, all perfect. *Seeds* ſhort, oblong, inveſted with long, pale, ſpreading hairs.

10. S. *grandiflora*. Large-flowered Chervil. Linn. Sp. Pl. 369. Willd. n. 10. (S. orientalis, flore maximo; Tourn. Cor. 23.)—"Seeds ſhorter than the villous flower-ſtalks."—Gathered by Tournefort in the Levant. We have ſeen no ſpecimen.

11. S. *procumbens*. Procumbent Chervil. Linn. Sp. Pl. 369. Willd. n. 1. Ait. n. 7. (Chærophyllum procumbens; Purſh v. 1. 195. Cerefolium virginianum minus, fumariæ foliis; Moriſ. ſect. 9. t. 11. f. ult.)—"Seeds ovate-awl-ſhaped, poliſhed. Leaves twice compound."—On ſhady wet hills, at the foot of mountains, in Virginia. Annual, flowering in May. A ſmall and ſcarce plant, obſerved near Hager's town, Maryland. *Purſh.* That author follows Perſoon, in referring the preſent ſpecies to *Chærophyllum*. By Moriſon's plate, our only guide, the *leaves* much reſemble thoſe of *Scandix trichoſperma*. The general and partial *umbels*, at leaſt when in ſeed, are each of three rays. The partial *involucrum* has certainly the aſpect of a *Chærophyllum*.

We exclude from our liſt of ſpecies *S. infeſta*, Linn. Syſt. Nat. ed. 12. v. 3. 732. Willd. n. 9; which is *Caucalis helvetica* of Jacq. Hort. Vind. v. 3. 12. t. 16, and *C. infeſta* of Curtis, Fl. Lond. faſc. 6. t. 23; as well as of Fl. Brit. 299, and Engl. Bot. t. 1314. See Caucalis, n. 10.

There is great ambiguity between the genera of *Scandix* and *Chærophyllum*, the flowers of the former not being always evidently radiant or irregular, nor the fruit more awl-ſhaped than in many ſpecies of the latter.

Scandix, in *Gardening*, contains plants of the hardy, herbaceous, annual and perennial kinds, of which the ſpecies cultivated is the garden chervil (S. cerefolium).

This is a plant that was formerly much more cultivated than at preſent. It is uſed as a culinary plant in winter and ſpring, in ſoups and ſallads, and is a native of the Levant.

Method of Culture.—This plant may be raiſed from ſeed by ſowing at different times in the early ſpring, as from February to March, and alſo in Auguſt for winter uſe, in beds of common earth, raking the ſeed in: it afterwards only requires to be kept clean from weeds.

The leaves are uſed in their young ſtate while green and tender.

SCANDULÆ, in *Ancient Houſe-building*, ſhingles, or flat pieces of wood, uſed by the Romans inſtead of tiles to cover houſes. This, according to Cornelius Nepos, was the only covering uſed in Rome till the war with Pyrrhus, or 470th year of the city.

SCANDULARII, among the Romans, mechanics who prepared the ſcandulæ uſed in covering houſes, who were exempted from all public ſervices.

SCANELLO, Ital. a bank; in *Muſic*, a bridge of a violin, &c. the ſame as *ponticello*.

SCANGERO, or Icus, in *Geography*, an iſland in the Grecian Archipelago. N. lat. 39° 20′. E. long. 24° 15′.

SCANIA. See Schonen.

SCANNING, Scansio, formed of *ſcandere, to climb*, in *Poetry*, the meaſuring of a verſe, to ſee what number of feet and ſyllables it contains, and whether or no the quantities, that is, the long and ſhort ſyllables, be duly obſerved.

The term is chiefly uſed with regard to Greek and Latin verſes; the quantities not being well ſettled and obſerved in the verſes of the modern languages.

Hexameters are *ſcanned* one way, iambics another, ſapphics another.

SCANNO, in *Geography*, a town of Naples, in Abruzzo Citra; 9 miles S.S.W. of Sulmona.

SCANSOR, in *Ichthyology*, a name given by Geſner to the fiſh called by the generality of writers *lupus piſcis*.

SCANTING, in *Sea Language*, the variation of the wind, by which it becomes unfavourable to a ſhip's courſe, after having been *fair* or *large*. It is diſtinguiſhed from a foul wind, as in the former a ſhip is ſtill enabled to ſail on her courſe, although her progreſs is conſiderably retarded; but in the latter ſhe is obliged to alter from the line of her courſe, as explained in the article TACKING.

SCANTLING, a meaſure, ſize, or ſtandard, by which the dimenſions, &c. of things are to be determined.

The word is formed from the French, *eſchantillon*, a pattern or ſpecimen.

The term *ſcantling* is particularly applied to the dimenſions of any piece of timber, with regard to its breadth and thickneſs. Likewiſe all quartering under five inches ſquare is termed ſcantling; all above that ſize is called *carling*.

SCAPE-GOAT, in the *Jewiſh Antiquities*, the goat which was ſet at liberty on the day of ſolemn expiation. For the ceremonies on this occaſion, ſee Levit. xvi. 5, 6, &c.

Some ſay that a piece of ſcarlet cloth, in form of a tongue was tied on the forehead of the ſcape-goat. Hofm. Lex. univ. in voc. Lingua.

Many have been the diſputes among the interpreters concerning the meaning of the word ſcape-goat, or rather of עזאזל, *Azazel*, for which ſcape-goat is put in our verſion of the Bible.

Spencer, who is followed by Witſius, Cocceius, Altingius, Meyer, and others, is of opinion that *Azazel* is a proper name, ſignifying the devil, or evil dæmon, who was worſhipped by the heathens, particularly by the Egyptians, under the form of a goat. (See his reaſons in his book De Leg. Hebr. Ritual. Diſſert. viii.) Among other things he obſerves, that the ancient Jews uſed to ſubſtitute the name *Samael* for *Azazel*, and many of them have ventured to affirm, that at the feaſt of expiation they were obliged to offer a gift to *Samael* to obtain his favour. Thus alſo the goat ſent into the wilderneſs to Azazel, was underſtood to be a gift or oblation. Some Chriſtians have been of the ſame opinion. But Spencer thinks that the genuine reaſons of the ceremony were, 1. That the goat loaded with the ſins of the people, and ſent to Azazel, might be a ſymbolical repreſentation of the miſerable condition of ſinners. 2. God ſent the goat thus loaded to the evil dæmons, to ſhew that they were impure, thereby to deter the people from any converſation or familiarity with them. 3. That the goat ſent to Azazel ſufficiently expiating all evils, the Iſraelites might the more willingly abſtain from the expiatory ſacrifices of the Gentiles.

However, though it be allowed with Spencer, that the goat, which, he ſays, was ſent to *Azazel*, or *the devil*, was not to be conſidered as a proper ſacrifice to him, but merely as being delivered into his power, and given up to his diſpoſal; yet this ſeems to have been a rite, which might ſo eaſily have been interpreted into an encouragement of dæmon worſhip, that we can ſcarce admit it to have been a divine inſtitution.

Le Clerc is of opinion, that *Azazel* was the name of a place, either a mountain or cliff, to which the goat was led, and from thence, as the rabbies ſay, it was caſt down and killed; but no ſuch place has been ſpecified, except a mountain near Mount Sinai, mentioned by an anonymous writer of very little credit, which muſt have been too far diſtant for the ſcape-goat to have been conducted thither from Jeruſalem.

The moſt common opinion is, that *Azazel* is a name given to the goat itſelf, on account of his being let go, as being derived from עז, *gnez* or *az*, *goat*, and אזל, *azel*, *he hath gone away*. Thus it was underſtood by our tranſlators, who render it ſcape-goat; the Septuagint likewiſe render it αποπομπαιος, and the Vulgate *emiſſarius*. Thoſe who adopt this opinion obſerve, that as the ſacrifice-goat was typical of the expiation of ſin by the ſacrifice of Chriſt; the ſcape-goat, which was to have the ſins of the people confeſſed over him, and as it were put upon him, and then to be ſent away alive into ſome deſart place, where they would ſee him no more, was intended to ſignify the effect of the expiation, namely, the removing of guilt, inſomuch that it ſhould never more be charged on the once pardoned ſinner.

It has been alleged, that the ceremony of the impoſition of hands upon the head of the victim, has been uſually conſidered, in the caſe of piacular ſacrifices, as a ſymbolical tranſlation of the ſins of the offender upon the head of the ſacrifice; and as a mode of deprecating the evil due to his tranſgreſſions. Thus it is ſaid to be repreſented by Abarbinel, in the introduction to his Commentary upon Leviticus; and this, it is ſaid, the ceremony of the ſcape-goat, in Lev. xvi. 21, ſeems directly to aſſert. This interpretation of the ceremony of the impoſition of hands, in the Moſaic ſacrifice, is however ſtrongly conteſted by ſeveral writers, particularly by Sykes ("Eſſ. on Sacrifices"), and the author of the "Scripture Account of Sacrifices;" who maintain, that this ceremony was not confined to piacular ſacrifices, but was alſo uſed in thoſe which were euchariſtical, on which commemoration was made, not of ſins, but of mercies. It was not, therefore, always accompanied with confeſſion of ſins, but with praiſe or thankſgiving, or ſuch concomitant as ſuited the nature and intention of the piacular ſacrifice. On the other hand it is argued, that the Jewiſh doctors, in all caſes, combine confeſſion of ſins with impoſition of hands. (See Outram de Sacr. lib. i. c. 15. §. 8.) That this impoſition of hands, joined to the confeſſion of ſins, was intended ſymbolically to transfer the ſins of the offerer on the head of the victim; and conſequently to point it out as the ſubſtitute for the offender, and as the accepted medium of expiation, appears, ſay the advocates of this opinion, from the ceremony, as preſented on the day of expiation. (See Lev. xvi. 21, 22.) The ſins of the people being thus transferred to the animal, it is afterwards repreſented to be polluted, or to pollute the perſon who carried it away (Lev. xvi. 26.), and by the entire ceremony expiation is made for the ſins of the people. But Dr. Sykes ſays (ubi ſupra) that the goat was ſo polluted, that it was not ſacrificed, but ſent away; it was not then to transfer ſins upon the ſacrifice, that hands were laid upon the head of the victim, or men would not offer unto God what they knew to be polluted. In this notion of the pollution of the ſcape-goat rendering it unfit to be offered in ſacrifice, Mr. H. Taylor (Ben Mord. pp. 827, 828.) concurs with Dr. Sykes. For the further diſcuſſion of this ſubject, ſee Magee on Atonement, vol. i. and Jenn. Jew. Antiq. vol. ii. p. 268, &c.

SCAPEMENT, in *Horology*. See ESCAPEMENT.

SCAPHA, in *Anatomy*, one of the ſmall hollows of the external ear. See EAR.

SCAPHA, in *Surgery*, ſometimes denotes a double-headed roller.

SCAPHEPHORI, Σκαφηφοροι, among the *Athenians*, an appellation given to the ſtrangers reſiding among them, becauſe they were obliged, at the feſtival Panathenæ, to carry little ſhips, called *ſcaphæ*, σκαφαι, which were a ſign of their foreign extraction.

SCAPHISM, SCAPHISMUS, formed of σκαφος, *digging*, of σκαπτω, *I dig*, *hollow*, in *Antiquity*, a kind of torture or puniſhment formerly in uſe among the Perſians. It conſiſted in locking the criminal cloſe up within the trunk of a tree bored to the dimenſions of his body, only with five holes for his head, arms, and legs to come through. In this ſtate he was expoſed to the ſun, and the parts thus appearing were anointed with honey and milk, to invite the waſps and flies.

To increaſe the torment, they forced the criminal alſo to eat abundantly, till his excrements, cloſe pent up in the wood, rotted his body. Some authors obſerve, that perſons ordinarily lived forty days in this condition.

The invention is aſcribed to Pariſatis, queen of Perſia, and mother of Artaxerxes Mnemon, and the young Cyrus. It is added, ſhe firſt ordered it to be practiſed on the perſon who brought the tidings of the death of Cyrus.

SCAPHIUM, among the *Romans*, a cup of an oblong form, ſomewhat reſembling that of a boat, whence alſo it had its name.

Scaphium likewiſe ſignifies a kind of dial, which, beſide the hours, ſhewed alſo the ſolſtices and equinoxes.

SCAPHOIDES, in *Anatomy*, (from σκαφα, *a boat*, and ειδος, *form*,) boat-like; the name of a bone of the carpus, and of the tarſus. See Extremities.

SCAPOLITE, in *Mineralogy*, *Paranthine* of Haüy. This mineral has only been found near Arendal in Norway. Its colour is a greyiſh, greeniſh, or yellowiſh-white. It is commonly cryſtallized in ſingle or laterally aggregated needles; the form either long four-ſided or eight-ſided priſms. The cryſtals are often decompoſed; ſometimes they are tranſlucent, and have a metallic or nacry ſplendour. In the laſt ſtate they are ſufficiently hard to ſcratch glaſs, in the former ſtate they are ſoft and even friable. Before the blowpipe it intumeſces, and forms a ſhining white enamel. The cryſtals are not electric by heat, and do not gelatinize with acids. The ſpecific gravity of ſcapolite is 3.712. The primitive form of the cryſtal, according to Haüy, is a rectangular priſm, terminated by ſquare planes, which divide diſtinctly in the direction of the diagonal. Scapolite contains,

	According to Langier.	According to Simon.
Silex	45	53
Alumine	33	15
Lime	17.6	13.25
Magneſia	-	7
Oxyd of iron	1	6.5
Soda	1.5	3.5
Potaſh	0.5	

SCAPULA, John, in *Biography*, the reputed author of a Greek Lexicon, that has long been eſteemed a work of ſuperior merit, ſtudied at Lauſanne. His name is recorded in the annals of literature, ſays his biographer, neither on account of his talents, nor induſtry, but for a groſs act of diſingenuity and fraud, which he committed againſt an eminent literary character of the ſixteenth century. Being employed by Henry Stephens as the corrector to his preſs, while he was printing his "Theſaurus Linguæ Græcæ," Scapula extracted thoſe words, with their explications, &c. which he reckoned moſt uſeful, compriſed them in one volume, and publiſhed them as an original work, with his own name. See Etienne, Henry.

Scapula, in *Anatomy*, the ſhoulder-blade. See Extremities.

Scapula, in *Surgery*. For an account of the fractures to which this bone is liable, ſee Fracture.

SCAPULAR, or Scapulary, denotes part of the habit of ſeveral orders of religious, worn over the gown, as a badge of peculiar veneration for the Virgin.

The word is formed from the French, *ſcapulaire*, which ſignifies the ſame; and that from the Latin *ſcapula*, the ſhoulder-blade.

The ſcapular conſiſts of two narrow breadths, or ſlips, of cloth, covering the back and the breaſts, and hanging down to the feet of the profeſſed religious, and to the knees of the lay-brothers, &c.

There is alſo a *Friery*, or *Fraternity of the Scapular*, conſiſting of lay-brothers, who profeſs a particular devotion to the Virgin; and who, in honour of her, wear a little ſcapular, in manner of a bracelet, or otherwiſe, for repreſenting the great one. They are obliged to certain prayers, and to obſerve certain rules, in their manner of life.

SCAPULARIS, an epithet applied to arteries and nerves about the ſcapula.

SCAPULARY, a bandage for the ſhoulder.

SCAPUS, in *Architecture*, the ſuſt, or ſhaft, of a column.

Scapus, in *Botany*, is a flower-ſtalk ſpringing immediately from the root, as in the primroſe, cowſlip, ſnowdrop, daffodil, cyclamen, &c. It is deſigned for the ſupport of the parts of fructification only, and withers when they have accompliſhed their deſtination. Linnæus thought that no plant could be increaſed by its *ſcapus;* but we have raiſed plants of *Lachenalia tricolor* from bulbs formed on a flower-ſtalk laid between papers to dry. See Pedunculus.

SCAR. See Eschar.

Scar *of the Seed*, in *Botany*. See Hilum.

Scar, *Green*, in *Geography*, rocks in the German ſea, near the coaſt of Northumberland; 2 miles N. of Blythe.—*North Scar*, a rock in the ſame ſea, near the ſame coaſt; 9 miles N.N.W. from Coquet iſland.—*South Scar*, a rock half a mile S. from the North Scar.—*Noſe Scar*, a cape of Scotland, on the N. coaſt of the county of Bamff. N. lat. 57° 40′. W. long. 2° 46′.

SCARA, or Ciara, a town of South America, in the juriſdiction of Maranhoa.

SCARABÆUS, or Beetle, in *Entomology*, a genus of inſects of the order Coleoptera, of which the generic character is as follows: the antennæ are clavate; the club is lamellate: the inſects of the genus have four feelers, and the fore-ſhanks are generally toothed.

The larvæ or grubs of beetles have ſix feet: they are annulate, hairy, veſicular at the end of the abdomen, and furniſhed with a horny head. They live quietly under ground; moſt of them delight in, and feed upon, dung: the tribes of the *cetoniæ* live on decayed woods, and of the *melolonthæ* on the roots of plants: the nymphæ lie dormant under the earth. There have been about 600 ſpecies of this genus enumerated by Gmelin, which are ſeparated into four diviſions, *viz.* thoſe which have filiform feelers; thoſe whoſe feelers are capitate, and jaws bifid; thoſe which have cylindric feelers, and the club of the antennæ tunicate; and thoſe whoſe feelers are unequal, the fore ones ſub-clavate, the hind ones filiform. Of the laſt three there are but few ſpecies; the great maſs is to be found in the firſt diviſion. We ſhall not attempt to enumerate every ſpecies, but ſhall deſcribe thoſe which are moſt intereſting and deſerving of notice.

Diviſion A. *Feelers uniform.*

a. *Mandible arched.*

Species.

Hercules. Horn of the thorax incurved, very large, bifid at the end, bearded beneath, and one-toothed; the horn of the head is recurved, with ſeveral teeth above.

This is one of the moſt remarkable ſpecies; it meaſures ſometimes five or ſix inches in length; the wing-ſhells are of a ſmooth ſurface, of a blueiſh or browniſh-grey colour, ſometimes nearly black, and commonly marked with ſeveral ſmall, round, deep black ſpots, of different ſizes; the head and limbs are coal-black. From the upper part of the breaſt or thorax proceeds a horn or proceſs of enormous length, in proportion to that of the body; it is ſharp at the tip, where it curves ſlightly downwards, and is marked beneath by two or three denticulations, and furniſhed throughout its whole length with a fine, ſhort, velvet-like pile, of a browniſh-orange colour: from the front of the head proceeds alſo a ſtrong horn, about two-thirds the length of the former. This ſpecies is a native of ſeveral parts of South America, where great numbers are ſaid to be ſometimes ſeen on the tree called the mammæa, or mammee-tree, raſping off the rind of the ſlender branches by working nimbly round them with the horns, till they cauſe the juice to flow, which they are ſaid to drink to intoxication, and then fall ſenſeleſs from the tree. This fact has been doubted by naturaliſts, ſince the thoracic horn, being bearded on its lower ſurface, would be made bare by the operation. The Hercules, from the largeneſs of the ſize of all its parts, affords an admirable example of the characters of the genus. It varies, however, in ſize; and it may even be doubted, whether ſome of the ſmaller ſpecimens have not occaſionally been regarded as diſtinct ſpecies. The female is deſtitute both of the frontal and thoracic horn, but in other points ſhe reſembles the male.

Alcides. Horn of the thorax incurved, bearded beneath, and one-toothed; the horn of the head is recurved, and unarmed. This is an Indian inſect, and is not more than half the ſize of the laſt: the horn of the thorax is not bifid at the end.

Gideon. The horn of the thorax of this ſpecies is incurved, very large and ſmooth; it is bifid at the end; the horn of the head is recurved, and one-toothed above. It inhabits South America and India, as does the next.

Oromedon. Horn of the thorax ſhort, emarginate; horn of the head recurved and bifid.

Centaurus. The horn of the thorax of this is incurved; it is two-toothed at the baſe, bifid at the end: the horn of the head is recurved, and one-toothed. This is found in India and Africa.

Dispar. In the male, the horn of the thorax is ſubulate, and projecting; the horn of the head is ſubulate, ſlightly recurved; the ſcutel is heart-ſhaped. This inſect is found in many parts of ſouthern Ruſſia. It is black. The female has two erect denticles in the middle of the head before; the thorax has two elevated prominent teeth before.

Hastatus. Horn of the thorax ſhort, arched, ſpear-ſhaped, rough beneath; horn of the head recurved. It is found in divers parts of South America; it is black and the ſhells are teſtaceous; the ſhield of the head is reflected, toothed, with a large, ſharp, arched, unarmed horn; thorax punctured, with an incumbent ſhort horn in the middle, ſpear-ſhaped or three-lobed at the end; the ſhells are punctured, with a ſingle ſtripe at the ſuture.

Pan. The horn of the thorax is incurved, very thick at the baſe, bifid at the end; the horn of the head recurved, one-toothed. It inhabits South America and India: large, black. The thorax is rough at the ſides, ſmooth in the middle, very thick, ending in an incurved bifid horn.

Dædalus. Thorax arched, excavate before, with a very ſhort horn; the horn of the head is flat, impreſſed on each ſide. It inhabits India. The horn is longer than the head, and covering the whole head; it is ſtraight and broad, with an impreſſed puncture at the baſe on each ſide, one-toothed at the edge; the thorax has a tranſverſe dorſal elevated line; ſhells ſcarcely ſtriate; the legs and body beneath ferruginous; hind-thighs clavate; hind-ſhanks thick, truncate: female, thorax unarmed; horn of the head ſhorter, notched.

Actæon. Smooth; thorax two-horned; the horn of the head is one-toothed, bifid at the end; the ſhells are ſmooth. It inhabits South America. It is the largeſt of all known inſects, excepting crabs and monoculi. Its ſhells are black, or glaucous ſpotted with black.

Elephas. Downy; thorax gibbous, two-horned; the horn of the head is one-toothed, and bifid at the end. It inhabits Guinea. The body is covered with ruſty-grey hairs; the ſhells are irregularly punctured.

Boas. Thorax retuſe, excavate, two-toothed; the horn of the head is recurved, and ſimple. It inhabits Sierra Leona. The ſhield of the head is emarginate; the thorax is black, with erect ferruginous hairs; the ſhells are pitchy, with a ſingle line at the ſuture.

Coryphæus. Thorax two-horned; the body ferruginous. It is found at the Cape of Good Hope. The ſhield of the head is two-horned before, the horns are recurved and tipt with black. It has an elevated ſhort black ſpine behind; the thorax has two ſhort approximate horns tipt with black, and an obtuſe gibboſity behind; the ſhells are ſlightly ſtriate.

Orion. Brown; thorax two-horned, the horns are compreſſed; the head is three-horned; the middle one is very ſhort. It is a native of Senegal, and is ſmall. The horns of the head are elevated, thick, compreſſed, ending in two lateral, diſtant, recurved horns, with a denticle in the middle; the thorax is deeply impreſſed; the horns are ſtrong; the ſhells are ſmooth and highly poliſhed.

Atlas. Thorax three-horned, the middle one is very ſhort; the horn of the head is recurved. It inhabits America. The horn of the head is ſometimes three-toothed.

Typhon. Thorax three-horned, the middle one is notched; the horn of the thorax is recurved, one-toothed at the baſe, bifid at the end. A ſpecimen is in the Britiſh Muſeum. The ſhield of the head is two-toothed; the horn is projecting, recurved, with a ſtrong dorſal tooth at the baſe, ſmooth, black; the thorax is covered with a cinereous down; the horns are black, ſubequal, the middle one with fulvous down beneath; the ſhells are brown, and nearly ſmooth.

Vulcanus. Thorax three-horned, the lateral ones ſhorter, compreſſed, dilated near the tip; the head is unarmed; the ſhells with ſtriate punctures. It is an inhabitant of the iſland of Guadaloupe.

* **Typhœus**; Bull-comber. Thorax three-horned, the middle one leſs, lateral ones projecting, as long as the head, which is unarmed. It is found in this country, and other parts of Europe, chiefly under cow-dung, where it buries itſelf to depoſit its eggs. The head is depreſſed, villous at the ſides, narrow; knob of the antennæ greyiſh; thorax ſmooth; the horns ſometimes as long as the head, and ſometimes twice as long; in the female they are ſcarcely viſible; the ſhells are ſtriate; the ſhanks downy; the body black.

Nasicornis. Thorax with a triple prominence; horn of the head recurved; ſhells ſmooth. This is an European inſect. The larva is grey; the head, the legs, and ſpiracles rufous: the female has ſcarcely the rudiment of a horn.

Lazarus. The thorax of this inſect has three tubercles;

cles; the horn of the head is ſhort, emarginate. It inhabits North America, and is very ſmall. The ſhield of the head is emarginate; the thorax is brown, caniculate, the middle tubercle tranſverſe; the ſhells are ſtriate and rufous.

Quadridens. Thorax four-toothed; horn of the head elevated, ſimple; body ferruginous. It inhabits India; is ſmall, gibbous, and ferruginous. In the male the ſhield has a ſhort erect horn; in the female it is two-toothed; the ſhells ſtriate.

* **Mobilicornis.** Thorax four-toothed; horn of the head recurved and moveable. It is found in this country and many parts of Germany: it is black; the ſhells are ſtriate.

Cyclops. The thorax is four-horned, the lateral ones larger; the head is two-toothed, and the body ferruginous. This is an Indian inſect

Violaceus. Thorax ſix-ſpined; jaws prominent; the front is ſloping; the body entirely violet. It inhabits Siberia, under ſtones, and is very ſmall. The ſhells are marked with hollow punctures.

Œdipus. Horn of the thorax flat, toothed beneath; the horn of the head is truncate, three-toothed. It inhabits the Cape of Good Hope, and is middle-ſized. The ſhield is rounded, emarginate; thorax rounded behind, with an impreſſed puncture at the ſides; the ſhells are ſtriate.

Rhadamistus. Thorax deeply excavate, with a recurved horn before; head unarmed; ſhell rufous, with a black ſuture and two ſpots. This is a ſmall inſect, and is found at Coromandel. The ſhield is rounded, braſſy, whitiſh before; the thorax is longer than the ſhells, braſſy, pale at the ſides, with a braſſy dot; the ſhells are ſtriate.

Nemestrinus. Thorax with two projecting ſharp horns; horn of the head erect, ſubulate. The body of this inſect is hairy; the ſhield is rounded and entire; the thorax with an impreſſed puncture on each ſide; the ſhells are ſtriate. This is found at the Cape of Good Hope.

Jachus. Thorax prominent, two-lobed; the horn of the head recurved and ſimple. It inhabits the Cape of Good Hope. The ſhield is rounded, notched at the tip; the horn is long, erect, recurved at the end; thorax ſlightly punctured; there are two elevated lines on each ſide near the edge.

Sabæus. Thorax with a double prominence; the horn of the head erect, ſimple, as long as the thorax. This is found at Coromandel. Shield projecting, rounded, ſcarcely emarginate; the thorax is black, poliſhed, with an impreſſed lateral point on each ſide; the ſhells are ſtriate, black, poliſhed.

Nanus. Thorax with a double prominence; the horn of the head is erect, ſimple, as long as the head. This is found at Tranquebar.

Splendidulus. Thorax braſſy, with two compreſſed black horns; horn of the head erect, compreſſed at the tip. This is ſeen in divers parts of South America. The ſhield is rounded, ſlightly emarginate; horn obtuſe; thorax angular, with two ſubarched obtuſe horns in the middle; the ſhells are grooved, green, obſcure; legs black; thighs braſſy.

Festivus. Thorax gibbous, two-horned; horn of the head erect; ſhells red-braſſy. It inhabits America.

Pactolus. Thorax two-toothed; horn of the head long, recurved, two-toothed in the middle. It is of a braſſy-green colour, and is found in Braſil. The ſhield is rounded, entire; the horn is black, with two ſharp teeth in the middle; thorax channelled on the fore-part, paler at the ſides; ſhells teſtaceous, with a braſſy ſuture.

Guineensis. Thorax two-toothed, braſſy; horn of the head elevated, ſhort. This inhabits Guinea, from whence it derives its name. The antennæ are teſtaceous; the ſhield is rounded, a little reflected at the edge; thorax rounded, braſſy, with two ſmall teeth before; ſhells ſubſtriate, black, croſſed with an interrupted teſtaceous ſtreak at the baſe, and teſtaceous at the tip.

Pygmæus. Thorax two-toothed, braſſy; ſhield unarmed, emarginate; ſhells teſtaceous, ſpotted black. Found at Tranquebar.

Ammon. Thorax three-toothed; horn of the head recurved; ſhells ſtriate. It is an American inſect; the ſhield is rounded, emarginate, with a projecting, ſharp, recurved horn; the thorax is ſmooth, with three teeth, the middle one is the larger; the ſhells with crenate ſtripes.

Midas. Thorax three-horned; ſhield projecting, wrinkled, with a broad hollow in the middle; it has two horns, which are ſhort and erect, and two denticles in the middle; the thorax is punctured, rough, with ferruginous hairs; the horns are depreſſed, crenate at the ſides; the middle ones are broader, emarginate; ſhells ſtriate.

* **Lunaris** is an Engliſh inſect, and found likewiſe in other parts of Europe. It has been deſcribed by Mr. Donovan; its thorax is three-horned; the middle one obtuſe, bifid; the horn of the head is erect; the ſhield emarginate. In each ſex the ſhield is horned; the thorax of the female is unarmed.

Cælatus. Thorax three-horned, the middle one three-toothed; the horn of the head is recurved, long, one-toothed within. It is leſs than the lunaris. The ſhield is rounded, the horn compreſſed, with a ſtrong incumbent tooth in the middle within; thorax elevated, retuſe each ſide; ſhells hardly ſtriate.

Belzebub. The thorax has a triple prominence; the head is three-horned, the middle one is the largeſt. The ſhield is rounded, ſcarcely emarginated; the horn of the head is ſhort, with two ſmaller horns at the baſe; the ſhells are ſtriate; the middle ſhanks clavate and toothed.

Tarandus. Thorax four-horned; head with two compreſſed horns. It inhabits the Eaſt Indies, and is a ſmall and black inſect. The ſhield is ſlightly angular, black, with an elevated line behind, which is terminated on each ſide by a ſhort horn; the thorax is black, with four equal horns, the middle ones connected at the baſe; the ſhells are teſtaceous, black at the ſuture; the legs are teſtaceous.

Lemur. The thorax is four-horned, coppery; ſhield tranſverſe, carinate behind; ſhells teſtaceous. It is found in divers parts of Germany. The ſhells are ſometimes marked with a band compoſed of five brown dots.

Camelus. Thorax four-horned; the ſhield is ſlightly two-horned behind; the body is black. This alſo is a German inſect. The female is marked with a double tranſverſe carinate line on the ſhield; the hind one larger.

Unifasciatus. This curious inſect has a five-horned thorax: it is black, but the ſhells are teſtaceous, with a black band. It inhabits Tranquebar. The ſhield is rounded, unarmed, black; the thorax is gibbous, black, with five tubercles; the two lateral ones larger, the three middle ones diſpoſed in a triangle; the ſhells, with a diſtinct ſpot at the baſe, a broad indented band in the middle, and blotch at the tip, all black; the knob of the antennæ is ferruginous.

Rhinoceros. The thorax of this ſpecies is retuſe; the horn of the head is ſimple; the ſhield is bifid; ſhells punctuate. It inhabits Aſia. The body is pitchy, beneath it is hairy; the thorax of the female is excavate.

Barbarossa. Thorax rough on the fore-part; the horn of the head is recurved, ſhort. This is found in New Holland. The ſhield is elongated, ſub-emarginate ; the horn is ſubulate, as long as the head ; the thorax is rounded ; the ſhells are pitchy, punctured, and ſtriate ; the fore-ſhanks are four-toothed.

Satyrus. Thorax truncate before ; the horn of the head is recurved, as long as the head. It inhabits America. In this the ſhield is widely emarginate ; the horns three times as long as the ſhield ; the ſhells are ſtriate ; the body beneath is ferruginous, hairy ; the ſhanks are toothed.

Jamaicensis. This, as its name imports, is a Jamaica inſect ; the thorax is retuſe before ; the horn of the head is recurved ; the ſhells are very ſmooth.

Silenus. The thorax of this is excavate before ; the horn of the head recurved ; the ſhells are very ſmooth. It inhabits ſouthern Europe.

Apelles. Horn of the head very ſhort ; ſhells cinereous, with black raiſed dots ; it has no fore tarſi. It inhabits the Cape of Good Hope. The body of this inſect is ſmall ; the ſhield rounded, entire, with raiſed ſutures ; thorax is unequal, grey-brown, the margin and two ſpots yellow ; the ſhells are of a grey-brown, ſtriate, with raiſed lines ; the legs are yellow, ſpotted with black.

Hylax. Horn of the head emarginate ; hind-ſhanks very ſhort, ſpinous at the tip. This is found in many parts of Africa.

Coronatus. Shield of the head emarginate behind. It inhabits Java. The ſhield is raiſed on each ſide ; the thorax is punctured ; the ſhells are ſmooth ; the hind-thighs ſhort, thick, and the body pitchy.

Dionysius. Thorax excavate ; horn of the head recurved, depreſſed, thicker at the tip. It inhabits Tranquebar.

Melibæus. Thorax uneven before ; horn of the head very ſhort and truncate ; the ſhells ſtriate. This is found in North America. The antennæ are thick, pitchy ; the head, thorax, and legs black ; the ſhells are marked with crenate ſtripes ; they are dull and pitchy.

Didymus. Depreſſed ; thorax with a groove ; head three-ſpined ; ſhells ſtriate. It inhabits America. The female has a ſmall elevated ſpine on the thorax.

Guttulatus. The thorax of this is punctured ; the ſhield is entire, with two elevated obtuſe horns. It is found in Italy. The ſhield is rounded, with a tranſverſe carinate line in the middle ; the thorax is rounded, black, poliſhed ; ſhells punctured, ſtriate, black ; the body is black.

Subterraneus. Head with three tubercles ; ſhells with crenate ſtripes. It is found in ſeveral parts of Europe. It reſembles the S. foſſor, ſhortly to be mentioned, but is not more than half its ſize.

Sorex. Head with three tubercles, the middle one ſlightly horned ; the ſhells are ſtriate, grey, edged with black. It inhabits China and the Eaſt Indies, and is the ſize of the next. The ſhield is reflected, emarginate, black, immaculate.

* Fossor. Thorax retuſe ; head with three tubercles, the middle one is ſlightly horned. This, as the aſteriſc ſhews, is found in our own country.

Scrutator. Head with three tubercles ; the ſhells and abdomen rufous. The ſhield is rounded ; thorax punctured, black, poliſhed, with a broad rufous margin ; ſhells ſtriate, with a raiſed dot at the tip and at the baſe ; the legs are black.

Analis. Head with three equal tubercles ; black ; ſhells ferruginous at the ends. It is an Indian inſect, and is the ſize of the S. foſſor.

* Terrestris. Head with three equal tubercles ; ſhells ſtriate. This is an Engliſh inſect. It is not more than half the ſize of the S. foſſor ; the tubercles of the head are ſhort and obtuſe.

Obscurior. Dull black ; head with three obſolete tubercles ; the ſhells ſtriate. It inhabits Germany. It is the ſize of the terreſtris.

Ater. Head with three tubercles, the middle one ſlightly horned ; ſhells ſtriate, very ſmooth. Inhabits Keil. The ſhield is rounded, ſlightly emarginate ; thorax ſubpunctured, black, poliſhed ; ſhells black, poliſhed, and ſtriate, but not crenate ; the body is black, and the legs are pitchy. The thorax is ſometimes marked with a ſmall, lateral, rufous ſpot.

* Conflagrans. Head with three tubercles ; ſhield and ſcutel poliſhed black. It is found in divers parts of Germany, as well as in this country. The ſhells are grooved, with hollow dots.

* Testaceus. Teſtaceous ; its head has two tubercles ; the ſhells are punctured and ſtriate. This likewiſe, as well as the two following, are inhabitants of England. The thorax is punctured ; the body hairy.

* Fimetarius. Black ; head tuberculate ; ſhells red. It feeds on cow-dung.

* Conflagratus. The thorax of this inſect is immaculate ; the ſhells are ſtriate, teſtaceous, with a black ſpot. This is deſcribed in Donovan's Engliſh Inſects. The ſcutel and body are black ; the legs are pitchy.

Inquinatus. The head has three tubercles ; the ſhells are grey, ſpotted with brown. It inhabits Saxony. The head is black ; thorax ſmooth, black, poliſhed, with a pale rufous edge ; the ſhells are ſtriate and poliſhed.

Suturalis. This is of a blackiſh hue ; the head has three tubercles ; the ſhells are teſtaceous, with a deep black ſuture : hence its ſpecific name. It is found in the Weſt Indian iſlands, and is a ſmall inſect. The thorax is black, with a teſtaceous edge, and ſmall black dots ; the ſhells are ſtriate ; body duſky ; legs yellowiſh.

* Sordidus. Head tuberculate ; thorax black, with a pale edge and black dot ; the ſhells are grey. This and the next are natives of England. The ſhield is entire, black, with a pale ſpot on each ſide ; the thorax is ſmooth ; the ſhells are ſtriate ; the ſuture more duſky ; the body beneath variegated with black and grey ; the legs are pale.

* Luridus. Head tuberculate ; body black ; ſhells grey, ſtriate with black. Head and thorax black, poliſhed ; ſhells with black lines and ſpots, ſometimes entirely black.

Granarius. Black ; the ſhield is marked with a ſingle tubercle ; the ſhells are teſtaceous behind. This is an European inſect, and is of the ſize of a grain of wheat.

Sordens. Black ; head tuberculate ; the middle prominent ; the ſhells are dull teſtaceous ; the ſuture and edges of a dull brown.

Nebulosus. Brown ; thorax ſmooth, the outer margins livid ; the head obſcurely tuberculate ; ſhells ſtriate, clouded with brown ; the legs are teſtaceous. It is found in different European countries.

Suturatus. Black, poliſhed ; head with a ſingle minute tubercle ; ſhells of a dirty yellow colour, ſtriate, punctured ; outer edge at the baſe of the ſcutel and ſuture black. It is found chiefly at and in the neighbourhood of Saltſburg, on horſe-dung.

Marianus. Head tuberculate ; ſhells ſmooth, glaucous, dotted with brown. It inhabits America, and is thought to be the female of S. hercules ; abdomen and thighs ferruginous.

Bonasus. Thorax with a double prominence ; the head is three-horned, the lateral ones arched. This is an Indian inſect. The thorax is braſſy; the ſhells duſky, and the body black.

Sagittarius. Thorax mucronate before; head with a ſingle erect horn. It is found at the Cape of Good Hope. The ſhield is rounded, entire, black: the horn is as long as the head; the thorax is black, with a pale edge; ſhells ſtriate-grey; fore-legs black, with a golden ſpot at the baſe; the others are variegated.

Carolinus. Thorax retuſe, with two knobs; horn of the head erect, and very ſhort; the ſhield is entire; the ſhells are grooved. It is a native of Carolina. It is black, obtuſe, gibbous, and half an inch thick.

Sphinx. Thorax with four impreſſed points; head ſlightly horned; it has no fore tarſi. It inhabits America, and is found in the ſouthern parts of Europe.

Taurus. Hind-head with two reclined arched horns. It inhabits France and Germany.

Capra. Hind-head with two ſubarched horns; the body is black and opaque. It is a native of Saxony, and is thought to be a variety of the taurus.

Ibex. Head with two very ſhort horns; the body is black, ſlightly ſpotted with yellow. It inhabits India. The ſhield is rounded and entire; the horns are ſubcompreſſed; the antennæ are teſtaceous; thorax rounded behind; the ſhells are ſtriate; the body beneath is black, and the thighs yellow.

Alces. The thorax is doubly retuſe; the ſhield of the head is ſlightly two-horned, with a raiſed tranſverſe line; the body is ſmooth and black. It inhabits Hungary, and is the ſize of the S. taurus. The ſhield is rounded and entire; the thorax is rounded, with two obſolete ſmall teeth.

Gazella. The thorax of this inſect is braſſy; the hind-head has two arched horns; the ſhells are teſtaceous. It inhabits Guinea, and is of the ſame ſize as the laſt.

Carnifex. Thorax angular and rough; the horn of the head is inflected; the body is braſſy. It inhabits America. Like the dung-beetle, it forms round balls of excrement to depoſit eggs in.

Hispanus. The ſhield of this inſect is horned, emarginate; ſhells ſtriate; ſecond pair of thighs very remote. It inhabits ſouthern Europe.

Spinifex. Thorax rounded; the hind-head with a recurved ſpine. It inhabits Coromandel. The ſhield is rounded and entire; the ſpine is as long as the thorax; the thorax is ſmooth, black; the ſhells are ſtriate and black, with a green gloſs.

* Nuchicornis. Thorax rounded; hind-head with an erect ſpine; ſhield emarginate. This is deſcribed among Mr. Donovan's Inſects.

Xiphias. The thorax is ſlightly pointed before; hind-head with an erect ſpine; the ſhield is entire. It inhabits Saxony, and is a leſs inſect than the laſt.

* Nutans. Thorax impreſſed before; the hind-head has an erect ſpine, nodding at the tip; the body is black. The ſhield is rounded and entire.

Æneus. Thorax braſſy; horn of the head erect, truncate. It inhabits Tranquebar. The female has two tubercles on the thorax.

Recticornis. Black; head with two erect horns; ſhield rounded. It is found in various parts of Europe.

* Verticornis. Thorax grey, dotted with black; the horn of the head is erect, and very ſhort. It is an Engliſh inſect, and is leſs than the nuchicornis. The thorax is round; the ſhells are ſmooth, and the legs are pale.

Sulcator. This inſect is black; the head has a ſingle tubercle; the ſhells are ſtriate.

Cristatus. Black; thorax crenate; ſhield tuberculate, four-toothed. It is found in Egypt. The thorax is rounded, crenate at the edges; the ſhells are ſmooth; the legs hairy.

* Stercorarius; Clock-beetle. The body is black and ſmooth; the elytra furrowed; the head is of a rhomboidal figure; the forehead is prominent. It is a native of many parts of Europe, as well as of England, and is to be met with in dung. It is much infeſted with ſome ſpecies of the acarus and ichneumon, and hence it has frequently been named the louſy beetle. It flies about in the evening with a loud noiſe, and is ſaid to foretell a fine day. It was held in the utmoſt reverence by the Egyptians, and conſecrated by them to the ſun. It is ſometimes of a greeniſh-blue colour, and ſometimes yellowiſh below, with duſky red elytra. This is the ſhard-borne beetle of Shakſpeare. The female digs a hole, and kneads a lump of freſh dung, of a cylindrical ſhape, on which ſhe depoſits one egg, and then covers it with more dung, attaching it to the root of ſome graſs. In a few days the larva breaks the egg, and feeds on the freſh dung. During the autumn it changes its ſkin four times.

* Vernalis. Shells without ſtreaks or punctures; ſhield rhombic; crown a little prominent. It inhabits other parts of Europe, beſides this country. It ſmells of muſk, and, like the laſt, has an oval-ferruginous downy ſpot at the baſe of the fore-thighs.

Cordalis. Black; thorax heart-ſhaped before, impreſſed, mucronate; head with two tubercles. It inhabits Guadaloupe, and is larger than the ſtercorarius.

Talpa. Thorax mucronate before; ſhield with an elevated tranſverſe line, the tip reflected, emarginate. Inhabits St. Bartholomew's iſland.

Splendidus. Shining green; ſhells ſtriate. It inhabits America. The ſhield is emarginate; thorax rounded with a lateral impreſſed point each ſide; ſhells with crenate ſtripes; thighs toothed.

Globator. Thorax and ſhells duſky black, punctured. It inhabits the Cape of Good Hope. Beneath it is hairy.

Rufipes. Black; thorax glabrous, poliſhed; ſhells ſtriate; legs rufous. It inhabits divers parts of Europe, but is not found in this country.

Gagates. This is black; thorax ſlightly punctured; ſhells ſtriate; legs black.

* Quadri-maculatus. Oblong, black; the ſpots on the outer corners of the ſhells and legs red. This is deſcribed in Donovan's Engliſh Inſects. Thorax glabrous, poliſhed, dull rufous or black; ſhells obſcurely ſtriate; legs often black.

Sus. Oblong; dull rufous; ſhells teſtaceous, ſpotted with black. It is found in ſeveral parts of Germany. The body is poliſhed; ſhells with minute dots.

Elevatus. Gibbous, black; ſhells ſtriate and punctured; the ſhield emarginate. It inhabits Provence.

Nigellus. Black; ſhells ſtriate, the edge and band on the hind-part ferruginous. It inhabits Kamtſchatka.

* Testudinarius. Black; ſhells pitchy, grooved, with ferruginous dots. This is an Engliſh inſect, and has been deſcribed by Mr. Donovan. The ſhield is rounded, emarginate; thorax rough, black; dots on the ſhells diſpoſed in pairs; the legs are pitchy.

Depressus. Black, poliſhed; ſhells ſtriate, rufous; legs black. It is a native of Germany.

Arcuatus. Black, poliſhed; ſhield rufous before; ſhells punctured, ſtriate; the ſuture, marginal dot at the baſe, and abbreviated band, inflected towards the ſuture, reddiſh. This is found at and near Saltſburg.

Porcatus. Brown; ſhells with longitudinal raiſed lines. This is a native of Saxony. It is a ſmall inſect, of a dull brown colour; the ſhells are deeply grooved, and the grooves are tranſverſely ſtriate.

Interpunctatus. Black; ſhells dirty yellow, with black grooves; the intermediate ſpace varied with alternate, black, oblong ſpots. This and the two next are found chiefly at and near Berlin, among cow-dung.

Varius. Black; ſhells half yellow: probably a variety of the laſt.

Minutus. Black, ſtriate; ſhells and legs tawny.

Sacer. The ſhield of the head marked with ſix denticulations; the thorax notched; the ſhanks of the hind-legs fringed; top of the head marked with two ſlight projections. It is a native of the ſouthern parts of the old continent. It is frequent in dry ſituations, even in the ſouthern parts of Ruſſia. Its figure is carved by the Egyptians on the ancient pillars, by whom it was held ſacred: from which circumſtance it derived its ſpecific name.

Variolosus. The ſhield of this is ſix-toothed; the ſhells are black, with variolous impreſſed dots. It inhabits Auſtria.

Miliaris. Shield ſix-toothed; the ſhells are black, with raiſed blacker dots. It inhabits India.

Profanus. Shield ſix-toothed; body black-blue; ſhells ſmooth. It is a native of Guinea.

Bacchus. Shield four-toothed, gibbous; thorax and ſhells glabrous; the ſhanks on all ſides are ſerrate. It inhabits the Cape of Good Hope.

Gibbosus. Shield four-toothed; ſhells with a gibboſity at the baſe. It inhabits America.

Hollandiæ. Shield four-toothed; ſhells grooved. An inhabitant of New Holland.

Granulatus. Body covered with cinereous down; thorax and ſhells with raiſed black dots; ſhield emarginate. It is thought to be only a variety of the laſt.

Cupreus. Black-coppery; ſhield emarginate; thorax gibbous. It inhabits Africa.

Flagellatus. Black; ſhield emarginate; thorax and ſhells rough. It is a native of the Cape, and is found frequent in the ſouthern parts of Europe.

Schæfferi. Thorax rounded; ſhield emarginate; ſhells triangular; hind-thighs long and toothed. It inhabits the warm banks of Germany; depoſits its eggs in round balls of cow-dung, which it rolls up with its hind-feet, and buries.

Pillularius. Black, opaque, ſmooth; ſhield ſubmarginate, with two raiſed oblique lines. This is a native of the ſouthern parts of Europe, about the ſize of the louſy beetle. It rolls up a ball made of excrement, ſeven times the bulk of its own body.

Squaleus. Black; ſhield emarginate; ſhells ſtriate. It inhabits Braſil. The head and thorax are ſmooth, poliſhed; ſhield emarginate; the lobes rounded.

Calcaratus. Head ſhielded, emarginate; hind-thighs toothed. It inhabits Egypt.

Bi-pustulata. Black; ſhells with a rufous ſpot at the baſe. It inhabits New Holland.

Triangularis. Black; edge of the thorax and thighs pale; ſhield emarginate. It is found chiefly in Surinam.

Cinctus. Black; margin of the ſhells pale; the ſhield is emarginate. It is a native of China.

Smaragdulus. Braſſy, poliſhed; ſhield two-toothed. It is a native of America.

Minor. Black; ſhield ſix-toothed; the hind-legs are long. It inhabits the Cape. It is leſs than the ovatus, about to be noticed, and the body is totally black.

* **Ovatus.** Black; thorax rounded, ſix-toothed; ſhells abbreviated. It inhabits Europe.

Amazonus. Teſtaceous; thorax with two black blotches; the ſhells are marked with a brown callus on the outer edge. It inhabits Surinam.

Crucifer. Thorax a little downy, greeniſh; the ſhells are of a pale yellow; they are ſhorter than the body, and marked with a double beamed black croſs. It is a native of Siberia.

Guttatus. Black; thorax rounded, with ſmooth raiſed dots; the ſhield is impreſſed, bifid at the tip; the ſhells are deeply crenate, ſtriate, with oblong ſpots compoſed of yellow hairs.

b. *Mandible arched, ſlightly toothed; abdomen naked at the end, obliquely truncate.*

Stigma. Ruſty brown; ſhells with an oblong ſnowy mark near the tip. It inhabits Java. The body is very large; the ſhield hardly reflected; the legs are black.

* **Fullo.** Teſtaceous, ſpotted with white; ſcutel with a double white ſpot; antennæ divided into ſeven leaves. It inhabits the ſandy ſituations in Europe and Barbary, living very much on the oak, Elymus arenaria and Arundo arenaria. It is hairy below; the hooks at the ends of their legs are furniſhed at their baſe with a crooked branch. This is the largeſt coleopterous inſect ever ſeen in this country, except the Lucanus cervus, or ſtag-beetle. It is by no means common here.

* **Melolontha**; Tree-beetle-Cockchaffer. Teſtaceous; thorax hairy; tail inflected; a triangular white ſpot at each inciſure of the abdomen. This inſect is extremely familiar in our iſland. The larva inhabits the ploughed lands, and feeds on the roots of corn: the complete inſect makes its appearance in the beginning of ſummer. It has ſometimes been ſeen in ſuch prodigious quantities as almoſt to ſtrip the trees of their foliage, and to produce miſchiefs approaching to the devaſtations occaſioned by the locuſt tribe. There is an intereſting account of their ravages in Ireland, by Mr. Molineux, in the Philoſophical Tranſactions for the year 1697, of which the following is an extract.

“Theſe inſects were firſt noticed in this kingdom in 1688. They appeared on the ſouth-weſt coaſt of Galway, brought thither by a ſouth-weſt wind, one of the moſt common, I might almoſt ſay trade-winds, of this country. From thence they penetrated into the inland parts towards Heddford, about twelve miles north of the town of Galway: here and there in the adjacent country, multitudes of them appeared among the trees and hedges in the day-time, hanging by the boughs in cluſters, like bees when they ſwarm. In this poſture they continued, with little or no motion, during the heat of the ſun; but towards evening, or ſunſet, they would all diſperſe and fly about with a ſtrange humming noiſe, like the beating of diſtant drums, and in ſuch vaſt numbers that they darkened the air for the ſpace of two or three miles ſquare. Perſons travelling on the roads, or abroad in the fields, found it very uneaſy to make their way through them, they would ſo beat and knock themſelves againſt their faces in their flight, and with ſuch a force as to make the place ſmart, and leave a ſlight mark behind them. In a ſhort time after their coming, they had ſo entirely eat up and deſtroyed all the leaves of the trees for ſome miles round, that the whole country, though in the middle of ſummer, was left as bare as in the depth of winter; and the noiſe they made in gnawing the leaves made a ſound much reſembling the ſawing of timber. They alſo came into the gardens, and deſtroyed the buds, bloſſoms, and leaves of all the fruit-trees, ſo that they were left perfectly

perfectly naked: nay, many, that were more delicate than the reſt, loſt their ſap as well as leaves, and quite withered away, ſo that they never recovered again. Their multitudes ſpread ſo exceedingly, that they infeſted houſes, and became extremely offenſive and troubleſome. Their numerous young, hatched from the eggs which they had lodged under ground, near the ſurface of the earth, did ſtill more harm in that cloſe retirement than all the flying ſwarms of their parents had done abroad; for this deſtructive brood, lying under ground, eat up the roots of corn and graſs, and thus conſumed the ſupport both of man and beaſt. This plague was happily checked ſeveral ways. High winds and wet miſling weather deſtroyed many millions of them in a day; and when this conſtitution of the air prevailed, they were ſo enfeebled that they would let go their hold, and drop to the ground from the branches; and ſo little a fall as this was ſufficient quite to diſable, and ſometimes perfectly kill them. Nay, it was obſervable that, even when they were moſt vigorous, a ſlight blow would for ſome time ſtun them, if not deprive them of life. During theſe unfavourable ſeaſons of the weather, the ſwine and poultry of the country would watch under the trees for their falling, and feed and fatten upon them; and even the poorer ſort of the country people, the country then labouring under a ſcarcity of proviſion, had a way of dreſſing them, and lived upon them as food. In a little time it was found that ſmoke was another thing very offenſive to them; and by burning heath, fern, &c. the gardens were ſecured, or if the inſects had already entered, they were thus driven out again. Towards the latter end of ſummer they returned of themſelves, and ſo totally diſappeared, that in a few days you could not ſee one left. A year or two ago, all along the ſouth-weſt coaſt of the county of Galway, for ſome miles together, there were found dead on the ſhore ſuch infinite multitudes of them, and in ſuch vaſt heaps, that, by a moderate eſtimate, it was computed there could not be leſs than forty or fifty horſe-loads in all; which was a new colony, or a ſupernumerary ſwarm from the ſame place whence the firſt ſtock came, in 1688, driven by the wind from their native land, which I conclude to be Normandy or Britany in France; it being a country much infeſted with this inſect, and from whence England heretofore has been peſtered in a ſimilar manner with ſwarms of this vermin: but theſe, meeting with a contrary wind, before they could land, were ſtopped, and, tired with the voyage, were all driven into the ſea, which, by the motion of its waves and tides, caſt their floating bodies in heaps on the ſhore. It is obſerved that they ſeldom keep above a year together in a place, and their uſual ſtages or marches are computed to be about ſix miles in a year. Hitherto their progreſs has been weſterly, following the courſe of that wind which blows moſt commonly in this country."

In Mouffet's Hiſtory of Inſects, it is ſaid that early in the year 1574, ſo great a quantity of theſe inſects were driven into the river Severn, that they totally prevented the mills from working, and were with the utmoſt difficulty extirpated by the united efforts of the people, and the various kinds of hawks, ducks, and other birds, which preyed upon them with great avidity. In Normandy, it is ſaid, they generally make their appearance every third year. In this country, the county of Norfolk has ſuſtained more than any other from the ravages of the cockchaffer. In the year 1751 many crops of corn were ruined by it.

The larva, according to ſome well-informed naturaliſts, is two, and ſometimes three, years in paſſing from its firſt ſtate into that of the perfect inſect. The eggs are laid in ſmall detached heaps, beneath the ſurface of ſome clod; and the young, when firſt hatched, are ſcarcely more than the eighth of an inch in length, gradually advancing in their growth, and occaſionally ſhifting their ſkins till they arrive at the ſize of two inches, or more. At this period they begin to prepare for their change in a chryſalis or pupa, ſelecting for the purpoſe ſome ſmall clod of earth, in which they form an oval cavity, and, after a certain ſpace, diveſt themſelves of their laſt ſkin, and immediately appear in the chryſalis form, in which they continue till the ſucceeding ſummer, when the beetle emerges from its retirement, and commits its depredations on the leaves of trees, and other things that it ſelects for its food, breeds and depoſits its eggs in a favourable ſituation; after which, its life is of a very ſhort duration. The cockchaffer is eagerly ſought after and devoured by ſwine, bats, crows, and many kinds of poultry. It varies annually, in having the thorax rufous and black; the male is diſtinguiſhed from the female by a pointed inflected tail.

PILOSUS. Downy, blackiſh; ſhield reflected, ſlightly emarginate; antennæ ferruginous. It is found chiefly in Hungary. The ſcutel is broad, and ſlightly emarginate.

OCCIDENTALIS. Teſtaceous; thorax downy; ſhells with four ſnowy lines. It inhabits different parts of Europe.

ALOPEX. Body covered with tawny down; ſhield reflected, emarginate; ſhells ſmooth, black. Found at the Cape. Shield rounded, ſmooth; ſhells immaculate.

* SOLSTITIALIS. Teſtaceous; thorax downy; ſhells pale yellow, with three paler parallel lines. It inhabits Europe, and appears later than the cockchaffer, generally about the ſummer ſolſtice. It is furniſhed with a ſcutel, and is without horns; the thorax is hairy; the elytra are of a pale yellow colour, marked with three white parallel lines. It is generally met with among trees. The claws at the end of the legs have one little projection, like a tooth, at their baſe.

CANDIDUS. Shield rounded; body downy white. It is an Eaſt Indian inſect. The ſhells are marked with a ſnowy dot near the tip: hence its ſpecific name.

ÆQUINOCTIALIS. Downy teſtaceous; ſhield ſlightly reflected. It is a native of Hungary. The body is covered with aſh-coloured down; the antennæ are rufous.

PINI. Black; ſhield, ſides of the thorax, ſhells, and legs, pale. It inhabits Barbary; as does the

ATRIPLICIS. Oblong, downy, pale; ſuture and tip of the ſhells black; the ſhield is rounded and reflected; the thorax immaculate; the ſhells are nearly ſmooth; the legs are pale; the tarſi brown.

LANIGERUS. Beneath woolly; head and thorax golden; the ſhells are of a pale yellow. This is found in India.

LONGICORNUS. Above ſmooth, black; the ſhells are ferruginous; the club of the antennæ elongated. It is found at the Cape.

PUNCTATUS. Teſtaceous; the ſhells are marked with three brown diſtant ſpots. This is an American inſect. The claws are curved, and very ſharp.

SUTURA. Green; ſuture of the ſhells yellowiſh. It inhabits New Zealand. The edges of the thorax are a little yellowiſh, obtuſely angled behind; the ſhells are ſmooth, ſubſtriate; breaſt and abdomen covered with white down; the ſternum projected and pointed; the legs are green and the tarſi ferruginous.

BARBATUS. Smooth, black, poliſhed; laſt ſegment of the abdomen bearded, a little prominent.

GLACIALIS. This inſect is ſmooth, pitchy; antennæ and legs teſtaceous. It inhabits America.

STRIATUS. Smooth, braſſy; ſhells ſtriate, the ſuture and four lines are coppery. It inhabits America. The ſhell has ten grooves; the body beneath and legs are black.

Hirticollis. Hairy, black; ſhells punctured, ſmooth, rufous. It inhabits Africa. The ſhield of this is rounded.

Ruficollis. Smooth, punctured, ferruginous; ſhells teſtaceous. It inhabits Coromandel.

* Brunneus. Smooth; teſtaceous; ſhells ſtriate; thorax with a dot on each ſide. It inhabits Europe. The larva is ſoft, whitiſh, with teſtaceous head and legs.

Melanocephalus. Smooth, reddiſh, black; ſhells pale.

Erythrocephalus. Smooth; pale; head rufous, black at the baſe. The body is ſmooth and immaculate.

Rufus. Smooth, reddiſh; ſhells teſtaceous; ſhield five-toothed. It inhabits the Cape. The ſhield is reflected; the body beneath is marked with whitiſh hairs.

Festivus. Above ſmooth, green; dorſal line on the thorax and ſuture of the ſhells dark brown. It inhabits New Zealand.

Holysericeus. This is a beautiful inſect; the upper part is green, ſilky, beneath coppery; ſhells with four raiſed lines; it inhabits the ſouthern parts of Ruſſia.

Janthinus. Pale violet; outer edge of the thorax, ſhells, abdomen, and legs teſtaceous; tail violet-brown; thighs violet before.

Coriarius. Violet-brown; thorax yellow-brown; ſhield reflected at the tip; the ſhells are teſtaceous.

Nigritus. Smooth, black; ſhield reflected; ſhells obſcurely ſtriate. This is an American inſect. The ſhield is rounded, black and immaculate; the body is black.

Frischii. This is of a braſſy-black colour, and poliſhed; the ſhells are teſtaceous. It is a native of Germany. The ſhells are teſtaceous, with a braſſy ſuture. It varies in having the ſhells braſſy, but ſometimes blue.

* Vitis. This is green, but the ſides of the thorax are yellow. It inhabits Europe and America, and is found on the vine, whence it derives its ſpecific name. Its ſhells vary in colour; the thorax is edged with yellow.

* Errans. Teſtaceous; thorax with black ſpots; the legs are rufous. It is an inhabitant of this country, and is of the ſize of the S. horticola; it varies in having the thorax ſometimes teſtaceous, immaculate; rarely black, with a teſtaceous edge; the ſhells are ſometimes edged with black.

Umbrosus. Subteſtaceous, with grey down; the legs are teſtaceous. It inhabits Guinea. The ſhield is rounded and entire; the edge a little reflected.

Rupicola. Downy, greeniſh; head black. It is found at the Cape; the body is ſmall, and beneath it is cinereous.

Raucus. Shield reflected; thorax and ſhells punctured, braſſy-black. It is a native of Coromandel. The ſhield is punctured, black; ſhells with an elevated line or two; the body is black.

Splendidus. Black; the ſhells are marked with an abbreviated golden band. This is found at the Cape of Good Hope. It is a ſmall inſect; the ſhield is punctured, black, emarginate at the tip; the thorax is punctured, immaculate; ſhells punctured, with an oblong oval ſpot or band.

* Horticola. Head and thorax blue, hairy; the ſhells are teſtaceous, and the legs black. It is found chiefly in gardens and orchards in this country, and other parts of Europe, being extremely deſtructive to the roots of cabbages, and the beetle itſelf is equally ſo to the apple-tree.

Abdominalis. Head and thorax blue, hairy; ſhells teſtaceous; abdomen covered with white down. This is chiefly found in Italy. It very much reſembles the horticola.

Floricola. Black-blue, ſmooth; ſhells rufous; abdomen with faſciculate white dots; ſhield reflected. It inhabits Africa.

Arvicola. Hairy; ſhield reflected; thorax blueiſh; body black. It inhabits Ruſſia, and reſembles the horticola. The ſhells are black.

Praticola. Thorax a little hairy, varied with yellow and black; the ſhells are teſtaceous. This is a native of Siberia.

Fruticola. Head and thorax covered with blue down; the ſhells are livid, and the ſhield reflected at the tip.

* Ruricola. Black, ſilky; ſhells rufous, ſurrounded with a black edge. It is an inhabitant of this country. The ſhells are duſky, with a darker edge.

Atomarius. Minutely ſpeckled with white; thorax caniculate, black; the ſhells are brown; abdomen white, with lateral black dots. It inhabits the Cape. The ſhells are powdered, with white ſpecks; the abdomen is ſnowy, with a line of black dots on each ſide.

Farinosus. Black, covered with blue ſcales; ſhells abbreviated; ſhield entire. Inhabits various parts of Europe. The body above is blue and poliſhed; thorax broad; when put into hot water, the blue changes to a vivid green.

* Argenteus. Black, beneath ſilvery, poliſhed; ſhells teſtaceous. This is a native of England. The ſhells are ſhorter than the body, gibbous behind; legs teſtaceous; the hind ones elongated.

Cinctus. Braſſy-black, poliſhed; ſhells brown, edged with black. It inhabits Guadaloupe. Small; head and thorax immaculate; the legs are ſpinous and black.

Spinipes. Black, immaculate; hind-legs elongated, thighs one-ſpined at the baſe. It inhabits the Cape. The ſhield is elevated at the tip, duſky; thorax and ſhells opaque; hind-thighs with a ſtrong ſharp ſpine at the baſe.

Dentipes. Black; ſhells teſtaceous; ſhield four-toothed; hind-thighs and ſhanks ſpinous. This is a native of the Cape. The head and thorax black, downy; the hind-thighs one-ſpined; the ſhanks are two-ſpined.

Crassipes. Black, ſpotted with white; hind-legs long and very thick. This alſo is a native of the Cape, as are the next three.

Gonager. Grey; legs rufous; hind-thighs thick, and unarmed.

Cancroides. Black, minutely ſpeckled with white; the hind-thighs long, very thick, ſpinous at the tip. In this the ſhield is widely emarginate; the thorax is a little ſpeckled with white at the edge; abdomen white, the laſt ſegment prominent, with a broad black band.

Margo. Thorax black, edged with white; ſhells teſtaceous. The head is black, immaculate; thorax rounded; ſhells ſhort; ſcutel cinereous; body beneath covered with white down; the legs are black, the hind-ones a little elongated.

Pulverulentus. Body covered with a greeniſh-ſilvery bran; ſhells and legs teſtaceous. This is a native of Germany.

Maurus. Hairy, black; ſhield reflected. This is an inhabitant of Barbary; it is the Melolontha morio of Fabricius. The body is immaculate; ſhield very much reflected.

Subspinosus. Yellowiſh; the legs are rufous; the thorax ſubſpinous. This is an inhabitant of America.

Minutus. Black; ſhells grey; legs teſtaceous, hind-thighs ſharply toothed. A native of the Cape. It is a very ſmall inſect; head and thorax hairy; ſhells ſmooth, immaculate; hind-thighs with a ſtrong recurved tooth at the baſe.

Mutabilis. Black, rough, with cinereous down. It is a native of Tranquebar.

Variabilis. Blackiſh; ſhells with a cinereous gloſs; the antennæ and legs teſtaceous. It inhabits Germany, and ſome parts of America, and ſubſiſts on rotten wood. The head and thorax are black and immaculate; the ſhells are ſtriate.

Aranoides. The ſhield of this inſect is a little reflected; the body is yellowiſh; the ſhells are ferruginous, ſlightly barred with brown. This is a native of the Cape.

Lineatus. This is of a dull greeniſh hue; the ſhells are marked with rufous lines. It is found in Sierra Leone. It is ſmall and gibbous; the mouth is marked with black; the body beneath is black, but the legs are pitchy.

Monticola. Shield entire, reflected; body ſmooth; teſtaceous; the head is black. It is a native of New Holland. It is a very ſmall inſect.

Humeralis. Black; ſhells at the baſe, and ſpot in the middle, pale. It inhabits New Holland.

Ursus. Black, covered with long and thick hair; the four legs are teſtaceous. It is found at the Cape. The ſhield is projecting, emarginate at the tip; the thighs are black; ſometimes all the legs are black.

Lynx. Hairy, black; edge of the ſhells are golden. It is found at the Cape.

Vulpes. Golden, with tawny hairs; abdomen ferruginous. This ſpecies is found in Siberia. The head is ſhort and entire; it is golden, with a blackiſh edge; the abdomen is black at the baſe; the tip of the male is inflected, two-toothed; the legs are golden.

Bombylius. Black, with cinereous hairs; the ſhells are teſtaceous, with three whitiſh lines at the tip. It inhabits Africa. The ſhells of this ſpecies are ſmooth, with three lateral lines, from the middle to the tip.

Vittatus. Blue, hairy; ſhells teſtaceous, with three whitiſh lines. It inhabits India. This inſect is more oblong than moſt others of the genus; the ſhield is truncate; the ſhells ſhorter than the body, with three lines compoſed of whitiſh down; the body beneath is hairy.

Unicolor. This ſpecies is entirely tawny, ſmooth; the ſhells are impreſſed with dots. It inhabits India.

Pellucidus. Silky, duſky, clouded with white; ſhells ribbed. This is a native of Germany.

Fuscescens. This is browniſh; the ſcutel is marked with a double tranſverſe line; the hind-ſhanks are four-toothed. It is found at Milan, and very common in the corn-fields, and in the ſummer-time on trees. The body above is bay, beneath it is rough, with long red down.

Sepicola. Scutellate; head and thorax with green down; ſhells hairy, ciliate. This is an Indian inſect, as is the next.

Syriacus. Scutellate; head and thorax with green down; the ſhells are hairy.

c. *Mandible ſtraight.*

Goliathus. The Goliath beetle is very remarkable both in point of ſize and colour; it is larger than the Hercules, and has a roſe-coloured thorax, marked with longitudinal black ſtripes or variegations, and purple-brown wing-ſheaths; the head is divided in front into two forked proceſſes; the limbs are black and very ſtrong. It is a native of ſome parts of Africa. There is a ſuppoſed variety that ſometimes occurs, in which both the thorax and wing-ſheaths are of a pale yellowiſh-brown inſtead of roſe-colour, and they are marked with black variegations.

Bifrons. This is of a dull braſſy colour; the ſhells are brown, ſpeckled with white; the ſhield is projecting and bifid, the crown is haſtate. It inhabits South America.

Polyphemus. Green, with white lines; the head is three-horned; the middle horn is projecting and bifid.

Micans. Green, poliſhed; ſhield projecting, recurved, bifid; the fore-ſhanks are ſerrate. It is found in divers parts of Africa. The head is carinate, with a ſmall ſpine on each ſide between the eyes; the ſhield has two denticles in the middle, and two at the tip; the ſhells are abbreviated, pointed, and poliſhed; the ſternum is projecting, broad and obtuſe, with a fine longitudinal ferruginous line; the abdomen with an impreſſed point on each ſide the laſt ſegment.

* Auratus. This ſpecies is of great beauty: it is about the ſize of the common garden-beetle, but of a flatter ſhape, and of the moſt brilliant, varniſhed golden-green colour, with the wing-ſhells varied towards the lower part by a few ſlight, tranſverſe, white ſtreaks. This very beautiful ſpecies is not uncommon during the hotteſt part of ſummer, frequenting plants and flowers; its larva or caterpillar is commonly found in the hollows of old trees, or among the looſe dry ſoil at their roots, and ſometimes in the earth of ant-hills. It remains three years before it changes to a pupa or chryſalis, out of which the inſect emerges in a ſhort time afterwards. When touched it emits a moiſture from the tail.

Æruginosus. Gilt; above green. This is an inhabitant of Calabria.

Metallinus. Braſſy, opaque, immaculate; beneath coppery. It inhabits Italy, and is the Cetonia metallica of Fabricius. The ſhell is thickened at the edge.

Pubescens. Dull braſſy; edge of the thorax and ſegments, and two ſpots on the tail, white. It inhabits the Cape. The front is cinereous, downy; thighs above with a large white ſpot.

Erythropus. Black; ſhield projecting, ſinuate at the baſe on each ſide; border of the thorax and edge of the ſhells cinereous. It inhabits the Cape. Between the antennæ are frequently two cinereous dots; antennæ of three long leaves; the laſt ſegment of the abdomen prominent, with two cinereous dots.

Cordatus. Black, poliſhed; ſhield heart-ſhaped. This alſo is an inhabitant of the Cape. The antennæ are made up of three ſhort leaves; thorax immaculate; ſhells hardly ſtriate, black; fore-ſhanks very much toothed.

Albopunctans. Black; thorax with white ſpots. Found in divers parts of Italy.

Surinamus. Thorax lobate behind; body black, ſilky; ſhells with yellow marginal ſpots. It is found, as its ſpecific name denotes, at Surinam.

Nitidus. Thorax lobate behind; head with an incumbent ſpire; ſternum horned. It is found in Carolina.

Lobatus. Black, poliſhed; thorax lobed behind; ſhield emarginate; ſternum horned. It inhabits America. The thorax punctured, projecting behind; ſhells with two raiſed lines meeting before the tip.

Capuchinus. Pitchy; thorax yellowiſh at the edge; ſternum projecting. It inhabits India. The hind-thighs are much compreſſed.

Graculus. This is excutellate, dull livid; thorax and ſhells ſpotted with black. A ſpecimen of this is in the muſeum of ſir Joſeph Banks. In this the ſhells are gibbous behind; ſternum projecting and hardly horned.

Cornutus. Black, opaque, immaculate; fore-edge of the thorax ſlightly horned. It is found at the Cape.

Smaragdulus. Yellowiſh, ferruginous; ſhells greeniſh; ſternum horned. It inhabits America. The body is yellowiſh; the hind-ſhanks are punctured.

Fascicularis. Thorax with four white lines; the ſhells are of a greeniſh hue; the abdomen bearded. It is found in Africa.

Aulicus. Green, poliſhed; edge of the thorax and ſhells with white ſpots. This ſpecies is found at the Cape of Good Hope. The head is marked with two ſmall white ſpots before the eyes; the ſhield is emarginate; ſhells obtuſe, green, with a white ſpot at the baſe, five ſpots on the edges, two on the back and one at the tip; the abdomen has four lines of white dots, the laſt ſegment prominent, with two white ſpots; the hind-thighs are marked with a white ſpot.

Signatus. Thorax black, edged with white; the ſhells are teſtaceous; the future and edge black. This is found at the Cape.

Marginatus. Smooth, black; thorax and ſhells edged with rufous. It is a native of Guinea, as is the next. The ſhield is emarginate; the thorax on the fore and lateral edge rufous.

Ornatus. Smooth, dull purpliſh; thorax and ſhells with a ſinuate teſtaceous edge.

Striatus. Smooth, black, poliſhed; edge of the thorax teſtaceous, with a black ſpot; ſhield emarginate. Inhabits Guadaloupe.

Fasciatus. This ſpecies is black; the edge of the thorax is teſtaceous; the ſhells are teſtaceous, with a black future and indented band. It inhabits Alexandria; as does the

Thoracicus. This is black; thorax ferruginous; the ſhells are black, with a purpliſh ſhade.

Pictus. Black; thorax with five white lines; the ſhells are pointed and ſpotted with white. This inhabits the Eaſt. It is characterized by its black head; two lines, and an ocular ſpot on each ſide, are white; the ſcutel is triangular, black with a white line; the laſt ſegment of the abdomen is prominent, and white with a black line; the body beneath is white, with a black line down the middle.

Elatus. Black; the thorax is marked with three white lines; ſhells olive, the edge is black dotted with white. It inhabits Guinea.

Atromaculatus. Dark brown, poliſhed; ſhells with black ſilky ſpots, and a white one behind. It inhabits Tranquebar. The ſhield of this inſect is reflected, ſlightly emarginate; the ſhells are ſtriate; and the abdomen is marked with lateral white dots.

Elegans. Green, highly poliſhed; the future of the ſhells and dot at the tip white. It is a native of Coromandel. The ſhield is ſlightly reflected, with a ſmall recumbent ſpine; the firſt ſegment of the abdomen is marked with a teſtaceous edge; the ſternum is prominent, ſlightly recurved and obtuſe.

Venereus. Coppery, poliſhed; thorax, ſcutel, and ſhells green. It inhabits Surinam and Jamaica.

Zebra. This is hairy, braſſy-green; ſhells teſtaceous, with a braſſy future, and black ſtripe in the middle. It is an African inſect, of which the ſhield is emarginate, and the thorax downy.

Iris. Green, finely poliſhed, with a brown ſhade. It inhabits Surinam.

Clavatus. Green, coppery, poliſhed; ſhells teſtaceous; ſternum horned on the fore part. This is a native of America.

Sordens. Braſſy-black; ſhells with two raiſed lines, and ſpotted with white. It inhabits Brazil.

Nitidulus. Green-teſtaceous, poliſhed; ſhield emarginated; ſhells pointed. This is a ſmall inſect, and found in America.

Philippensis. Braſſy, poliſhed; thorax edged and ſpotted with white, ſhells pointed, ſpotted with white. This is found in ſeveral of the Philippine iſles. The thorax is rounded with two white dorſal ſpots.

Maculatus. Braſſy, poliſhed; the thorax has a white ſpot on each ſide; the ſhells are marked with numerous white ſpots. It is a native of Coromandel. The body beneath is copper; the breaſt with a large ſpot on each ſide; the abdomen is marked with four lines of white dots.

Areatus. Black, downy; ſhells rufous on the diſk; theſe are gibbous behind, with a ſingle raiſed line. This ſpecies is a native of Virginia.

Floralis. Smooth, black, edges of the thorax, ſhells, and abdomen white. It inhabits Africa; on compoſite flowers. The head is black, with two white dots between the eyes; the ſhield is ſlightly emarginate; the tail is prominent, and white; the edge of the abdomen is ſpotted with white.

Versicolor. Black; thorax rufous, ſpotted with black; ſhells black, ſpotted with white, and a large rufous one on the diſk. It is found in Egypt. The ſcutel is black, with a white dot at the tip; abdomen black, the edges and tail are ſpotted with white.

Æquinoctialis. Black; thorax edged with white; the ſhells are teſtaceous, with a white ſpot near the ſcutel and tip.

Histrio. This is teſtaceous; the head and two lines on the thorax, future, and three ſpots on the ſhells, are black.

Gloriosus. Teſtaceous, poliſhed, with abbreviated black lines. It inhabits St. Domingo.

Cæruleus. Smooth, glaucous; ſhells ſtriate and punctured, ſteel-blue, with five white ſpots.

Metallicus. Green-gilt, beneath violet; there are four rings of the abdomen marked with a white ſpot.

d. *Mandible ſtraight, obtuſe.*

* **Nobilis.** This is deſcribed by Mr. Donovan; it is of a ſhining green; the abdomen behind is dotted with white; the ſhells are rugged. The larva is found on decayed wood, and the perfect inſect on umbellate flowers. The larva is grey, the legs are yellowiſh, and the head ferruginous.

* **Fasciatus.** Black, clothed with yellow down; the ſhells with three abbreviated black bands. It is a native of this country, and of other parts of the north of Europe, and feeds on the flowers of the ſyringa, and on ſome umbelliferous plants.

* **Hemipterus.** This ſpecies is furniſhed with a ſcutellum; the thorax is downy, edged with two longitudinal wrinkles; the elytra are ſhortened. This is a native of England. The larva is found in wood, and the perfect inſect on flowers. The female is armed with a ſtiff ſhort ſting.

Lunulatus. This is ſmooth, blue; ſhells with two white lunules. It inhabits Carolina. The ſhield is emarginate; the ſhells are very ſhort.

Delta. Thorax black, with a white triangle; the ſhells are teſtaceous, with a brown ſpot. It inhabits America.

Fulvus. Downy; thorax fulvous, with three black lines; the ſhells are teſtaceous, with a fulvous future. It is a native of the Cape. The antennæ are pitchy, with a tuft of black hair in the middle; the ſcutel is triangular, with a fulvous ſpot in the middle; the tail is fulvous; the legs are pale teſtaceous.

Carbonarius. This is entirely black, hairy; the ſhield is narrow, grooved, bifid at the tip. This is not an European inſect.

Unguiculatus. Grey, downy; thorax brown; ſhield narrow, grooved, bifid at the tip; ſhells rufous, the edge is black and hairy; the hind-legs are long and clawed.

B. *Feelers capitate; jaw bifid.*

Species.

GEMMATUS. Cinereous, thorax unequal; ſhell ſtriate, and marked with raiſed black dots. It inhabits Senegal. The antennæ are pitchy, the firſt joint is hairy; the ſhells are marked with crenate ſtripes.

* SABULOSUS. The thorax and ſhells of this ſpecies are rugged; the thorax is very entire; antennæ hairy at the baſe. It inhabits this country and other parts of Europe. It is to be met with on ſandy hills which are expoſed to the ſun-ſhine.

CORNUTUS. Thorax and ſhells ſpinous and ſerrate; head with two projecting arched horns. It inhabits Ceylon.

MORTICINII. Shield unequal, fringed; ſhells ſtriate, convexly punctured, roughiſh. It is a native of Tartary, and found under dead carcaſes, which have been dried in the ſun. It makes a certain noiſe by rubbing its ſhells together; the body is black and opaque.

LONGIPES. Head and thorax black; the ſhells are pale teſtaceous, with a common black lunule; the hind-legs are very long. It is found at the Cape of Good Hope.

C. *Feelers cylindrical; the club of the antennæ tunicate.*

Species.

CEPHALOTES. The body of this is roundiſh and black. It inhabits the drieſt deſerts of Europe, under ground. The body is ſmooth, black, ſub-opaque, without wings; the thorax is convex and margined; it has no ſcutel; the ſhells are ſcarcely longer than the thorax; the legs are formed for digging; the mandible is falcate, toothed within.

BANKSII. Body oblong, and of a graſſy-green colour. It is a native of Norfolk iſland. The antennæ are ſhort, black, perforated at the tip; the head has a raiſed triangle in the middle; the mandible is large, recurved, truncate, emarginate, hairy and ferruginous within; the thorax is ſubpunctured, the edge is deflected on each ſide at the angle; the ſhells are a little rugged, not joined; the legs are braſſy; the ſhanks are toothed.

D. *Feelers unequal; the fore ones ſubclavate; the hind ones filiform.*

RETICULATUS. Black; ſhells reticulate and grey. It is a native of Madagaſcar. Head and thorax are black, immaculate; the abdomen is ferruginous.

UNIFORMIS. Black, immaculate; this alſo inhabits Madagaſcar.

We have now given an account of the chief ſpecies of this very extenſive genus; and ſo great is the ſingularity of appearance in many kinds, that ſcarcely can any imagination conceive a ſtructure of horn, or proceſs which is not exemplified in ſome of the tribes.

SCARABÆUS *Tardipes*, the *Slow beetle*. We have a very ſingular account of the longevity of this animal, given by Mr. Baker from his own obſervation; which lived two years and a half without any viſible food or drink. It ſeems probable that it received ſufficient nouriſhment from the particles floating in the air; and it is poſſible that lizards, ſnakes, &c. when they live ſo long without any viſible food, are ſupplied in the ſame manner.

We know that the Egyptians had a very high veneration for the beetle. This appears not only by the account hiſtorians give of its being one of their deities, but by the many images we find of it among their antiquities. As theſe were a wiſe and learned people, we cannot ſuppoſe they would, without ſome reaſon, pay ſo much regard to ſo contemptible an animal as this appears to be; and it is very poſſible they might have diſcovered this property of its living in this manner without food, and thence eſteem it a ſymbol of the deity. It is not known how long Mr. Baker's beetle would have lived in this manner with him; for it at length got away, while a careleſs ſervant took up the glaſs to wipe it. Phil. Tranſ. N° 457, p. 447.

SCARABÆUS *Vorax*, the *cankerworm*. The laſt term is uſed in the tranſlation of our bibles to ſignify a very deſtructive inſect, of the nature of the locuſt, and uſually mentioned as its companion. The Septuagint gives it the name *βρȣχος*, *bruchus*, a name ſignifying an animal which makes a great noiſe, as this inſect does both in eating and in flying. We generally underſtand by this word a reptile, but it certainly means no other than that ſort of beetle which we call the *cockchaffer*, or *dor;* a flying inſect, very remarkable for the humming noiſe it makes with its wings when in motion, and which, when it is found in ſwarms ſitting upon the hedges, makes a continual noiſe in eating, like the ſawing of wood. This creature deſerves very well to be placed with the locuſt, as a deſtroyer of the fruits of the earth.

In another part of the Old Teſtament, the ſame word *bruchus* is tranſlated *locuſt*, or *beetle;* and this explains the rationale of that odd clauſe in the Jewiſh law, where Moſes tells the Iſraelites, "theſe ye may eat of: every flying creeping thing that goeth upon all four, which have legs above their feet to leap withal upon the earth; even theſe of them ye may eat: the locuſt after his kind, and the bald locuſt after his kind, and the beetle after his kind, and the graſshopper after his kind."

It has appeared very ſtrange to many, that among the pure and clean foods, the beetle, and ſuch other dry and naſty reptiles, ſhould be recommended in ſcripture as wholeſome food for man; but there appears reaſon on the ſide of this when thoroughly conſidered. It is very evident that neither the Jews, nor any other people, would eat ſuch inſects as theſe, while any thing better was to be had; but as they had lived in a country often viſited by locuſts and theſe cockchaffers, which might at ſome time eat up all the fruits of the earth, then in the want of theſe the prophet tells them they might eat up the devourers themſelves, and yet be clean. So alſo it appears that we are to underſtand what we are told of St. John the Baptiſt, that he fed on locuſts and wild honey; for it was in the deſert that he eat theſe, where no other food was to be had.

The poor people of Ireland have taught us, that the prophet adviſed his people to a wholeſome food in this text; for ſome years ago, when the county of Galway, and other neighbouring parts, were ſo infeſted with this vermin, that the whole face of the country was deſtroyed by them, and the trees ſtripped of their leaves and fruits, as much as in the depth of winter; the poor people, wanting other food, eat the vermin themſelves that had done the miſchief; and the cockchaffers, which are doubtleſs what is meant by Moſes under the name of the beetle, as they are truly of the beetle kind, were found to be a very good and wholeſome food. See the preceding article.

It is very probable alſo that this kind of beetle, ſo famous for devouring the fruits of the earth, is that kind to which the Egyptians paid divine honours, and for which they had ſuch high veneration, that they frequently engraved its figure on their obeliſks; though the antiquaries give a very different account of it, ſuppoſing that the beetle was held ſacred by them, as being an hieroglyphical repreſentation of the ſun. This ſeems a very forced conjecture; whereas nothing can be ſuppoſed more natural than that a nation, addicted to polytheiſm, as the Egyptians were, and in a country frequently ſuffering great miſchief and ſcarcity from ſwarms of devouring inſects, ſhould, from a ſtrong ſenſe and fear of evil to come, give ſacred worſhip to the viſible authors of their ſufferings, in hopes to render them more propitious for the future. The ſame Egyptians, we very well know, worſhipped the other great deſtroyer of their country, the crocodile; and the Romans, a much more civilized people, built a temple to the diſeaſe which raged moſt among them, the fever.

The ignorant people among the Iriſh, when the vaſt ſwarms of theſe beetles firſt appeared among them, were of the ſame turn, and rather reverenced than deſtroyed them; ſaying, that they were the ghoſts of their dead friends killed at the battle of Aghrim, who were come in this form to peſter and annoy their heretical enemies, the Engliſh Proteſtants. They even thought that the Engliſh families ſuffered more by them than the Iriſh; but this was only becauſe the grounds of the former were better improved, and the creatures found plenty of better food there. Phil. Tranſ. N° 234.

SCARABÆUS, in *Conchology*. See HELIX and CONCHOLOGY.

SCARABÆUS, in *Ichthyology*, a name given by Gaza to that ſpecies of ſparus, which is called by others the *cantharus*.

SCARAWAY, in *Geography*, one of the ſmaller Hebrides. N. lat. 57° 39′. W. long. 7° 1′.

SCARBA, or SKARBA, one of the Hebrides, or Weſtern iſlands of Scotland, comprehended in the pariſh of Jura and Colonſay, and county of Argyle, is ſituated at the northern extremity of the iſle of Jura. It is a very rugged and mountainous iſland, about three miles in diameter in every direction. Between it and Jura lies the famous Corryvreckan, or gulf of Breacan, which is no leſs an object of terror to modern navigators, than were Scilla and Charybdis to thoſe of antiquity. It is occaſioned by the concuſſion of oppoſing tides, and in ſtormy weather aſſumes an aſpect of terrible grandeur. The Statiſtical Account of Scotland, by ſir John Sinclair, 8vo. vol. xii. 1794.

SCARBOROUGH, *Sir* CHARLES, in *Biography*, an eminent phyſician and mathematician, was born about the year 1616. After the uſual claſſical education he was admitted of Cains college, Cambridge, in 1632, and took his firſt degree in arts in 1636. He was then elected to a fellowſhip, and commencing A.M. in 1639, he took pupils. In the mean time, intending to purſue medicine as his profeſſion, he applied himſelf to all the preparatory ſtudies neceſſary for that art. Mathematics conſtituted one of theſe ſtudies: and the proſecution of this ſcience having obtained him the acquaintance of Mr. (afterwards biſhop) Seth Ward, then of Emanuel college, they mutually aſſiſted each other in their reſearches. Having met with ſome difficulties in Mr. Oughtred's "Clavis Mathematica," which appeared to them inſuperable, they made a joint viſit to the author, then at his living of Aldbury, in Surry. Mr. Oughtred treated them with great politeneſs, being much gratified to ſee theſe ingenious young men apply ſo zealouſly to theſe ſtudies, and in a ſhort time fully reſolved all their queſtions. They returned to Cambridge complete maſters of that excellent treatiſe, and were the firſt that read lectures upon it there. In the enſuing civil wars, Mr. Scarborough became likewiſe a joint ſufferer with his fellow-ſtudent for the royal cauſe, being ejected from his fellowſhip at Cains. Upon this reverſe of fortune he withdrew to Oxford, and entering himſelf at Merton college, was incorporated A.M. of that univerſity, 23d of June, 1646. The celebrated Dr. Harvey was then warden of that college, and being employed in writing his treatiſe "De Generatione Animalium," gladly accepted the aſſiſtance of Mr. Scarborough. The latter alſo became acquainted with ſir Chriſtopher Wren, then a gentleman commoner of Wadham college, and engaged him to tranſlate "Oughtred's Geometrical Dialling" into Latin, which was printed in 1649.

Upon leaving Oxford, and taking the degree of doctor of phyſic, Dr. Scarborough ſettled in the metropolis, where he practiſed his profeſſion with great reputation. In the College of Phyſicians, of which he was a fellow, he was particularly reſpected as a man of uncommon talents; and, in 1658, by the ſpecial appointment of the preſident, he introduced, with an elegant Latin ſpeech, the marquis of Dorcheſter for his admiſſion into the college that year. In the mean time Dr. Scarborough began to read his highly celebrated anatomical lectures at Surgeons' Hall, which he continued for ſixteen or ſeventeen years, and was the firſt who introduced geometrical and mechanical reaſonings upon the muſcles.

Such extraordinary merit did not eſcape the notice of king Charles II., who conferred on him the order of knighthood in 1669, and at the ſame time appointed him his principal phyſician. He was nominated to the ſame honourable office by his majeſty's brother, which he held both before and after his acceſſion to the throne; and he alſo ſerved king William in the ſame capacity. He was likewiſe appointed phyſician to the Tower of London, and held that office till his death, which occurred in the latter part of the reign of king William, or in the beginning of that of queen Anne. Sir Charles Scarborough was married and left a ſon, who was created doctor of civil law at Oxford, in Auguſt, 1702. In 1705, this gentleman printed in folio, from his father's manuſcript, "An Engliſh Tranſlation of Euclid's Elements, with excellent explanatory Notes." Sir Charles alſo wrote "A Treatiſe upon Trigonometry;" "A Compendium of Lily's Grammar;" and "An Elegy on Mr. Abraham Cowley." Hutchinſon, Biographia Medica.

SCARBOROUGH, in *Geography*, a borough and market-town in the eaſt diviſion of the wapentake of Pickering-Lythe, North Riding of Yorkſhire, England, is ſituated on the coaſt of the Northern or German ocean, at the diſtance of 40 miles north-eaſt from York, and 218 north from London. It is conjectured by Hinderwell, from the etymology of its ancient name, Scearburgh, to have been "a Saxon town on a Roman foundation." If, however, a town really did exiſt previous to the Norman conqueſt, it muſt have ſuffered total deſtruction during the inroads of the Danes, as no mention is made of it in Domeſday book. The firſt authentic record in which it is noticed, is a charter by Henry II., which grants unto the burgeſſes of Eſcardeburgh all the ſame "cuſtoms, liberties, and acquittances, which the citizens of York enjoyed through all the land in the time of Henry I." This charter was confirmed by king John, and alſo by his ſucceſſor, Henry III., who added many new privileges. The ſame was done by Edwards II. and III., Richard II., and every ſucceeding ſovereign down to James I.: and under a charter from the latter, the town is now governed by a corporation, conſiſting of two bailiffs, two coroners, four chamberlains, and thirty-ſix common council-men, claſſed into three benches, or twelves; beſides a recorder, deputy recorder, town-clerk, and inferior officers. Scarborough firſt ſent members to parliament in the reign of Edward I. and has done ſo, with ſcarcely any interruption, ever ſince. The bailiffs are the returning officers. The market-days are Thurſday and Saturday, weekly; and there are two annual fairs, on Holy Thurſday, and the 22d of November.

The old town of Scarborough appears to have occupied much leſs extenſive limits than the modern town, and to have been built cloſe to the ſhore. The reaſon of this is obvious: the former owed its importance to its trade and fiſheries, while the latter is ſupported almoſt entirely by the celebrity of its mineral waters, and the ſalubrity of its ſituation. The earlieſt deſcription we have of this town is in the Itinerary of Leland, vol. i. fol. 66. His words are: "Scardeburg toune, though it be privilegid, yet it ſemith to be yn Pikering-Lithe, for the caſtle of Scardeburgh is countid of the juriſdiction of Pikering, and the ſhore from Scardeburgh to the very point of Philaw bridge by the ſe about a vj miles from Scardeburgh toward Bridlington is of Pikering-Lith juriſdiction. Scardeburgh, wher it is not defendid by a warth and the ſe, is waullid a litle with ſton, but moſt with diches and waulles of yerth. Newburgh gate meately good, and Aldegate very baſe. The toune ſtondith hole on a ſlaty clife; and ſhoith very fair to the ſe ſide. Ther is but one paroche chirch in the town of our Lady joyning almoſt to the caſtelle. It is very faire and is iſled on the ſides and croſs iſlid, and hath 3 auncient towres for bells, with Pyramides of them; wherof 2 toures be at the weſt end of the chirch, and one yn the midle of the croſs iſle. Ther is a great chapelle by ſide of the Newborow Gate. Ther were yn the toun three howſis of Freres, Gray, Blake, and White."

The town of Scarborough ſtands in the receſs of a fine bay, and riſes from the ſhore in the form of an amphitheatre. In the upper town the ſtreets are ſpacious and well paved, and have the advantage of excellent flagged footways on each ſide. The houſes, particularly thoſe in Queen's-ſtreet, Newborough, and Long-Room-ſtreet, have a handſome appearance. The new buildings on the cliff alſo lay claim to the ſame praiſe, and according to Hinderwell are "unrivalled in beauty of ſituation." Theſe buildings, which are chiefly appropriated as lodging-houſes, have in front a fine terrace, elevated nearly a hundred feet above the level of the ſands, and command a variety of delightful proſpects. The ſhops are numerous, and well ſtored with every article of luxury or uſe. In the vicinity are ſeveral gardens with public walks, which for a trifling ſubſcription afford a pleaſant and healthful amuſement. There is alſo an aſſembly room and a theatre, which are open during the ſummer on alternate evenings.

Scarborough, as we are informed by Hinderwell, anciently contained four churches, dedicated reſpectively to St. Nicholas, St. Thomas, St. Sepulchre, and St. Mary. All of them, however, are now demoliſhed, except the laſt, and even of it a ſmall part only remains, and is chiefly of modern erection; but the extent of the old church may yet be traced by an inquiſitive ſpectator. From the deſcription of Leland, before quoted, it appears to have been a ſpacious and magnificent ſtructure. The abbot of the Ciſtercian monaſtery here was rector of it, and the vicar was appointed by him and removable at his pleaſure. There are ſeveral marble monuments in this church, but none of them commemorate perſons of particular note. The diſſenting places of worſhip in Scarborough are, a chapel for Independents, a Baptiſt, and a Roman Catholic chapel, a meeting-houſe for Quakers, and another for Methodiſts.

The aggregate amount of the tonnage of ſhipping belonging to the port is eſtimated at 30,000 tons. The exports are corn, butter, hams, bacon, and ſalt-fiſh; the imports, coals from Newcaſtle and Sunderland, timber, deals, hemp, flax, and iron from the Baltic; brandy and geneva from Holland; wine from Portugal; and groceries and a variety of dreſs articles from London. The harbour is extenſive, and is capable of receiving veſſels of the largeſt tonnage; but its ſituation unfortunately expoſes it to be warped up with ſand. As it is the only haven of conſequence between the Humber and Tynemouth, it is much reſorted to by veſſels navigating this coaſt in ſtormy weather. Fiſh of different kinds are abundant here, and might be rendered a profitable branch of trade. The monaſtic eſtabliſhments in Scarborough were four priories and two hoſpitals. The firſt of theſe priories was founded in the reign of Henry III., for monks of the Ciſtercian order, and continued to ſubſiſt till the general ſuppreſſion of alien houſes, when it was granted to the monaſtery at Bridlington. The ſecond priory, for Franciſcan, or Grey friars, was founded in the ſame reign; as was likewiſe the convent for Dominican, or Black friars. The former was much enlarged by the munificence of Edward II.; and the latter is ſaid to have owed its origin to Henry Percy, earl of Northumberland. The fourth priory was of the Carmelite order, and was founded by the monarch laſt mentioned. The hoſpitals were dedicated to St. Thomas and St. Nicholas, and were both of them built and endowed by the burgeſſes of Scarborough. That of St. Thomas ſtill remains, and is appropriated as an aſylum for aged and infirm perſons. The other charitable inſtitutions in Scarborough are an amicable ſociety, which clothes and educates about ſeventy boys and girls; a ſeaman's hoſpital, erected in 1752, and ſupported by a contribution of ſixpence *per* month paid by the owner of every ſhip belonging to the port, for each perſon on board during the time the ſhip is at ſea, or in actual ſervice; a ſpinning ſchool, inſtituted in 1788, which maintains about twenty girls; alſo ſeveral friendly ſocieties and Sunday ſchools.

The mineral Spa of Scarborough, to which its preſent proſperity is chiefly owing, is ſituated on the ſea-ſhore, cloſe to the ſouthern extremity of the town. It was firſt diſcovered by a Mrs. Farrow in 1620, but no ciſtern for collecting the waters was erected till 1698. After that, however, it rapidly roſe into celebrity, and ſtill continues to maintain its high character for the cure of all ſorts of chronic and cutaneous diſeaſes. There are two wells, one called the ſouth and the other the north well, the waters of which, upon analyſis, have been found to contain the following ingredients.

The ſouth well, or purging water:

	Grains.
Vitriolated magneſia	128
Muriated magneſia	16
Carbonate of lime	28
Carbonate of iron	2.6
Vitriolated lime	58.4
Muriated natron	4
	237

Carbonic acid gas 98 ounces *per* gallon.

The north well, or chalybeate water:

Vitriolated magneſia	98
Muriated magneſia	14
Carbonate	61.5
Carbonate of iron	3
Vitriolated lime	54.4
Muriated natron	2.1
	233

Carbonic acid gas 100 ounces *per* gallon.

The water of the ſouth well has a gentle aperient property; that of the north does not affect the bowels, but paſſes off generally by urine. The latter is conſequently more bracing, and is preferred in all caſes of general weakneſs and relaxation. The Spa is under the management of a ſuperintendant, uſually called the governor, who is appointed by the corporation, and whoſe duties are to receive ſubſcriptions, and to preſerve order. A certain number of poor widows are likewiſe conſtantly in waiting to preſent the water.

The caſtle of Scarborough, the ruins of which occupy the ſummit of a lofty promontory on the eaſt ſide of the town, was built about the year 1136, by William le Gros, earl of Albemarle and Holderneſſe, a nobleman of Norman extraction, who poſſeſſed large eſtates in this vicinity. In the time of Henry II., however, it was ſeized by the monarch, and ever after continued to be a royal fortreſs. Its government was eſteemed an office of ſuch diſtinction, that the appointment was ſolicited by the higheſt nobility and prelates. It was firſt held by Roger, archbiſhop of York; but nothing of importance occurs in its hiſtory till the reign of Edward II., when we find that that monarch's favourite, Piers de Gaveſton, ſought refuge here from the perſecution of the rebellious barons. The earl of Pembroke was diſpatched by the confederates to beſiege the caſtle, which Gaveſton defended for ſome time with great bravery; but he was ultimately compelled to ſurrender from the want of proviſions, and thus fell into the hands of his enemies, by whom he was beheaded, in contravention of the articles of capitulation, and in defiance of the laws of the kingdom, and of the reſpect due to the ſovereign. About ſix years later, Scarborough caſtle was beſieged by the Scots under lord Douglas, who had ſignalized himſelf in many rencounters, but particularly at the battle of Bannockburn. In 1377 Mercer, a daring Scotch pirate, was committed priſoner to this fortreſs, but contrived to effect his releaſe for a trifling ranſom. His ſon, in revenge for the inſult of his father's impriſonment, entered Scarborough harbour, and carried off ſeveral ſhips in triumph.

In the time of the rebellion, uſually denominated the Pilgrimage of Grace, in the year 1536, Scarborough caſtle was beſieged by a part of the fanatical army under Robert Aſhe, but their efforts to reduce it were rendered unavailing by the gallantry of its governor ſir Ralph Eure, or Evers. During Wyatt's rebellion againſt queen Mary, one of his partizans, Mr. Thomas Stafford, ſon of lord Stafford, contrived to make himſelf maſter of this fortreſs by ſtratagem, but he retained poſſeſſion of it only for three days, when it was retaken by the earl of Weſtmoreland, who conveyed the chief priſoners to London, where they were ſhortly after tried and executed for treaſon. Subſequent to this event there are no memorable incidents upon record relative to the caſtle, till the breaking out of the civil war between king Charles I. and his parliament. During that unfortunate period, however, it was twice beſieged and taken by the parliamentary forces. The firſt of theſe ſieges was begun by ſir John Meldrum, on February 18, 1644, and, according to Hinderwell, laſted till July 22, 1645, when the garriſon ſurrendered upon honourable terms to ſir Matthew Boynton, ſir John Meldrum having been killed in an aſſault on the 17th of May previous. Sir Matthew was appointed governor for the parliament, and on his death, in 1647, was ſucceeded by colonel Boynton, who afterwards declared for the king. In conſequence of this the caſtle ſuſtained another ſiege of nearly three months, at the end of which the governor was forced to ſurrender, chiefly in conſequence of the mutinous conduct of the garriſon.

In the year 1745 Scarborough caſtle underwent ſome ſlight repairs, and a conſiderable quantity of military ſtores was depoſited therein. At the ſame time, the ditches which protected the town were cleared out, and nearly 100 pieces of cannon were mounted on different batteries, manned chiefly by ſeamen. At preſent there are two batteries for the protection of the harbour and ſhipping, one on the northern and the other on the ſouthern ſide of the caſtle-yard.

The lofty promontory on which the ruins of the ancient caſtle are ſituated, is bounded on the north, eaſt, and ſouth ſides by the ocean, and riſes nearly three hundred feet, in perpendicular height, above its level. Its weſtern ſide is likewiſe bold and lofty, and completely commands the town and bay by its ſuperior elevation. On this ſide is the only entrance to the area of the caſtle, which contains in all about 15 acres. The firſt approach is through a gateway, within which are the remains of an outwork, anciently called the Barbican. Interior to this outwork is a bridge, thrown over a deep and broad foſſe, and conducting by an eaſy aſcent to the keep tower, a very lofty ſquare building, with an embattled parapet. The walls are twelve feet thick, and caſed with ſquared ſtones; and the mortar, having been applied in a fluid ſtate, has acquired a conſiſtency by age, which renders it as impenetrable and durable as ſtone itſelf. The different ſtories in this ſtructure have been vaulted; and private paſſages are viſible in ſome of the intervals of the caſing of the walls. The windows are formed by ſemi-circular arches, ſupported by round pillars. "The area of the ballium," ſays Hinderwell, "where the tower is ſituated, contains more than half an acre of ground. It is ſeparated from the internal part of the caſtle-yard by a ditch, and a mound ſurmounted with a wall. Near to the weſtern wall, on ploughing out this ground in the year 1783, a pavement of neat ſquare brick was diſcovered, and a fire-place of grit-ſtone. Here was alſo a deep well; but whence it was ſupplied with water cannot at preſent be aſcertained. In the ballium were moſt of the habitable buildings belonging to the caſtle, and adjoining it were the towers mentioned by Leland, containing the queen's lodging. The embattled wall, which has defended and adorned the ſummit of the hill on the weſtern ſide, continues hence to the ſouthern extremity of the caſtle-yard. It is flanked with numerous ſemi-circular turrets, with chinks and openings, whence they diſcharged their arrows and other miſſiles. Theſe are haſtening to decay, and exhibit a ſcene of venerable ruin."

According to the parliamentary returns of 1811, Scarborough contains 1712 houſes, and a population of 7067 perſons, beſides about 500 ſailors.

The vicinity of Scarborough, ſays Hinderwell, is agreeably diverſified with hill and dale, exhibiting a variety of romantic proſpects. To the weſtward the country is highly cultivated, and forms a ſtriking contraſt to the bleak and barren hills on the ſouth and north. The rides in the immediate neighbourhood of the town are truly delightful, particularly that to the weſtward, whence the road gradually aſcends to a terrace elevated 500 feet above the level of the ſea, and commanding views over a vaſt extent of country. From this ſituation the ancient village of Walſgrave, or Falſgrave, is very conſpicuous. It ſtands at the diſtance of about a mile to the weſt of Scarborough, and poſſeſſes a juſt claim to high antiquity, being mentioned in Domeſday book as having belonged to Toſti, earl of Northumberland, previous to the conqueſt. It is alſo ſtated in the ſame work to have had a ſoke or juriſdiction of very conſiderable extent. It is now a townſhip, containing about 500 inhabitants. Seamer, a village ſituated three miles to the ſouth-weſt of the town, formerly enjoyed the privileges of a weekly market and fairs, but the market has been abandoned for many years. Filey is a ſmall fiſhing town on the coaſt, eight miles ſouth of Scarborough, where the herring fiſhery is proſecuted with great ſpirit. Two miles inland thence is Hunmanby, anciently the head of a barony, and a market-town, though now only a village. In the pariſh church is a monument, or cenotaph, in honour of various members of the Oſbaldeſton family, ſome of whom were interred here. It exhibits a full-length figure of Piety, with a palm-branch in her right hand, reſting her foot upon a ſkull, and leaning penſively over an urn.—The Hiſtory and Antiquities of Scarborough and the Vicinity, by Thomas Hinderwell, 4to. York, 1798. Beauties of England and Wales, vol. xvi., by John Bigland, 8vo. 1813.

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SCARDUS Mons, in *Ancient Geography*, the name of a mountain which ſeparated Illyria from Dalmatia and Mœſia, according to Strabo.

SCARE, *Great* and *Little*, in *Geography*, two rocks near the coaſt of Scotland, at the entrance into Luce bay; 6 miles E.N.E. from the Mull of Galloway. N. lat. 54° 44′.

Scare, *The*, a harbour of the county of Wexford, Ireland, near the entrance of which formerly ſtood the town of Bannow, and on the northern part of it the abbey of Tintern. It is now completely choaked by ſand, being fordable at low water, and is ſcarcely acceſſible to fiſhing-boats. Near this earl Strongbow landed on coming to ſubdue Ireland.

Scare-*Crow*, in *Ornithology*, the name of a bird of the larus, or ſea-gull kind, called by authors *larus niger*, or the black gull, and by the Germans *brandvogel* and *meyvogel*. This is the *Sterna fiſſipes* of Linnæus. It is a very long-winged bird, and of the ſize of the common blackbird; the head, neck, breaſt, and belly, as far as the vent, are black; beyond it white; the male has a white ſpot under its chin; the back and wings are of a deep aſh-colour; the tail is ſhort and forked; its legs are ſhort and red. It is common about the ſea-coaſts, and feeds on inſects and ſmall fiſh. It is a well-taſted bird.

Theſe birds frequent freſh waters; breed on their banks, and lay three ſmall eggs of a deep olive colour, much ſpotted with black. They are found, during ſpring and ſummer, in vaſt numbers, in the fens of Lincolnſhire, where they make an inceſſant noiſe. Birds of this ſpecies are alſo ſeen very remote from land. Pennant.

SCARENA, in *Geography*, a town of France, in the department of the Maritime Alps, and chief place of a canton, in the diſtrict of Nice. The place contains 1177, and the canton 7232 inhabitants, on a territory of 70 kiliometres, in 10 communes; 6 miles N.E. of Nice.

SCAREWALSH Bridge, a village of the county of Wexford, Ireland, which gives name to one of the baronies. It has a bridge over the river Slaney; 4 miles S.W. from Ferns.

SCARFED, in the *Sea Carpenter's Language*, is the ſame as pieced, or faſtened, or joined in, and denotes a particular method of uniting two pieces of timber together by the extremities.

When two pieces of timber are joined together, ſo that the end of one goes over the end of the other, being tapered ſo that the one may be let into the other, and become even, they are ſaid to be *ſcarfed:* ſuch are the heel-pieces. But when the ends of the two pieces are cut ſquare, and put together, they are ſaid to butt to one another; and when another piece is laid upon and faſtened to both, as is the caſe in all the frame-timbers, this is called *ſcarfing* the timber; and half the piece which faſtens the two timbers together, is reckoned the length of the ſcarf. Murray on Ship-Building, p. 192.

SCARI, in *Ancient Geography*, a town of Aſia, in Lycia, with a fountain of the ſame name.

SCARIFF, in *Geography*, a poſt-town of Ireland, in the county of Clare, ſituate on a ſmall river, which falls into Lough Deirgeart, an expanſe of the river Shannon, two or three miles below this town. It is 93½ miles W. by S. from Dublin, and about 10 miles N. by W. from Killaloe.

Scariff, or *Scarav*, the largeſt of the Hog Iſlands, in the Atlantic ocean, W. of Lamb's-Head, in the county of Kerry, Ireland. It is a high mountain in the ocean, and has one family reſident on it, who take care of ſome cows, and make a conſiderable quantity of butter. On the top of the higheſt ground is a ruined hermitage.

SCARIFICATION, in *Surgery*, the operation of making little cuts or punctures, in parts, for the purpoſe of taking away blood topically; dividing enlarged veſſels tending to an inflamed part; letting fluid out of the cellular membrane in dropſical caſes; or air, in examples of emphyſema.

SCARIFICATOR, a chirurgical inſtrument, uſed in ſcarification.

The ſcarificator is made in form of a box, in which are fitted ten, twelve, or ſixteen lancets, all perfectly in the ſame plane; which being, as it were, cocked, by means of a ſpring, are all diſcharged at the ſame time, by pulling a kind of trigger, and driven equally within the ſkin. Till of late they uſed little ſharp cutting wheels, inſtead of lancets.

The uſe of the ſcarificator is to evacuate the blood, and other humours, ſpread under the ſkin, by making a great number of apertures, or outlets, in it; which, being all ſtruck at once, give much leſs pain than when ſtruck ſucceſſively. See Cupping.

Scarificator, in *Agriculture*, a name ſometimes applied to a tool of the ſcarifying kind. See the next article.

SCARIFIER, an implement ſomewhat of the hoe kind, made uſe of both on lands in the ſtate of tillage and thoſe under graſs, when intended for the latter, being ſomewhat differently conſtructed, and having frequently the names of ſward-cutters or dreſſers applied to them. See Sward-*Dreſſer*.

Theſe ſorts of implements in the cultivation of tillage-land, have lately been found of conſiderable advantage for the purpoſe of working over, cutting up, breaking the earth, and clearing it to a good depth. They are made in different forms and conſtructions to ſuit different uſes, and have from ſeven to thirteen or more teeth fixed into wooden bulls, and which are ſometimes furniſhed with a ſort of triangular feet formed of thin iron, ſo as to be ſteeled, and kept quite ſharp on the edges, which are five or ſix inches in length on each ſide; they are likewiſe, in ſome caſes, provided with low wheels, but in others are wholly without them, and are of courſe leſs expenſive in the conſtruction. They have in general a pair of handles fixed on behind, by which they are directed in their working, being raiſed or depreſſed by the preſſure of the hand. It is proper to have them ſo formed as to work to a good depth, without being eaſily thrown out of the ground by ſuch obſtructing ſubſtances as they may meet with. It was formerly ſuppoſed that a great number of teeth were neceſſary, but it has been found by later experience that they work better where their teeth or hoes are fewer. The number ſhould, however, perhaps be proportioned in ſome meaſure to the ſtate of the land in reſpect to cleanneſs, cultivation, and tenacity. The author of the "Experienced Farmer" has adviſed, that where the land is foul from couch ſods, or any other cauſe, the number of teeth or hoes ſhould be reduced to five or ſeven, two or three being placed in the fore-bull, and four in the hindermoſt, increaſing them to nine as the land becomes in a fine condition.

An implement of this ſort, which has been lately much recommended, has the convenience of a chain and hook to draw it by, with a wheel or roller to ſteady it, and give it any depth that may be required. The claws or teeth have ſcrews and nuts to faſten them in with, that they may be and fairs, but the market has been abandoned for many years. Filey is a ſmall fiſhing town on the coaſt, eight miles ſouth of Scarborough, where the herring fiſhery is proſecuted with great ſpirit. Two miles inland thence is Hunmanby, anciently the head of a barony, and a market-town, though now only a village. In the pariſh church is a monument, or cenotaph, in honour of various members of the Oſbaldeſton family, ſome of whom were interred here. It exhibits a full-length figure of Piety, with a palm-branch in her right hand, reſting her foot upon a ſkull, and leaning penſively over an urn.—The Hiſtory and Antiquities of Scarborough and the Vicinity, by Thomas Hinderwell, 4to. York, 1798. Beauties of England and Wales, vol. xvi., by John Bigland, 8vo. 1813.

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SCARDAMULA, a town of European Turkey, in the Morea, near the gulf of Coron.

SCARDONA, a town of European Turkey, in Dalmatia, the ſee of a Greek biſhop, ſurrounded with walls, and defended by two forts. It was formerly the place in which the eſtates of Liburnia aſſembled, and the moſt celebrated town of Liburnia, ſituated on the left of the mouth of the Tiluris. It was bought by the Venetians in 1411, and taken from them by the Turks in 1522; 28 miles N. of Trau. N. lat. 44° 28′. E. long. 16° 20′.

SCARDUS Mons, in *Ancient Geography*, the name of a mountain which ſeparated Illyria from Dalmatia and Mœſia, according to Strabo.

SCARE, *Great* and *Little*, in *Geography*, two rocks near the coaſt of Scotland, at the entrance into Luce bay; 6 miles E.N.E. from the Mull of Galloway. N. lat. 54° 44′.

Scare, *The*, a harbour of the county of Wexford, Ireland, near the entrance of which formerly ſtood the town of Bannow, and on the northern part of it the abbey of Tintern. It is now completely choaked by ſand, being fordable at low water, and is ſcarcely acceſſible to fiſhing-boats. Near this earl Strongbow landed on coming to ſubdue Ireland.

Scare-*Crow*, in *Ornithology*, the name of a bird of the larus, or ſea-gull kind, called by authors *larus niger*, or the black gull, and by the Germans *brandvogel* and *meyvogel*. This is the *Sterna fiſſipes* of Linnæus. It is a very long-winged bird, and of the ſize of the common blackbird; the head, neck, breaſt, and belly, as far as the vent, are black; beyond it white; the male has a white ſpot under its chin; the back and wings are of a deep aſh-colour; the tail is ſhort and forked; its legs are ſhort and red. It is common about the ſea-coaſts, and feeds on inſects and ſmall fiſh. It is a well-taſted bird.

Theſe birds frequent freſh waters; breed on their banks, and lay three ſmall eggs of a deep olive colour, much ſpotted with black. They are found, during ſpring and ſummer, in vaſt numbers, in the fens of Lincolnſhire, where they make an inceſſant noiſe. Birds of this ſpecies are alſo ſeen very remote from land. Pennant.

SCARENA, in *Geography*, a town of France, in the department of the Maritime Alps, and chief place of a canton, in the diſtrict of Nice. The place contains 1177, and the canton 7232 inhabitants, on a territory of 70 kiliometres, in 10 communes; 6 miles N.E. of Nice.

SCAREWALSH Bridge, a village of the county of Wexford, Ireland, which gives name to one of the baronies. It has a bridge over the river Slaney; 4 miles S.W. from Ferns.

SCARFED, in the *Sea Carpenter's Language*, is the ſame as pieced, or faſtened, or joined in, and denotes a particular method of uniting two pieces of timber together by the extremities.

When two pieces of timber are joined together, ſo that the end of one goes over the end of the other, being tapered ſo that the one may be let into the other, and become even, they are ſaid to be *ſcarfed:* ſuch are the heel-pieces. But when the ends of the two pieces are cut ſquare, and put together, they are ſaid to butt to one another; and when another piece is laid upon and faſtened to both, as is the caſe in all the frame-timbers, this is called *ſcarfing* the timber; and half the piece which faſtens the two timbers together, is reckoned the length of the ſcarf. Murray on Ship-Building, p. 192.

SCARI, in *Ancient Geography*, a town of Aſia, in Lycia, with a fountain of the ſame name.

SCARIFF, in *Geography*, a poſt-town of Ireland, in the county of Clare, ſituate on a ſmall river, which falls into Lough Deirgeart, an expanſe of the river Shannon, two or three miles below this town. It is 93½ miles W. by S. from Dublin, and about 10 miles N. by W. from Killaloe.

Scariff, or *Scarav*, the largeſt of the Hog Iſlands, in the Atlantic ocean, W. of Lamb's-Head, in the county of Kerry, Ireland. It is a high mountain in the ocean, and has one family reſident on it, who take care of ſome cows, and make a conſiderable quantity of butter. On the top of the higheſt ground is a ruined hermitage.

SCARIFICATION, in *Surgery*, the operation of making little cuts or punctures, in parts, for the purpoſe of taking away blood topically; dividing enlarged veſſels tending to an inflamed part; letting fluid out of the cellular membrane in dropſical caſes; or air, in examples of emphyſema.

SCARIFICATOR, a chirurgical inſtrument, uſed in ſcarification.

The ſcarificator is made in form of a box, in which are fitted ten, twelve, or ſixteen lancets, all perfectly in the ſame plane; which being, as it were, cocked, by means of a ſpring, are all diſcharged at the ſame time, by pulling a kind of trigger, and driven equally within the ſkin. Till of late they uſed little ſharp cutting wheels, inſtead of lancets.

The uſe of the ſcarificator is to evacuate the blood, and other humours, ſpread under the ſkin, by making a great number of apertures, or outlets, in it; which, being all ſtruck at once, give much leſs pain than when ſtruck ſucceſſively. See Cupping.

Scarificator, in *Agriculture*, a name ſometimes applied to a tool of the ſcarifying kind. See the next article.

SCARIFIER, an implement ſomewhat of the hoe kind, made uſe of both on lands in the ſtate of tillage and thoſe under graſs, when intended for the latter, being ſomewhat differently conſtructed, and having frequently the names of ſward-cutters or dreſſers applied to them. See Sward-*Dreſſer*.

Theſe ſorts of implements in the cultivation of tillage-land, have lately been found of conſiderable advantage for the purpoſe of working over, cutting up, breaking the earth, and clearing it to a good depth. They are made in different forms and conſtructions to ſuit different uſes, and have from ſeven to thirteen or more teeth fixed into wooden bulls, and which are ſometimes furniſhed with a ſort of triangular feet formed of thin iron, ſo as to be ſteeled, and kept quite ſharp on the edges, which are five or ſix inches in length on each ſide; they are likewiſe, in ſome caſes, provided with low wheels, but in others are wholly without them, and are of courſe leſs expenſive in the conſtruction. They have in general a pair of handles fixed on behind, by which they are directed in their working, being raiſed or depreſſed by the preſſure of the hand. It is proper to have them ſo formed as to work to a good depth, without being eaſily thrown out of the ground by ſuch obſtructing ſubſtances as they may meet with. It was formerly ſuppoſed that a great number of teeth were neceſſary, but it has been found by later experience that they work better where their teeth or hoes are fewer. The number ſhould, however, perhaps be proportioned in ſome meaſure to the ſtate of the land in reſpect to cleanneſs, cultivation, and tenacity. The author of the "Experienced Farmer" has adviſed, that where the land is foul from couch ſods, or any other cauſe, the number of teeth or hoes ſhould be reduced to five or ſeven, two or three being placed in the fore-bull, and four in the hindermoſt, increaſing them to nine as the land becomes in a fine condition.

An implement of this ſort, which has been lately much recommended, has the convenience of a chain and hook to draw it by, with a wheel or roller to ſteady it, and give it any depth that may be required. The claws or teeth have ſcrews and nuts to faſten them in with, that they may be taken out with eaſe if it be neceſſary to repair them, or to increaſe or diminiſh their number. The handles by which the ſcarifier is worked are made firm and ſtrong. The bolts paſſing through the two croſs-bars to let the roller up and down are alſo ſtrong. A hammer and wrench are neceſſary, in order to ſcrew the nuts on the claws or teeth. In the three bulls which form the machine, the fore one has plates at each corner to ſtrengthen them, and the two hinder ones have iron plates at the top and bottom for ſtrength alſo, and to keep the claws from wearing the holes wider than they ought to be. There are two caps to keep the bulls together in a tight manner. There are croſs-bars alſo to ſtrengthen the bulls and fix the roller in its place. It is obſerved, that the chain by which this ſcarifier is drawn, enables the perſon that holds it to work it better, than if it were drawn by a beam like a plough, and occaſions alſo leſs draught by the power being nearer to the claws : the machine goes more freely than it would if ſome of the claws were in the fore-bull, the ſole uſe of that bull being to draw by. When this ſcarifier was made in a triangular form, and with the ſame number of claws, it was apt to go on its head ; or by raiſing the hindmoſt claws out of the ground, to work frequently at one corner only. The claws are formed at the bottom with a point, ſo as to puſh a ſtone out of the way before the broad part can meet with any obſtruction, which makes the machine cut with much greater eaſe. As to their width at the foot, they may be made to cut all the land more clearly than a plough, if required, where thiſtles, fern, &c. grow, and the claw is ſo formed by its crooked direction as to raiſe every obſtruction to the top, rock excepted.

Sometimes another implement of the ſame kind is formed purpoſely to ſcarify and hoe wheat on four-furrow work. It is made from a double mould-boarded foot hoe-plough, and was the invention of the Rev. Mr. Prieſt, of Scarning in Norfolk. Upon the beam of this *hoe-plough* are fixed two ſcarifiers, or hoes, as they are wanted. There is likewiſe a ſmall iron bolt, with a nut and ſcrew at one end, fixed into a cap upon the beam, to be taken out at pleaſure. At each end of this bolt is fixed a chain two feet long, and hooked to plates of iron. Theſe plates are flat, and eight and a half inches long, two and a half broad, and moveable upon ſtaples faſtened into the beam. Upon the ends of theſe flat plates of iron are fixed two pieces of wood, of a parallelepiped form, two feet three inches long, two and a half broad, and two and a half thick, which are moveable by means of hooks (upon the wood of the ſame breadth as the iron-plates), and eyes upon the iron-plates ; the points of which mark the diſtances to which the expanding mould-boards are opened, *viz.* about ten inches from one to the other. At the proper diſtances beyond theſe points are cut grooves through the parallelepiped pieces of wood for the ſcarifier and hoes to be fixed in : and there are two flat pieces of iron three feet long, two inches broad, and half an inch thick, paſſing through grooves in each parallelepiped, and in the grooves through which they paſs are ſcrews to faſten them. Theſe irons do not communicate with the beam of the plough. At two points, on each ſide of the beam, are hung weights, ſuch as may be neceſſary to make the ſcarifiers or hoes to do their work properly. It may be noticed, that the ſcarifiers and hoes are nearly the ſame as thoſe uſed upon all implements of this kind. But there are many other implements of this nature. Mr. Cook has invented a tillage ſcarifier, which conſiſts of a diagonal beam, in which are fixed a number of narrow ſhares or hoes. This tool is capable of being wrought with broad triangular ſhares, when it has the title of a *ſcuffler* ; and when the whole is complete with the different ſhares, it is denominated a *cultivator*.

An uſeful tool of this kind has been deſcribed, with a figure, in the Agricultural Report for the County of Suffolk, by the Rev. Mr. Lewis of Thorndon, who obſerves, that a Mr. Hayward, of Stoke-Aſh, in that neighbourhood, has invented a machine for deſtroying weeds, and clearing ploughed lands for ſeed, which, by the experience of four years, is found more effectual than any other inſtrument hitherto uſed for that purpoſe. Having lately the opportunity of ſpeaking to Mr. Hayward concerning it, he inquired whether he would apply for a patent, or take any method to make it public ? Upon his replying in the negative, he requeſted his permiſſion to take a plan and deſcription of it ; which he has incloſed, and begs leave to ſubmit it to the inſpection of the Agricultural Society of that diſtrict, as the ſpeedieſt mode of introducing to univerſal practice an inſtrument ſo eſſentially ſerviceable to farmers. The extirpator, or the ſcalp-plough, as it is generally termed, is drawn by two or three horſes, according to the quality of the ſoil, and the depth you put it to. The land ſhould be once ploughed over before this inſtrument be uſed. If it has laid a ſummer fallow, the uſual way is to work it twice over with the extirpator, about two inches deep at the firſt, and about four inches deep, and croſs-ways at the ſecond time, which, with running a harrow once over, will not only effectually deſtroy all weeds ; but alſo render it very fine, and ready for the drill or ſowing. Lands being ploughed in autumn, and intended for ſpring crops, are by this inſtrument prepared for ſeed, it is ſaid, better than by any other method ever tried in this country. It will work in all lands, and may be handled by any perſon that knows how to manage a plough. It will eaſily ſcarify or plough one acre *per* hour, and not in the leaſt diſtreſs the horſes. A farmer aſſured him that he could with three horſes work up ſixty acres *per* week with it ; and that a perſon having the extirpator, may, with only three horſes, farm as much land as would, without it, require ſix horſes. It is not cuſtomary in this part of the country to work oxen, but he is confident it will anſwer the ſame purpoſe where oxen are uſed. It is adviſeable to work all lands that are over-run with weeds, twice over. Some lands may poſſibly require three times dreſſing. Some time ſhould elapſe, for the weeds that are cut to die, before it is ſcarified or ploughed a ſecond time. It is now adopted, he ſays, by moſt farmers in that neighbourhood ; and its great utility will be atteſted by every perſon that has uſed it. Many, whoſe prejudices againſt every novelty induced them at firſt to ridicule the idea, are now as warm in praiſing it, and acknowledge it to be the greateſt improvement in agriculture they have ever witneſſed.

Beſides theſe, a great number of ſcarifiers of other kinds have been invented and contrived ſo as to ſuit different practical purpoſes and applications in the buſineſs of tillage, as may be ſeen in various works on agriculture lately publiſhed.

SCARIFYING, the operation of working lands by means of ſcarifiers. In this way the ground, when under tillage, is broken down and reduced into fine order, as well as freed from roots and other weeds, and the uſe of the plough rendered leſs neceſſary. It is an uſeful proceſs in caſes of the heavier ſort of turnip ſoils, in rendering the ſurface, which has been acted upon by froſts in winter, fine and mellow in the ſpring for the ſowing of barley or other grain crops, without having recourſe to the plough, which, in ſuch caſes, is apt to turn down the fine pulverized ſurface-mould, and bring up the ſterile clung bottom, and thereby afford a leſs favourable bed for the reception of the ſeed than was previouſly provided. The improved ſyſtem in ſuch inſtances is therefore to apply this practice in the place of ploughing. In this buſineſs the implements muſt be ſuited to the nature of the work and ridges. That of Mr. Cook with a caſt-iron beam, or any other that is heavy enough, may be employed, the horſes walking only in the furrows, without any trampling of the land. In this operation the earth ſhould always be ſtirred to the full depth that the plough has gone, whether it be four, five, or more inches. The mould is of courſe well looſened and broken. And in order to effect the work in a perfect manner, in ſome caſes the operation may be required two or three times, eſpecially where the land is of the more tenacious kind. Where the teeth or hoes are ſo fixed in the bulls of the tool that is made uſe of in the proceſs, as to cut at certain diſtances in every direction, almoſt the whole of the ſoil may be ſtirred in the execution of the work.

And in various caſes, where lands have undergone one ploughing, they may be rendered afterwards perfectly fine and clean, by having recourſe to proper ſcarifying. This is a ſort of tillage which has lately gained much ground in different arable diſtricts, and which in various inſtances may ſave much in rendering the more expenſive practice of ploughing unneceſſary. It may likewiſe be obſerved, that the proceſs of ſcarifying, or cutting over the ſurface of graſs-lands, has been aſſerted to be a practice of conſiderable utility in the improvement of the ſward of ſuch ſorts of land, particularly where they have manure applied immediately afterwards. See SWARD-*dreſſer*.

SCARIFYING *Machine*, an implement made uſe of for the purpoſe of ſcarifying land. See SCARIFIER.

SCARLATINA FEBRIS. See *Scarlet* FEVER.

SCARLATTI, ALESSANDRO, IL CAVALIERE, in *Biography*, born at Naples in 1650, but ſtudied at Rome under Cariſſimi. He was, however, the founder and ſupport of the Neapolitan ſchool of counterpoint. The firſt dramatic compoſition of this elegant, profound, and original compoſer, was "L'Oneſta negl' Amore," 1680. This great maſter has many titles to a durable fame, not only for his numerous operas and exquiſite cantatas, which are ſtill as much ſought by the curious, as, during his life, they were by the public at large, but for eſtabliſhing the fame of the Neapolitan ſchool of counterpoint, which has ſince been ſo fertile in great muſicians, among whom his admirable ſon, Domenico Scarlatti, and his elegant ſcholar, Adolfo Haſſe, detto il Saſſone, are diſtinguiſhed by all the lovers of muſic, who are able to ſeparate original genius from froth and bombaſt; and taſte, propriety, and exquiſite ſenſibility, from noiſe and Gothic barbariſm. The early production of Scarlatti was performed in the palace of Chriſtina, queen of Sweden, who, after her abdication in 1654, had choſen Rome for the place of her reſidence, where ſhe died 1688.

We found in the archives of la Chieſa Nuova at Rome, a manuſcript oratorio, compoſed by Aleſſandro Scarlatti, to which there is an admirable overture, in a ſtyle totally different from that of Lulli, which, at this time, was the general model for all Europe. The modulation and expreſſion of the recitatives, many of which are accompanied with interſtitial ſymphonies, are admirable, and ſuch as might be expected from a man of his original, bold, and cultivated genius, who always diſdained inſipidity, and the common paſſages of the times. The airs are almoſt all pathetic, as the ſubject required, and richly accompanied.

He was the moſt voluminous and moſt original compoſer of cantatas that has ever exiſted in any country to which our inquiries have extended: indeed this maſter's genius was truly creative; and we find part of his property among the ſtolen goods of all the beſt compoſers of the firſt forty or fifty years of the laſt century. Of this fertile muſician's cantatas we were ſo fortunate, when at Rome, as to purchaſe an original manuſcript, containing thirty-five in his own hand-writing, that were chiefly compoſed at Tivoli, during a viſit to Andrea Adami, maeſtro di cappella to the pope, and author of "Oſſervazioni per ben regolare il Coro de i Cantori della Cap. Pontif.," publiſhed at Rome, 1711. Each of theſe cantatas is dated; by which we learn that he frequently produced one every day for ſeveral days together, and that the whole number was compoſed between the month of October, 1704, and March, 1705.

The violoncello or viol di gamba parts of many of his cantatas were ſo excellent, that whoever was able to do them juſtice was thought a ſupernatural being. Geminiani uſed to relate, that Franceſchelli, a celebrated performer on the violoncello at the beginning of the laſt century, accompanied one of theſe cantatas at Rome ſo admirably, while Scarlatti was at the harpſichord, that the company, being good Catholics, and living in a country where miraculous powers have not yet ceaſed, were firmly perſuaded it was not Franceſchelli who had played the violoncello, but an angel that had deſcended and aſſumed his ſhape.

Durante, his diſciple, after his deceaſe, formed ſeveral of his cantatas into duets of the moſt learned, expreſſive, and curious kind, which the greateſt maſters now living continue to ſtudy, and teach to their favourite and moſt accompliſhed ſcholars.

Of more than three thouſand cantatas, which Aleſſandro Scarlatti compoſed, and of which he was himſelf author of the words to a great number, none have ever, to our knowledge, been printed, except one book mentioned by Walther, that was publiſhed at Amſterdam, under the title of "Cantate a una e due Voci;" nor of his other vocal productions, except a book of "Motetti a una, due, tre, e quattro Voci con Violini," printed likewiſe at Amſterdam: but theſe are now become more ſcarce than manuſcripts.

There is a madrigal of the elder Scarlatti's compoſition for four ſopranos, and a contralto for baſe, inſerted in the ſecond part of Padre Martini's "Saggio di Contrappunto," which ſurpaſſes in art and ingenuity all the compoſitions of that kind which we have ſeen. The expreſſion of the words and paſſages of imitation are ſtill elegant and new.

The opera of "Pyrrhus and Demetrius," performed at our lyric theatre in 1708, the firſt in which Nicolini ſung in England, was compoſed by Aleſſandro Scarlatti; and ſix concertos for the church were printed in London, by Benjamin Cook, in New-ſtreet, Covent-Garden, early in the laſt century: but when they were compoſed, it is not eaſy to diſcover. They were too grave, perhaps, for ſecular uſe; but the fugues, harmony, and modulation, are very fine. He compoſed 109 operas, beſides maſſes and oratorios; and it was the opinion of Haſſe and Jomelli, that his compoſitions for the church, though but little known, were the beſt of his productions, and perhaps the beſt of the kind. He was the firſt who accompanied recitative with two violins and a tenor, beſides the violoncello and harpſichord; but the interſtitial ſymphonies, or ritornelli, in ſcenes of great intereſt, were firſt introduced by Rinaldo di Capua.

He continued writing for the ſtage to the laſt year of his life. In 1707, "Il Trionfo della Liberta," for Venice; 1712, "Ciro," for Rome; 1713, "Mitridate Eupatore," for Reggio; 1716, "Carlo Re d'Allemagna," for Naples; 1718, "Telemaco," for Rome; 1720, "Turno Aricino, for Rome; and in 1724, "Marco Attilio Regolo," for Bologna.

He died at Rome the latter end of 1725. He was appointed maeſtro di cappella, and knighted, by Chriſtina, queen of Sweden. One of his ſons, whom we found out at Rome, but in great indigence, obſerving that we were very curious concerning his father and brother Domenico, gave us the patent of his father's knighthood.

Scarlatti, Domenico, ſon of the Cavaliero Aleſſandro, the moſt illuſtrious, original, fanciful, and powerful performer on the harpſichord in Europe, during the early part of the laſt century. After ſtudying ſome time with his father at Naples, he was placed under Gaſparini at Rome; and after compoſing ſeveral ſucceſsful operas for that city, his fame as a harpſichord-player having extended to Liſbon, he was invited thither to inſtruct the infanta; with whom, when that princeſs was married to the prince of Aſturias, he went into Spain, where he continued in great favour during the reſt of his life. His two firſt books of Leſſons were compoſed for his patroneſs, the princeſs of Aſturias, afterwards queen of Spain, and firſt printed in large folio at Venice, and dedicated to his royal patroneſs. Roſeingrave was the editor of the Engliſh edition, who having met with him in Italy, was enthuſiaſtically attached to him and his works. See Roseingrave.

On his return to England, he brought over his opera of "Narciſſus," had it executed at the Opera-houſe, and conducted the performance.

The Leſſons of M. Scarlatti were in a ſtyle ſo new and brilliant, that no great or promiſing player acquired notice of the public ſo effectually by the performance of any other muſic. Kelway kept them in conſtant practice; Worgan played no other muſic, except his own. In ſhort, every one played, or tried to play, Scarlatti's.

From ſir Benjamin Keene and M. l'Augier, the imperial phyſician at Vienna, we obtained much information concerning Scarlatti and Farinelli, during their reſidence in Spain. M. l'Augier, an excellent judge of every ſpecies of muſic, was intimately acquainted with Scarlatti, who, at 73, compoſed expreſsly for him a great number of harpſichord leſſons, among which there were ſeveral ſlow movements, of which kind there was not one in the two volumes publiſhed by Roſeingrave. They were compoſed in 1756, when Scarlatti was too corpulent to croſs his hands as he uſed to do; ſo that theſe are not ſo difficult as his more juvenile works, which were compoſed for the queen of Spain, when infanta of Portugal, and princeſs of Aſturias. Scarlatti frequently told M. l'Augier, that he was ſenſible he had broke through all the rules of compoſition in his leſſons; but aſked if his deviations from theſe rules offended the ear? and, upon being anſwered in the negative, he ſaid, that he thought there was ſcarce any other rule, worth the attention of a man of genius, than that of not diſpleaſing the only ſenſe of which muſic is the object.

There are many paſſages in Scarlatti's pieces, in which he imitated the melody of tunes ſung by carriers, muleteers, and common people. He uſed to ſay, that the muſic of Alberti, and of ſeveral other modern compoſers, did not in the execution want a harpſichord, as it might be equally well, or perhaps better, expreſſed by any other inſtrument; but as nature had given him ten fingers, and as his inſtrument had employment for them all, he ſaw no reaſon why he ſhould not uſe them. See l'Augier.

Farinelli informed us, that Domenico Scarlatti, an agreeable man in ſociety, was ſo much addicted to play, that he was frequently ruined, and as frequently relieved in his diſtreſſes by his royal patroneſs, the queen of Spain, who was conſtant in her admiration of his original genius and incomparable talents. He died in 1758, at 76, in very bad circumſtances, leaving a wife and two daughters totally unprovided of a ſubſiſtence; but the queen extended her liberality to the family of her old maſter, and ſettled a penſion upon them, nearly equal to Scarlatti's own court appointment. He had been knighted in Portugal before he went to Spain, where he was always in great favour with Ferdinand VI.

Scarlatti, Giuseppe, grandſon of Aleſſandro Scarlatti, born at Naples in 1718, and brought up to muſic. He went at an early age to Vienna, where he gained a great name by his compoſitions for the theatre, as well as for the harpſichord. He died in that city in 1776. His works are diſtinguiſhed by a light and pleaſing ſtyle, peculiar to the Scarlatti family. He ſet, in 1747, "Pompeo in Armenia;" in 1752, "Adriano in Siria;" in 1754, "Ezio;" and for Venice, the ſame year, "L'Effetti della gran Madre Natura;" in 1756, "De Guſtibus non eſt diſputandum;" for the ſame place, and in the ſame year, "Chitutto abbraccia nulla Stringe;" in 1757, "Il Mercato di Malmantile," which was much applauded; ſame year, "L'Iſola diſabitata," for Vienna; "Icipile;" "Narciſo;" in 1759, "La Serva ſcaltra;" and in 1760, "La Clemenza di Tito."

SCARLET, in *Dyeing*, one of the ſix kinds of good reds. See Red, Colour, and Dyeing.

Menage derives the word from the barbarous Latin *ſcarleta*, or *ſcarletum*; which he deduces farther from the German *ſcharlach*, or the Flemiſh *ſcarlaken*; whence the Engliſh have formed *ſcarlet*, the Italians *ſcarlato*, and the French their *eſcarlate*. Others derive it from the Celtic *ſcuarlera*. Dalechampius will have it called *ſcarlatum*, by corruption, for *caſculiatum*, a barbarous word introduced into Spain; others fetch it from the Arabic *yxquerlate*.

There are two kinds of ſcarlet; the one given with kermes, or ſcarlet-grain; the other with cochineal. See Bow-*Dye*.

Scarlet *Bean*, in *Gardening*, the common name of a plant of the kidney bean kind. See Phaseolus.

Scarlet *Cardinal Flower*. See Lobelia.

Scarlet *Convolvulus*. See Ipomæa.

Scarlet *Horſe Cheſnut*. See Pavia.

Scarlet *Jaſmin*. See Bignonia.

Scarlet *Lupin*. See Lathyrus.

Scarlet *Lychnis*. See Lychnis.

Scarlet *Oak*. See Quercus.

Scarlet *Sparrow*, in *Ornithology*. See Tanagra *Rubra*.

SCARLINO, in *Geography*, a town of Etruria; 9 miles S. of Maſſa.

SCARNAFIGI, a town of France, in the department of the Stura; 22 miles S. of Turin.

SCARO, a town and capital of the iſland of Santorin, in the Grecian Archipelago. N. lat. 36° 28′. E. long. 25° 26′.

SCAROON, a lake of Waſhington county, New Jerſey; 491 miles from Waſhington.

SCARP, one of the Hebrides, or Weſtern iſlands, is ſituated at the entrance of Loch Reſort, which forms part of the boundary between Harris and Lewis. It conſiſts of one lofty compact mountain, whoſe baſe meaſures about nine miles in circumference. It is ſeparated from Harris by the Sound of Scarp, which is nearly a mile broad at high water. Sinclair's Statiſtical Account of Scotland, vol. x. 8vo. 1794.

Scarp, in *Fortification*, the interior ſlope of the ditch of a place; that is, the ſlope of that ſide of a ditch which is next to the place, and faces the champaign.

The ſcarp commences from the liziere, or foot of the rampart. The ſcarp is oppoſite to the *counterſcarp*, which is the other ſide of the ditch.

Scarp is alſo a term in *Heraldry*, probably derived from the French *eſcharpe*, ſignifying the ſcarf which military commanders wear for ornament.

It is borne ſomething like a battoon ſiniſter; but is broader, and is continued out to the edges of the field; whereas the battoon is cut off at each end. He beareth argent a ſcarp azure.

SCARPANTO, in *Geography*, an iſland in the Mediterranean, 18 miles long and 6 wide, anciently called *Carpathos;* which ſee. It is generally mountainous and rocky, and has ſeveral quarries of marble. Its principal town on the weſt coaſt has a good harbour. The iſland is ſubject to the Turks, and the principal inhabitants are Greek Chriſtians. N. lat. 35° 44′. E. long. 26° 50′.

SCARPE, a river of France, which riſes near Aubigny, in the department of the Straits of Calais, paſſes by Douay, St. Amand, &c. and runs into the Scheldt at Mortagne; 7 miles S.S.E. of Tournay.

SCARPERIA, a town of Etruria, celebrated for its manufacture of ſteel; 13 miles N. of Florence.

SCARPHE′, in *Ancient Geography*, a town of Greece, according to Pauſanias, on the confines of the territory of the Orchomenians.

SCARPONNA, or Scarpona, a fortified place in Gallia Belgica, according to Diodorus Siculus. In the Itinerary of Antonine, it is marked on the route from Durocortorum to Divodurum, between Tullum and Divodurum. It is mentioned in hiſtory, on occaſion of the victory gained by Juſtinus, general of cavalry, over the Alemanni, in the year 336. It is the preſent village of Charpagne, on the Moſelle.

SCARRON, Paul, in *Biography*, was born at Paris in 1611. His father obliged him, againſt his own inclination, to enter into the eccleſiaſtical ſtate. At the age of 24 he viſited Italy, where he freely indulged in licentious pleaſures. After his return to Paris he perſiſted, notwithſtanding the habit which he wore, in a life of diſſipation, till a long and painful diſeaſe convinced him that his conſtitution was completely undermined. In the year 1638 he was attending the carnival at Mons, of which he was a canon. Having one day put on the dreſs and appearance of a ſavage, he was followed by a troop of boys into a moraſs, where he was kept ſo long, that the cold penetrated his debilitated limbs, which became contracted in ſuch a manner, that he uſed to compare his body to the ſhape of a Z. Notwithſtanding his loſs of the uſe of thoſe legs that had been accuſtomed to dance ſo gracefully, and of thoſe hands that could formerly play the lute and paint ſo well, he continued gay and cheerful; and his turn for pleaſantry and wit not only ſupported him under his calamities, but drew to him the beſt company of the French metropolis. The loſs of his fortune by a law-ſuit was added to his other misfortunes, and he was under the neceſſity to flatter cardinal Mazarin to obtain a penſion. He was alſo recommended to the notice of the queen, of whom he requeſted the title of "Valetudinarian" to her majeſty: ſhe ſmiled at the conceit, and he ever afterwards aſſumed the title of "Scarron, by the grace of God, unworthy valetudinarian to the queen." Some time after this he offended Mazarin, and loſt his penſion. He then attached himſelf to the prince of Condè, and celebrated his victories. He at length formed the reſolution of marrying mademoiſelle d'Aubignè, afterwards the celebrated madame de Maintenon, who was at that time only 16 years of age. It was then, ſays Voltaire, conſidered as a great acquiſition for her to gain for a huſband, a man diſfigured by nature and diſeaſe, who had rendered himſelf impotent by exceſs, and who was almoſt deſtitute of fortune. On his marriage, the notary aſked what dowry he would ſettle on his wife? he replied, "Immortality: the names of the wives of kings die with them, but the name of Scarron's wife ſhall live for ever." He was in one reſpect a true prophet, but her immortality depends on her later title of madame Maintenon, and not on her relationſhip to Scarron. After marriage, Scarron became a new man: he was more decent in his manners and converſation; and his gaiety, when tempered with moderation, was ſtill more agreeable. But, in the mean time, he lived with ſo little economy, that his income was ſoon reduced to a ſmall annuity, and what is called his marquiſate of Quinet, by which he meant the revenue which he derived from his publications, that were printed by a perſon of the name of Quinet. He was accuſtomed to talk to his ſuperiors with great freedom, and in a very jocular ſtyle. In a dedication to the king, he thus addreſſed his majeſty: "I ſhall endeavour to perſuade your majeſty, that you would do yourſelf no injury, were you to do me a ſmall favour; for in that caſe I ſhould become gay. If I ſhould become more gay, I ſhould write ſprightly comedies; and if I ſhould write ſprightly comedies, your majeſty would be amuſed, and thus your money would not be loſt. All this appears ſo evident, that I ſhould certainly be convinced of it, if I were as great a king as I am now a poor unfortunate man." The conſtitution of Scarron was too much broken to admit of a long life, and he ſeems to have been pleaſed in the proſpect of a releaſe from his miſeries. "My children," ſaid he to his friends who ſurrounded his dying bed, "I ſhall never make you weep ſo much as I have made you laugh;" and juſt before he expired, he ſaid, "I could never have thought it was ſo eaſy to make a jeſt of death." He died in 1660, at the age of 50. In his epitaph, made by himſelf, he deſires, in a mixture of the comic with the pathetic, that the paſſengers would not awaken, by their noiſe, poor Scarron from the firſt good ſleep he had ever enjoyed.

His works have been collected and publiſhed by Bruzen de la Martiniere, in 10 vols. 12mo. 1737. Theſe are, 1. The Eneid, traveſtied in eight books. 2. Typhon, or the Gigantomachia. 3. Comedies. 4. A comic Romance in proſe, which is ſaid to be the only one of his works that deſerves attention. 5. Spaniſh novels tranſlated into French. 6. A volume of letters. 7. Poems, conſiſting of ſongs, epiſtles, ſtanzas, odes, and epigrams. Scarron took pleaſure in reading his works to his friends, as he compoſed them: he uſed to call it trying them. Segrais and another perſon coming to him one day, "Take a chair," he ſaid, "and ſit down, that I may examine my Comic Romance." When he ſaw them laugh very heartily, he ſaid he was ſatisfied: "my book will be well received, ſince it makes perſons of ſuch delicate taſte laugh." He was not diſappointed in his expectations: the Romance had a great run.

SCARSDALE, in *Geography*, a townſhip of America, in Weſt Cheſter county, New York, bounded weſt by Broux river, and ſouth by North Rochelle.

SCARSOUGH, a mountain of Scotland, in the S.W. part of the county of Aberdeen, on the borders of Perthſhire, ſaid to be 3412 feet above the level of the ſea.

SCARVAGH, or Scarvagh *Paſs*, in the county of Down, Ireland, formerly an incumbered paſs through bogs, woods, and moraſſy grounds; now a ſmall, neat village, on the Newry canal, where there is a large ſalt-work. It is two miles N.W. from Loughbrickland, and is on the border of the county of Armagh.

SCARUS, in *Ichthyology*, a genus of fiſhes of the order Thoracici, of which the generic character is as follows: inſtead of teeth, it has ſtrong bony proceſſes, crenate at the edges; the gill-membrane is five-rayed, the covers are very entire; the lateral line is moſtly branched. Gmelin has enumerated and deſcribed eight ſpecies, but Dr. Shaw has given a larger number.

Species.

RIVULATUS. The jaws of this fiſh are continuous, ſmooth, ſerrate, with the moſt minute teeth at the edges; the teeth are approximate, filiform, growing a little leſs from the middle of the lip. It is deſcribed by Dr. Shaw as the blueiſh ſcarus, ſpotted with black, and marked by longitudinal yellow undulations. It inhabits the Red ſea, and is ſaid to arrive at a great ſize: the ſcales are ſmall; the dorſal and anal fin occaſionally recumbent in a channel; the tail is forked; and it is ſuppoſed to feed principally on the different kinds of fuci; it is conſidered as an edible fiſh, though the ſpines of the rays will occaſion wounds that produce a temporary inflammation. The firſt and laſt rays of the ventral fins are ſpinous: it has a ſpine before the dorſal fin.

STELLATUS. The body of this ſpecies is oval, ſtellate, with contiguous nearly hexagonal ſpots. It inhabits Arabia, among the banks of coral; is about ſix inches long; it feeds on herbs; the ſcales are round and ſmall. The fiſh is edible. The crown is flattiſh, with two longitudinal obtuſe ridges, converging on the fore part; the eyes are more remote, the iris yellow; the noſtrils on each ſide are double; the lips are equal; the gill-covers ſcaly, ſtriate behind; the vent is covered with the ventral fins; the lateral line is not conſpicuous; the pectoral fins are obtuſe, yellowiſh, the reſt are black; the dorſal and anal are obtuſe behind; the tail is two-lobed, obtuſe, with yellow blotches at the ſide.

GHOBBAN. The tail of this fiſh is even; the jaws are whitiſh; the head is marked with patches, and the outer edges of the fins are of a greeniſh-blue. It inhabits Arabia. The body is whitiſh; the ſcales have each a tranſverſe blueiſh ſtripe in the middle, and one at the baſe, alſo with brown longitudinal ſtreaks.

The lips are yellowiſh at the edge, at the baſe they are of a greeniſh-blue; the lateral line is double, one near the back, and the other commencing before this finiſhes, and running ſtraight through the middle of the tail; the pectoral fins are obtuſe and hyaline, the upper edge at the baſe only blue, the reſt are of a reddiſh-violet: the dorſal and anal fins have a greeniſh-blue longitudinal ſtripe at the baſe; the tail is truncate and greeniſh behind.

FERRUGINEUS. This, as its name denotes, is of a ruſty brown; the jaws and outer edge of the fins are green; the tail is even. The ſhape of this ſpecies is an oblong-oval. The jaws are bifid in the middle, thin at the edge, and in colour of a blue-green: the lateral line is double, one near the back, the other in the middle, terminating at the end of the firſt: the pectoral fins are of a ruſty-brown; the ventral and anal violet, but the dorſal and caudal are yellowiſh, the latter with long lanceolate ſcales at the baſe. It is an Arabian fiſh.

SORDIDUS. This alſo is of a ferruginous brown colour, but the jaws are reddiſh; fins very duſky, and the tail is even. Like the laſt, it inhabits Arabia. The body is narrower and oblong; the jaws are cleft, a little moveable, not covered by the lips, and thin at the edge; there are two ſtraight lateral lines, one beginning where the other ends; the central fins are violet; the dorſal brown, with nine ſimple rays; the anal fins have three ſimple rays, and the pectoral with one, which, like the caudal, are yellowiſh. It is found in Arabia.

HARID. In this the tail is forked, but the baſe is covered with ſcales in the middle. It inhabits Arabia. The body beneath is of a pale violet; the ſcales are large and lax. The head and throat naked; the jaws are eminent and cleft, the crenate edges in the lower ſometimes enlarging into two ſubulate teeth; the upper lip is the longer of the two, with a ſort of canine tooth on each ſide; the lateral line is ſtraight, double, one near the back, beginning at the nape, and reaching to the end of the dorſal fin, the other in the middle, reaching from the middle of the ſide to the tail; the pectoral fins are yellowiſh; the dorſal and anal are of a pale violet; the tail alſo is lunate and violet.

SCHLOSSERI. This ſpecies is of a golden colour, with five brown ſpots on each ſide; the back is browniſh; the tail is nearly even. This fiſh is an inhabitant of Java; the ſize of the Cyprinus rutilus; the body is compreſſed, broad, covered entirely with large ſcales. The head is thicker than the body, and flattiſh above; the eyes are large, and the iris tawny; the mouth is aſcending; the lower jaw is the longer of the two; the palate is bony, rough, and the arch carinate; the tongue is flat, pointed, the tip looſe, the pectoral fins are pointed: the ventral triangular, joined to the belly by a perpendicular membrane, with a lanceolate ſcale on each ſide; the dorſal fin is a little fleſhy at the baſe, extending half way down the back.

VIRIDIS. This ſpecies, as its name denotes, is of a green colour, but the lateral line is interrupted. It is found in the Japaneſe ſeas, and is the ſize of a carp; the head is ſtraight, the ſcales large, and each bordered with deeper green than the ground colour; the tail is ſlightly ſublunated. Such are the Linnæan ſpecies given by Gmelin: the following are added by other naturaliſts.

CRETENSIS, or Green Scarus, is yellowiſh beneath, with very large ſcales, a ramified lateral line, and ſublunated tail. The general length of this fiſh is about twelve inches; the body is broad and ſloping, the ſcales are extremely large, the lateral line is ramified on every ſcale over which it paſſes. It is a native of the Mediterranean, and particularly about the coaſt of the iſland of Crete, whence it derives its ſpecific name: it is, however, found in the Indian ſeas.

CROICENSIS, Roſe-red Scarus, with a ſilvery abdomen, is mentioned by Bloch as about ten inches long; it is ſhaped like a carp; the colour is of a ſtrong roſe-red, with ſilvery abdomen; in ſome ſpecimens there are two longitudinal ſilvery ſtripes on the body; the ſcales are large; the fins pale; the tail is ſlightly lunated. It is a native of the Indian ſeas.

PSITTACUS, Greeniſh Scarus, marked with yellowiſh lines, and with the edges of the fins, abdominal band, and variegations of the head, blue. The jaws of this ſpecies are blue; the fins purple, edged with blue; the back is ſtraighter in the outline than the abdomen; the tail riſing, ſpotted with blue, and ſubfurcated; the lateral line is double and ramified; the eyes are ſmall. It is a native of the Arabian ſeas.

PURPURATUS, the Dull-green Scarus, is marked with three longitudinal ſerrated purple bands on each ſide, and has a blue abdomen. It is called by Forſkal the purple ſcarus. It is a very elegant ſpecies, and much allied in its habits to the labrus. The body is abruptly lanceolate; the purple ſtripes on the body are ſerrated at their upper edges; the pectoral fins are green, and marked at the tip by a large lunated, marginal black ſpot ; the dorſal and anal fins are marked towards the baſe by a purple ſtripe ; the ventral fins are blue ; the tail is marked with longitudinal purple ſpots, and on each ſide by a purple ſtripe ; the ſhape is ſlightly rounded ; the lateral line is ramified ; the ſcales are lax, as in the mullet. It is a native of the Arabian ſeas, and was firſt obſerved by Forſkal.

NIGER. This ſpecies is ovate-oblong, and is called the blackiſh-brown ſcarus with red lips, and the margins of the fins are of a greeniſh-blue. It is found in the Arabian ſeas.

TRILOBATUS, or Variegated Scarus, is characteriſed by its very diſtinctly trilobate tail ; the upper jaw is longer than the lower ; the colours of the body are various ; it has two ſpiny rays, and ſixteen ſoft on the dorſal fin. It is a native of the American ſeas.

ROSTRATUS. Scarus with elongated jaws, though not mentioned by naturaliſts in general as of the ſcarus tribe, and though it differs from them in no other reſpect, except in having the jaws much elongated ; the lower jaw is rather longer than the upper ; the eyes are large ; the head without ſcales ; the dorſal and anal fin are rather ſhort ; the tail is very large and lunated ; and near it is a tranſverſe band of a deep colour ; no lateral line could be perceived ; on the dorſal fin are eight ſpiny rays. This fiſh is named by Cepede, Fleurieu, in honour of a gentleman of that name, a celebrated member of the National Inſtitute of France.

SCARUS, the name of a ſea-fiſh, being, in the Linnæan ſyſtem, a ſpecies of the labrus, (ſee LABRUS *Scarus*,) of which there have been ſeveral remarkable things aſſerted by the ancients, ſome with and ſome without any foundation ; as that it ruminates, or chews the cud like our oxen, &c. This Ariſtotle, Pliny, Oppian, and others affirm, but none of them of their own perſonal knowledge ; they ſeem to have had it by hearſay, or elſe, as authors often do, to have taken it from one another ; for the thing is not true in fact.

It has been ſaid alſo to be the only fiſh which feeds on herbs ; and it is ſo far true that it does feed on them, and that few other fiſh do, but not that no others feed in the ſame manner. It has been reported alſo that this is the only fiſh that ſleeps. Geſner would perſuade us, that not only this, but many other fiſh, alſo ſleep. But this does not ſeem to be the fact ; for this race of animals have no eye-brows, nor any membrane to cloſe and cover their eyes with, as other creatures have, to which nature has allowed ſleep.

The later naturaliſts have deſcribed three ſpecies of this fiſh : Rondeletius two, the *ſcarus onias*, and *ſcarus varius* ; and Bellonius one, which is different from both theſe, and ſeems to have been the very fiſh the ancients knew by this name.

The *ſcarus onias* is a ſea-fiſh, found among rocks and near the ſhores. Its ſcales are large and very thin, and its back of a blackiſh-blue ; its belly of a fine white, and is of an oblong and rounded ſhape ; its teeth are broad, not pointed, and reſemble thoſe of the human jaws ; its eyes alſo are large, and its head over the eyes of a fine ſtrong and clear blue.

The *ſcarus varius* is of the ſhape and figure of the former, but its eyes and its belly are of a purple colour ; its tail is of a fine clear and ſtrong blue, and the reſt of its body is of a greeniſh or blueiſh-black ; its ſcales are ſpotted and ſpeckled with duſky ſpots ; its mouth is moderately large, and its teeth broad in the upper jaw, and ſomewhat pointed in the under : from the head to the tail, all along the ridge of the back, there runs a row of ſhort ſpines, which are connected at their bottoms by a membrane ; and in the middle of the belly there are ſeveral purple ſpots. It is a very beautiful fiſh. Rondelet. de Piſc. lib. v. cap. 3.

The *ſcarus Bellonii*, which differs from both theſe, and ſeems to be the ſame fiſh which the ancients called by this name, is of a mixed blueiſh and red colour ; its ſcales are broad and thin, and it has two tranſverſe protuberances near the ſides of the tail ; its body is rounded, but not very long ; its teeth are ſtrong and obtuſe, and well fitted for their office, which is the tearing off the tough ſea-herbs from the rocks, and chewing them for food ; its mouth is but ſmall, and it has only one fin on the back, which is prickly ; its uſual ſize is about five or ſix inches in length ; it is accounted a very delicate fiſh, but is inſipid, unleſs eaten with the guts, and all that they contain. The liver and ſtomach of this fiſh, with its contents, are cooked up by the Greeks into a very delicate diſh ; the epicures among them not regarding the reſt of the fiſh. Bellonius, de Piſc. p. 126.

SCARY, in *Huſbandry*, a term uſed by the farmers for a barren land, which has a poor or thin ſward, or coat of graſs upon it.

SCATALENS, in *Geography*, a town of France, in the department of the Upper Garonne ; 25 miles N. of Toulouſe.

SCATARELLO, in *Ornithology*, the name of a ſmall bird of the ficedula kind, of a greyiſh-brown on the back, and a pale yellow on the breaſt and belly ; its legs are black. It ſeems nearly allied to the *beccifago*.

SCATARI, in *Geography*, a ſmall uninhabited iſland on the E. coaſt of Cape Breton, about ſix miles long, and two broad ; ſerving as a ſhelter to a bay from the E. and S. called Menadou or Panadou bay ; formerly called Little Cape Breton. N. lat. 46° 3′. W. long. 59° 35′.

SCATCH-MOUTH, in the *Manege*, a bit-mouth, differing from a canon-mouth in this, that the canon is round, whereas a ſcatch is more upon the oval. That part of the ſcatch-mouth that joins the bit-mouth to the branch, is likewiſe different ; a canon being ſtayed upon the branch by a fonceau, and a ſcatch by a chaperon, which ſurrounds the banquet. The effect of the ſcatch-mouth is ſomewhat greater than that of the canon-mouth, and keeps the mouth more in ſubjection. Snaffles are commonly ſcatch-mouths.

SCATEA, a word uſed by Paracelſus for a ſomewhat hard ſabulous concretion in the urine.

SCATECOKE, or SCHATECOKE, in *Geography*, a townſhip of New York, in Renſſelaer county ; 4 miles N. of Lanſinburg.

SCATES CORNER, a cape of England, on the coaſt of Lincolnſhire, on the W. ſide of the entrance into Croſs-Keys Waſh.

SCATZACH, a river of Wurtemburg, which runs into the Neckar, two miles above Heilbron.

SCAVAGE, SCHEVAGE, *Schewage*, or *Shewage*, in our *Ancient Cuſtoms*, a kind of toll, or cuſtom, exacted by mayors, ſheriffs, &c. of merchant-ſtrangers, for wares ſhewed, or offered to ſale, within their liberties. This cuſtom is prohibited by ſtat. 19 Hen. VII. cap. 7. though the city of London ſtill retains the benefit of it.

SCAVANT, SAVANT, a term purely French, ſignifying *learned*. It is little uſed, except in the phraſe *Journal des Sçavans*, denoting a journal of the works of the learned, publiſhed monthly at Paris ; being the firſt work of that kind, and that from which all the reſt have had their riſe.

Menage derives the word from the Latin *ſapere, to be wiſe* ; and, on that footing, he will have it written *ſavant* ; others from *ſcire, to know* ; and, for that reaſon, write it *ſçavant*. The latter etymology and orthography are followed by the

Academy; though all the ancient MSS. have it *ſavant*, *ſavoir*, &c.

SCAVEL Spitter, denotes a ſmall ſpade, ſhod only half way, and uſed in digging clay.

SCAVENGERS, two officers choſen yearly in each pariſh in London, and the ſuburbs, by the conſtables, churchwardens, and other inhabitants, whoſe buſineſs it is to hire perſons called *rakers*, with carts, to cleanſe the ſtreets, and carry away the dirt and filth thereof, under a penalty of 40*s*.

The word is derived from the Saxon *ſcaeſda*; or Dutch *ſchaven, to ſcrape*, or *ſhave away*.

All perſons within the weekly bills are to ſweep the ſtreets before their doors every Wedneſday and Saturday, on pain of forfeiting 3*s*. 4*d*. and perſons laying dirt or aſhes before their houſes, incur a forfeiture of 5*s*. For defraying the expences of ſcavengers; conſtables, churchwardens, &c. may make a tax, being allowed by two juſtices of the peace, not exceeding 4*d*. in the pound. Perſons who refuſe to take upon them the office of ſcavenger, forfeit 10*l*. (14 Car. II. cap. 2. 2 W. & M. c. 2.) Perſons authoriſed by 22 & 23 Car. II. may order ſuch parts of London ſtreets, &c. as lie before vacant houſes, to be paved and amended, and impoſe aſſeſſments on the owners; and ſuch authoriſed perſons may direct poſts to be ſet up in all paſſages within the city, to preſerve foot-paths, and make aſſeſſments for that purpoſe. (10 Geo. II. c. 22.) By 1 Geo. I. c. 48. juſtices of peace in their quarter-ſeſſions may appoint ſcavengers, and order the repairing and cleanſing of ſtreets in any city or market-town, and appoint perſons to make aſſeſſments, ſo as not to exceed 6*d*. *per* pound *per annum*.

The ſcavengers are much the ſame with what were anciently called *ſtreet-wards*. The Germans call them *dreckſimons*, from one Simon, a famed ſcavenger of Marpurg.

SCAULEZ, in *Ichthyology*, the name of a fiſh common on the Mediterranean ſhores, and called by authors *hepſetus* and *anguella*.

SCAUP Duck. See Duck.

SCAURITSCH, in *Geography*, a river of Stiria, which runs into the Drave, two miles S.S.W. of Pettau.

SCAURUS, in *Ancient Geography*, a mountain of Triphylia, from which flowed the ſmall river Jaon, E. of Salmone. On the right of the Jaon, and near its mouth, were two temples, one of Eſculapius Demenetus, and the other of Bacchus Leucyanitus, from the name of a ſmall river in its vicinity, which ſprung from mount Pholoë, and ran into the Alpheus a little above Jaon.

SCAUYACE, in *Geography*, a river of America, in New York, which iſſues from the N.E. corner of Seneca lake, and ſeparating the townſhips of Romulus and Junius on the N., diſcharges itſelf into Cayuga lake.

SCAW, or Scawl-hill, a mountain of the county of Antrim, Ireland, near its eaſt coaſt, and a little north of the town of Larne.

SCAZONE, in *Ichthyology*, a name given by Salvian and others to the fiſh which we call the *pricked-dog*, or *hound*, and the generality of authors the *Galeus ſpinax*. It is a ſpecies of ſqualus, diſtinguiſhed by the roundneſs of the body, and having no pinna ani. See Squalus.

SCEAT, among the Saxons, a ſmall coin equal to four farthings. See Saxons.

SCEAUX, in *Geography*, a town of France, and principal place of a diſtrict, in the department of the Seine; 3 miles S. of Paris. The place contains 1404, and the canton 12,190 inhabitants, on a territory of $46\frac{1}{10}$ kiliometres, in 13 communes.

SCELAZIUS, in *Zoology*, the name by which Dr. Hill has called a genus of animalcules with viſible legs.

It is common in ditch-water, and is leſs quick in its motions than moſt other animalcules.

SCELETON, in *Anatomy*. See Skeleton.

SCELLIERES, in *Geography*, a town of France, in the department of the Jura, and chief place of a canton, in the diſtrict of Lons-le-Saulnier, 8 miles N. of it. The place contains 1395, and the canton 7856 inhabitants, on a territory of $92\frac{1}{2}$ kiliometres, in 21 communes.

SCELOTYRBE, σκελοτυρϐη, in *Medicine*, a diſeaſe deſcribed by the ancients, and characteriſed principally by a contraction of the limbs; quaſi *cruris perturbatio*.

There has been ſome difference of opinion, however, as to the nature of this contraction; ſome writers ſuppoſing it to be of a paralytic nature; others deeming it a convulſive affection, reſembling St. Vitus's dance; and others referring it to ſcurvy. Sauvages was of the ſecond opinion, and has treated of St. Vitus's dance under the appellation of ſcelotyrba chorea Viti. (See Chorea.) But the deſcriptions left by the ancients do not ſupport that notion. Galen's account would lead us to refer the diſeaſe to *paraplegia*, or palſy of the lower extremities: for he ſays the patients are unable to walk in a ſtraight direction, but move in a zig-zag line, in conſequence of croſſing one foot over the other. The learned Sennertus, however, has pointed out ſome differences between the ſcelotyrbe and the proper palſy, and conſiders the ſcelotyrbe as that rigidity or loſs of power in the lower limbs, which accompanies the ſcurvy. He obſerves, eſpecially, that the loſs of motion in common palſy is permanent; whereas in the ſcorbutic paralyſis, the motion is loſt one day, and returns partially the next, and then again is loſt. Again, the common palſy attacks ſuddenly, while the latter comes on ſlowly, &c. (See Sennert. de Scorbuti Signis.) This accords with the obſervation of Pliny, who mentions the *ſcelotyrbe* as a diſeaſe occurring, together with *ſtomacace* (the ſcurvy), among the Roman ſoldiers, when encamped on the Rhine. (Nat. Hiſt. lib. xxv. cap. 3.) There is little doubt, indeed, that this was a ſymptom of ſcurvy, which prevailed in low damp ſituations, wherever men were much crowded together, and ill fed; and which occurred alſo endemically, and even epidemically, in early times, whenever a general dearth took place. The diſeaſe was ſometimes, indeed, called *peſtilentia*; ſometimes *ignis ſacer*; and in later times, St. Anthony's fire. It has alſo been aſcribed to particular articles of food, ſuch as to diſeaſed, or *ergoted* rye, when it was called *ergot*; to the ſeeds of the *raphanus*, ſuppoſed to be mixed with corn, when it was called *raphania*, &c. See Ignis *Sacer*, Ergot, and Scurvy. It has been alſo denominated *mal des ardens*, *kriebel kranckheit*, &c. from particular ſymptoms.

SCEMI, in *Botany*, a name given by ſome authors to the carob, or ſweet pipe-tree.

SCENA, Ital.; a ſcene in *Muſic*, is a detached portion of an opera, ſung at concerts public and private, as a cantata. It generally conſiſts of a recitative and an air, and ſometimes of two recitatives and two airs. It is, however, very inferior in plan to a cantata for concerts, which has a beginning, a middle, and an end. Whereas theſe unconnected ſcenes begin, and often end ſo abruptly, that they convey no more meaning to an audience than a ſolfeggio, or a poem would do, if ſung backwards.

SCENÆ, in *Ancient Geography*, a town of Aſia, on the confines of Babylonia, and in the ſouthern part of Meſopotamia, in the country of the Scenite Arabs, according to Strabo.

Scenæ *Mandrorum*, a town of Egypt, between Aphroditon and Babylonia, according to the Itinerary of Antonine.

Scenæ *Veteranorum*, a town of Egypt, 14 miles from Heliopolis, according to the Itinerary of Antonine.

SCENE, Scena, in its primary ſenſe, denoted a theatre, or place where dramatic pieces, and other public ſhows, were repreſented. The word is originally Greek, σκηνη, ſignifying a *tent*, *hut*, *booth*, or the like, where dramatic pieces were anciently performed.

The original ſcene for acting of plays was as ſimple as the repreſentations themſelves; it conſiſted only of a plain plat of ground, proper for the occaſion, which was in ſome degree ſhaded by the neighbouring trees, whoſe branches were made to meet together, and their vacancies ſupplied with boards, ſticks, and the like, to complete the ſhelter; and theſe were ſometimes covered with ſkins, ſometimes only with the branches of other trees, newly cut down, and full of leaves.

Thus Virgil, in his Æneid:

——— "Tum ſylvis ſcena coruſcis
Deſuper horrentique atrum nemus imminet umbrâ."

Upon which Servius remarks, "Scena apud antiquos parietem non habuit."

So Ovid:

"Primus ſollicitos feciſti, Romule, ludos
Cum juvit viduos rapta Sabina viros.
Tunc neque marmoreo pendebant vela theatro
Nec fuerant liquido pulpita rubra croco.
Illic quas tulerant nemoroſa palatia frondes
Simpliciter poſitæ ſcena ſine arte fuit."

Thus alſo Caſſiodorus derives the word ſcene from the cloſe ſhade of the grove where, in the ſpring-time, the ancient ſhepherds uſed to ſing and play.

It does not appear that the ancient poets were at all acquainted with the modern way of changing the ſcenes, in reſpect of the different parts of the play, but all was performed in the ſame place.

The firſt things repreſented in theſe new theatres, were what they called *mimi*. Theſe were a very coarſe ſort of poems, repreſenting, in obſcene and indecent language, the vices and indecent actions of the principal people of the time. Sophrones and Xenarchus ſeem to have been the firſt writers of this ſort of comedy, and they uſed ſometimes proſe, ſometimes verſe, in theſe compoſitions. After the licentious things, thus repreſented, had given great offence to the magiſtracy, the poet's hands were tied up from writing at all, and the actors in theſe ſcenes were forbidden to ſpeak. Hence aroſe a new way of entertaining the ſpectators, which we ſtill continue, under the name *pantomime*, the ſame by which they expreſſed it. In this all was repreſented in dumb ſhow, and the geſtures and motions of the limbs were all they had to repreſent the actions of others by.

This ſort of public diverſion ſeems to have been in faſhion in the days of Ariſtotle, and to have been continued long afterwards. Salmaſius is of opinion, that Pylades was the firſt who ſeparated the pantomime and dancing from the plays where the actors ſpoke. But this ſeems an error in that great critic; for they ſeem, by the hiſtories we have left of them, to have been repreſented ſingly long before that time, Pylades living in the time of Auguſtus Cæſar.

Poetry and dancing were early ſuppoſed to have ſome relation to one another: the firſt was called a *ſpeaking dance*, and the latter a *dumb poem;* a name afterwards, and not till long afterwards, given to a picture. Thus they were introduced on the ſame ſcenes, as things naturally connected together.

Scene was afterwards more particularly uſed for the decorations of a ſtage or theatre.

The ancients, we are informed by Vitruvius, had three ſorts of ſcenes, or ſcenical decorations, in their theatres. That in common uſe was a ſpacious front, or range of building, adorned with columns and ſtatues; in which were three large openings, through which other buildings appeared in perſpective; *viz.* a palace for tragedies; houſes and ſtreets for comedies; and foreſts for paſtorals.

Theſe decorations were either *verſatile*, *i. e.* they turned on pivots, as deſcribed by Vitruvius; or *ductile*, *i. e.* ſliding along grooves, as thoſe in our theatres. And as this or that ſide, or repreſentation, was turned towards the ſpectators, the ſcene was called a *tragic*, *comic*, or a *paſtoral* ſcene. See ſeveral curious remarks on the ancient ſcene, in M. Perrault's notes on Vitruvius, lib. v. cap. 6. See Playhouse.

Scene is alſo uſed for the place repreſented, or that where the action is conceived to have paſſed.

One of the grand laws of the drama is, to obſerve the unity of the ſcene; which we more uſually call the *unity of place*.

In effect, to keep cloſe to nature and probability, the ſcene ſhould never be ſhifted from place to place, in the courſe of the play. The ancients were pretty ſevere in this reſpect, particularly in Terence; in ſome of his plays, the ſcene never ſhifts at all, but the whole is tranſacted before the door of an old man's houſe, whither, with inimitable art, he brings all his actors occaſionally.

The French, too, are very ſtrict in this reſpect; but the Engliſh plead for a diſpenſation from the rule; which they think confines them to too narrow bounds, and precludes them from that variety of adventures and intrigues, without which an Engliſh audience will never be ſatiſfied.

However, the more judicious and accurate of our own writers are very moderate in the uſe of this licence, and take care not to deviate too far from probability, by ſhifting the ſcene, between the acts, much farther than the perſons concerned may be ſuppoſed to have gone in the interval. Hence they ſeldom carry the ſcene out of the ſame town; though others, who owe no ſubjection to the ancient rules, take larger liberties: with ſome of theſe it is nothing when a fancied ſcene is in view, to ſkip from Covent Garden to Peru. The great Shakſpeare is exceedingly faulty in this reſpect, in almoſt all his plays.

Scene is alſo a part, or diviſion, of a dramatic poem, determined by a new actor's entering.

Plays are divided into *acts*, and acts are ſubdivided into *ſcenes*.

In moſt of our printed plays a new ſcene is never expreſſed to begin, but when the place is ſuppoſed to be changed, by ſhifting or drawing the moveable ſcene; but this muſt be eſteemed an overſight, ſince, on our ſtage, the ſcene is, properly, the perſons preſent at, or concerned in, the action on the ſtage at ſuch time. Whenever, therefore, a new actor appears, or an old one diſappears, the action is changed into other hands; and, therefore, a new ſcene then commences.

It is one of the laws of the ſtage, that the ſcenes be well connected; that is, that one ſucceed another, in ſuch manner, as that the ſtage is never quite empty, till the end of the act.

The ancients did not allow of above three perſons on the ſtage at the ſame time, excepting in the choruſes, where the number was not limited; but the moderns have but little regard to this reſtriction.

SCENIC Games, *Ludi Scenici*, among the *Ancients*, were entertainments exhibited on the *ſcena*, or theatre; including what we now call *plays*, of all kinds, with dancing, and other theatrical performances.

The Romans were almoſt four hundred years without any ſcenic games at all. Livy obſerves, that they were firſt inſtituted in the year of Rome 392, under the conſulate of C. Sulpitius Peticus, and C. Licinius Stolo. But the critics have obſerved a miſtake here in Livy; the conſulate of thoſe perſons falling in the year 389, which, therefore, is held the era of the introduction of the ſcenic games.

At firſt, ſome actors for theſe diverſions were ſent for out of Etruria; who, without reciting any thing, danced about to the ſound of inſtruments; ſo that thus far was no more than a ball, or rather what the French call a *ballet*. At length they began to rehearſe verſe: and ſatire was introduced, adorned with compoſitions of muſic, and accompanied with dances. At length, Livius Andronicus, about the year of Rome 514, introduced the entertainments of tragedy and comedy.

Thus, by degrees, growing more and more perfect, their ſcenical ſhows were at laſt repreſented with a juſtneſs and magnificence beyond any thing the world elſewhere ever ſaw. The fathers, in their writings, cry out loudly againſt the ſcenical games.

SCENOGRAPHY, formed from σκηνὴ, *ſcene*, and γϱαφη, *deſcription*, in *Perſpective*, a repreſentation of a body on a perſpective plane; or a deſcription of it in all its dimenſions, ſuch as it appears to the eye.

The ichnography of a building, &c. repreſents the plan, or ground-work, of the building; the orthography the front, or one of the ſides; and the ſcenography the whole building, front, ſides, height, and all, raiſed on the geometrical plan. For the principles and practice of ſcenography, ſee Perspective.

Scenography is the art of painting on ſeveral planes, ſo that all the different ſurfaces will only repreſent one object or deſign, and to have the ſame effect upon the eye placed in the point of view, as if the whole object were repreſented upon one plane.

This definition only ſuppoſes one point of view; but in the theatre every ſituation where a ſeat can be obtained is a point of view; it is therefore impoſſible for the ſcenery to impreſs the ſpectators with the ſame ideas of the original deſign; and the impreſſion will excite an idea of greater deformity, as the obſerver is more remote from the true point of view.

Such objects as trees, though repreſented on detached ſcenes, may appear tolerably correct; but as a ſtraight line cannot be made to appear as a ſtraight line when repreſented upon ſeveral planes, except in one point of view; ſo objects that are compoſed of ſtraight lines cannot be repreſented on ſeveral planes, ſo as to appear continued, excepting from one point of view: for this reaſon, a regular entablature continued without breaks, and horizontal mouldings, is an improper ſubject to be repreſented on ſeveral ſurfaces. A regular building is, therefore, an unfit object for the ſide ſcenery of a theatre; woods with hermitages, temples, or the like, are proper ſubjects, as the whole of a regular building may be repreſented on the ſame canvas; or if ſeveral regular parts occur, they may be painted upon a ſeparate ſcene, with trees upon the margin, ſo as to exhibit a good deſign of natural objects, in whatever point of view the ſpectator may be placed.

If pieces of regular architecture are to be the objects of repreſentation, buttreſſes and broken entablatures ought to be made choice of; for though ſome of the intermediate parts, ſuch as cornices, battlements, &c. are continued in ſtraight lines in the objects themſelves, and would appear to a critical obſerver placed out of the true point of view in as many different continuations as there are ſcenes, yet the errors might not be ſo ſtriking to the inattentive obſerver, though a competent judge, as to eſcape unnoticed: unleſs his attention was directed ſolely to the purpoſe of diſcovering the defect, he may be as much deceived as thoſe who are unacquainted with the principles.

As to apertures, ſuch as doors, windows, or other ornamental parts in compartments, they muſt be repreſented entire, or two or more upon the ſame ſcene, and the caſe muſt be ſimilar with every ſcene; ſo that the effect produced in different points of view, will be the expoſure of a greater or leſs portion of the intermediate parts.

And thus, by a proper choice of objects, the errors will be the leaſt poſſible, and will be ſo reduced, as not to weaken the effect of deception on the ordinary ſpectator.

Such are the difficulties that occur in modern theatres. As to the ancient Greek and Roman theatres, they appear to have had very little of what is now termed ſcenery; for that which the ancients called the ſcene was a real part of the building itſelf, which fronted the ſpectators, and ſeparated that part of the theatre where the actors performed, called the proſcene, from that part behind the proſcene to which they retired when the performance was done, or when a certain part was done.

The building or ſcene generally repreſented the front of a palace, or of ſome ſumptuous edifice, decorated with marble columns, pilaſters, ſtatues, and other ornaments. The doors or paſſages for the performers to enter and go off the ſtage were commonly three in number. Behind or within the paſſages were three triangular priſms, fixed perpendicularly on their axes, ſo as to be made to turn round and ſhew either of their faces to the ſpectators. Upon the faces of the priſms were painted ſuch deſigns as ſuited the ſubject of the action, whether tragic, comic, ſatirical, or paſtoral.

In this way it is evident there could be no great variety made in the view: the principal ſcene always continued the ſame ſo long as the theatre ſubſiſted, being a part of the building itſelf; and all the diverſity of the proſpect being only what could be ſeen through the three paſſages of the ſcene, according as the different faces of the painted priſms were turned towards the ſpectators; and conſidering the ſmall ſkill in perſpective which the ancients had, it may be preſumed, that the greateſt beauty of their theatres lay more in the architecture of the building, than in the painted or moveable ſcenes.

In after-times, when perſpective began to be better underſtood, ſcenery (as it is now called) was improved, and became the principal ornament of the theatre, by which not only a greater variety of proſpects could be repreſented, but alſo the great expence of erecting a real building to repreſent the ſcene was ſaved.

However, at firſt the diſpoſition of theſe painted ſcenes was very different from that, which a longer experience has introduced; the ſtage, indeed, beyond the curtain was made to riſe gradually; but the ſide ſcenes were ſet parallel to the ſide walls of the houſe, only a little inclining inwards, to lengthen the proſpect. Theſe were either one entire ſcene on each ſide, reaching from the front of the ſtage to the back of the ſcene, repreſenting the ſides of the fruſtum of a pyramid, or they were divided into two or more ſcenes upon each ſide, leaving paſſages between for the actors to enter at; but all of them on the ſame ſide were in one and the ſame plane; except that each of them had a return of ſome breadth joined to the edge next the audience, which return was parallel to the front of the ſtage, ſo as to make each ſcene have a conſiderable apparent thickneſs, and repreſent the ſolid corners of houſes or buildings.

But even in this manner, there could be no variety of the proſpects made with any conveniency during the time of acting; in regard that the ſide ſcenes, thus diſpoſed, could not eaſily be removed out of ſight to make place for others: ſo that the chief alteration of the view muſt ariſe from the change of the back ſcene.

But as the art of perſpective, within the laſt century, has been brought to much greater perfection than formerly, many new improvements have been made in the diſpoſition of the ſcenes for theatres, by which every variety may be exhibited, ſo as to make a total alteration of the proſpect as often as is required; to the facilitating of which many machines have been invented, as well for the eaſy moving and ſhifting of the ſcenes, as for repreſenting flyings, ſinkings, and riſings of objects; and in ſome ſort to make the theatre appear as a moving picture: but as the machinery is entirely diſtinct from the ſcenery, and founded upon very different principles, we ſhall only conſider what particularly regards the moſt convenient diſpoſition of the ſcenes, and their conſtruction according to the rules of perſpective, which is what is commonly called *ſcenography*.

In all dramatic entertainments the ſtage is conſtantly taken to repreſent the floor, pavement, or ground, on which the objects deſcribed in the ſcene are ſuppoſed to ſtand, or to which at leaſt they have relation; and this ground or floor is always ſuppoſed parallel to the horizon. That part of the ſtage which lies before the curtain is generally horizontal, but that part which lies beyond the curtain is made to incline upwards.

The reaſon of this is, that if the plane of that part of the ſtage which lies within the theatre were parallel to the horizon, it could only then appear as any other floor or pavement, and every object placed upon it being of its true ſize and ſhape, the whole would only be a geometrical model of what is intended to be repreſented without reference to the rules, as there could be no apparent fore-ſhortening in this caſe, but what was the natural effect of direct viſion, and thus nothing upon the ſtage would appear of any larger extent than what that floor or piece of ground might contain, and the whole appearance of the theatre could be no other than that of a room, wherein the real objects were placed in their true dimenſions and ſituations; but the art of conſtructing a theatre is in making it appear of greater extent than it is in reality, and thus giving it a more ample and extended proſpect: the ſtage or ground ſhould be made to appear enlarged, and the diſtance between one object and another increaſed; not merely as a picture painted on a flat wall, but as ſomething more real and ſolid; and thus in a ſpace which is only the ſize of a room, whole countries, towns, villages, &c. may be exhibited, and the objects may be made to appear as remote as may be conceived in nature.

For this purpoſe, the part of the theatre which is employed for the exhibition of ſcenery, is a receſs from the great room where the ſpectators ſit, and is in the form of a truncated pyramid, the baſe being what is called the *curtain;* and the vertex, which is the remote end of the pyramid, is called *the point of contraction*. The aperture, being thus diminiſhed as it is more remote from the ſpectator, is of infinite advantage in repreſenting an extended ſpace in a ſmall compaſs.

Andrea Pozzo, in a work entitled "The Perſpective of Painters and Architects," who has treated on this ſubject, and did himſelf ſucceed very well in the actual practice of it, gives theſe rules for the conſtruction of a theatre:—that the room in which it is to be erected ſhould be divided, as to its length, into two equal parts, the one for the ſpectators, and the other for the theatre:—that the elevation of the ſtage ſhould be one foot for every nine or ten feet of its depth, that is, of about an angle of ſix degrees, more or leſs; and as to the place of the eye or point of ſight, he makes its diſtance from the curtain to be equal to the depth of the theatre, that is, he places it at one end of the houſe, and the centre of contraction at the other; whence the height of the eye above the horizontal plane will be about an eighteenth or twentieth part of the whole length of the houſe.

But as it is not neceſſary that the place of the eye ſhould be confined to the extremity of the houſe, but be nearer to the centre of that part which is allotted to the ſpectators, ſo that the inconveniency neceſſarily ariſing from different ſituations out of the true point of ſight may be more equally diſtributed among the company, and the effect of the ſcenery be generally exhibited to more advantage; ſo neither is it neceſſary that the centre of contraction ſhould fall exactly on the oppoſite wall, but rather at a diſtance beyond it, to prevent the too quick decreaſe of the back ſcenes; whereby a conſiderable part of the depth of the theatre might be rendered uſeleſs: it being evident, that the nearer the centre of contraction is to the curtain, the quicker is the decreaſe of the back ſcenes, which become ſo ſmall, that the theatre behind them is of no farther uſe for the ſcenery.

The elevation of the ſtage and place of the eye being choſen at diſcretion, the ſize of the aperture of the theatre muſt be next determined, and this in part muſt be governed by the diſtance between the eye and the curtain; for as that aperture may be conſidered as the frame of a picture, within which the entire ſcene appears, the ſize of that picture ought to bear ſuch a proportion to the diſtance of the ſpectator, that his eye might not be too much diſtracted, or forced to turn too much aſide to ſee its ſeveral parts, but rather that he may be able to comprehend the whole proſpect at one eaſy view. This poſſibly may be ſufficiently effected, by making the length to the diſtance of the eye in a given proportion; but in matters of this ſort, although there be certain extremes on both ſides to be avoided, yet no ſuch determinate proportion is aſſignable, but that ſome latitude may be allowable; experience, therefore, in ſuch caſes is the beſt guide.

The height of the eye above the horizontal line admits alſo of ſome latitude; but partly depends on the height of the aperture of the theatre. It may, therefore, be ſufficient to remark on this head, that the height of the eye ought not to be ſo great that its axis may meet the curtain higher than the centre of the aperture, where its diagonals interſect; nor ſhould it be ſo ſmall as to be much below the face of an actor ſtanding on the front of the ſtage; but allowing that the elevation of the ſtage is once fixed, the height of the eye and the centre of contraction will alſo be determined.

From what has been advanced, it appears that when the elevation of the ſtage, the aperture of the theatre, and the height of the eye are ſettled, the entire ſcenographic pyramid is thereby determined; but that this laſt is variable by increaſing or leſſening the height of the eye, although the aperture and elevation of the ſtage remain the ſame: the enlarging of the height of the eye makes the centre of contraction more diſtant as the lowering of the eye brings the centre nearer: both will have correſponding effects with reſpect to the apparent diſtances of the ſeveral parts of the ſtage. This points out an eaſy way of introducing great variety of ſcenery, without the trouble of making any alteration in the fixed part of the theatre. But how far it may be proper in the different ſcenes to be repreſented at the ſame entertainment, to vary the height of the eye in one from that in which it was in another, muſt be left to experience to decide ; it ſeems not to be ſtrictly allowable, it being too great a ſtrain on a ſpectator's imagination, to fancy himſelf raiſed higher, or ſet lower, at every ſhifting of the ſcene, while he is ſenſible he ſtill keeps the ſame place.

Having ſaid ſo much on the general conſtruction, the diſpoſition of the ſcenes, and their painting, remain to be conſidered.

The ſcenes commonly uſed in a theatre are the ſide ſcenes, the hanging or top ſcenes, and the back ſcene, making all together what is called a ſet of ſcenes, and exhibiting one entire proſpect of all that is propoſed to be repreſented at one view, each ſcene having its peculiar part deſcribed on it.

The ſide ſcenes are uſually five or ſix on each ſide of the theatre, and ſerve to repreſent the ſides of the proſpect to the right and left. The hanging ſcenes are generally the ſame in number with the pairs of ſide ſcenes, and ſerve to connect the tops of each pair acroſs the theatre, and to repreſent the cieling or ſky, according to the nature of the intended proſpect. The back ſcene is placed beyond all the reſt, and fills up the ſpace left open by the ſide ſcenes and the hanging ſcenes, and thus cloſes the view.

All the ſcenes are placed perpendicular to the horizon, and parallel to the front of the ſtage, and are moveable in channels or grooves, made to receive their lower ends in the floor, except the hanging ſcenes, which are let down and drawn up to the top of the houſe.

Pozzo mentions two different methods of placing the ſide ſcenes, the one by placing them parallel to the front of the ſtage, and the other by making them incline inwards to the back ſcene : the firſt is the German way, and the other the Italian ; the laſt of which is preferred by this author, thinking it ſerves to prevent the appearance of the prompter and ſervants employed to move the ſcenes : but as other ways are eaſily found for avoiding that inconvenience, and as painting on ſcenes in an oblique ſituation is more troubleſome than when they are parallel, the laſt poſition will therefore be the moſt eligible.

In painting the ſcenes, every ſcene is to be conſidered as the plane of a picture which is to receive upon it ſuch part of the deſcription as falls within its bounds ; and we have here ſuppoſed all of them to be parallel to the front of the ſtage, and perpendicular to the horizon. One thing important is to determine what meaſures are to be given to the objects on each particular ſcene, ſo that the ſize of the objects on all the ſcenes, when ſeen all together, may be in due proportion.

Now it is evident, that if every ſcene ſtood upon the horizontal plane, the ſection of each ſcene with that plane would be the true interſecting line ; and therefore, if the true meaſures of the objects were employed in working at the proper diſtance of the eye for that plane, the objects repreſented would be in due proportion : then all that is required to be done is to apply the meaſures on the proper interſecting line ; but not to repreſent any object, or part of an object, in the ſpace contained by the interſecting line and the interſection of the declining plane of the ſtage, as all that part is cut off ; or to uſe the proportional meaſures on the interſection of the floor with the plane of the ſtage, which will anſwer the ſame purpoſe.

When any object is to be repreſented nearer than the apparent place of the back ſcene, and occupying the middle parts of the view to which the ſcene do not extend, ſuch as a temple, a triumphal arch, a tree, or any other object, detached from the reſt of the deſign, it becomes neceſſary to raiſe a ſeparate or ſtanding ſcene on purpoſe for it, and to ſhape the ſcene to the outline of the figure repreſenting the object, with proper openings in all the vacant intermediate ſpaces, that it may obſtruct no more of the view of the ſcenes behind it than what is abſolutely neceſſary for the object intended to be repreſented. Theſe open or pierced ſcenes have an aſtoniſhing fine effect, and add much to the beauty of the proſpect, by making the whole appearance natural and real, as in every motion of the ſpectator he diſcovers new parts through the openings of more diſtant objects, thus giving an effect approaching to real nature. On this principle even the ſide ſcenes are often made with uneven edges, anſwering to the outline of the objects repreſented on them, which, however, ought not to be carried too far, ſo as to prevent their being entirely hid when drawn back.

It has already been obſerved, in the firſt part of this article, that in the ſide ſcenes the painting muſt be regulated by the nature of the deſign, ſo that each ſcene may, as near as can be, contain the whole of ſome entire object, and not to let part of it fall on one ſcene and part of it on another, which would unavoidably occaſion diſagreeable breaks in the view, when the ſpectator was placed out of the proper point. It will, therefore, be proper for the artiſt to regulate his deſign accordingly, ſo as to diſtribute the parts on the ſcenes without breaking the repreſentations of the objects. The rule given by Pozzo for the declivity of the ſtage is too much, being inconvenient for the actors, and perhaps one foot in twelve is a much better proportion.

In conſtructing the ſcenery, it will be neceſſary to repreſent more than can be ſeen from the true point of view, ſo that the whole may appear complete to the ſpectators on the ſides, who would ſee a greater portion of the ſcenes upon the alternate ſide than thoſe in the centre, or in the direct radial.

As to landſcape ſcenery, it does not require much knowledge of perſpective ; however, if regular buildings are to be repreſented in the diſtance, a knowledge of vaniſhing-points will be neceſſary, in order to repreſent the object in its true poſition : the artiſt ought alſo to be able to find the ſcale for repreſenting an object at a given diſtance, according to what he judges that diſtance to be. For this we ſhall give rules at the concluſion of the article.

In repreſenting objects at a diſtance, and in the horizon, or nearly ſo, the rules of orthographic drawing being applied will be ſufficient to determine the repreſentation of the object ; as even at only three or four hundred feet diſtance, a ſmall houſe, ſuch as a cottage, will have the vaniſhing-points of its ſides at a vaſt diſtance, and conſequently the two lines inclining to each vaniſhing-point will form very nearly one ſtraight line. For example, ſuppoſe the two ſides of the object to make equal angles with the picture, and to be 400 feet diſtant, then the diſtance of each vaniſhing-point from the centre of the picture will be 400 feet diſtant. And let the two ſides of the object make any given angles with the picture, ſo as to be equal to a right angle, that is, ſo that the angle of the object itſelf may be a right angle ; the diſtance of the eye from the picture is always a mean proportional between the diſtances from the centre of the picture to each of the vaniſhing-points. Now if ſuch an object ſtand at equal angles with the picture, and at 400 feet diſtant from it, as before, one of the vaniſhing-points will be more than 400 feet diſtant from the centre of the picture, and the other leſs : and as the difference between the angles is greater, ſo will alſo the difference between the centre of the picture and each vaniſhing-point be greater. Another thing to be conſidered is, that the nearer the vaniſhing-point of a line is to the centre of the picture, the ſhorter a given portion of that line will be repreſented.

In *fig.* 1. let Q R S T W X Z Y denote the room or apartment for the theatre, then S Y Z R denotes the whole floor; T W X Q the cieling; A B C D a plane parallel to the floor S Y Z R; the point I is the point of ſight, or place of the eye of the ſpectator; I V is the principal ray, being a horizontal line parallel to the planes T W X Q, A B C D, S Y Z R, and perpendicular to the plane X Q R Z; the point V is the centre of contraction; G H *h g* is the inclined plane of the ſtage; the angle *p* P *v*, or *p* P V, is its angle of inclination; I K is the height of the eye.

Fig. 2. repreſents a plan of the theatre and ſcenery; A B C D is the outline of the walls; in the line S V, which repreſents the ſtation line, S is the ſtation point; V repreſents the centre of contraction; E F, G H, are the front ſcenes of the wings; L M is the back ſcene. In this conſtruction, and alſo in the general practice of conſtructing theatres, E F and G H are in one plane parallel to the planes repreſented by A B and B C, and the points F and G are equally diſtant from the line S V; the ends of the ſcenes are terminated by the ſtraight lines G I and F K, which tend to the centre of contraction V: the ſpaces, or interſcenes, may be divided as follows; draw H L V and E M V; produce the ſide B A to *r*, and let there be four ſpaces between the ſcenes; join S L, or ſuppoſe it to be joined, and produce S L to *r*; divide H *r* into four equal parts at *o*, *p*, *q*; draw *o* S, *p* S, *q* S, cutting H L at *s*, *t*, *u*; draw *s v*, *t w*, and *u x*, parallel to B C, or A D, meeting G I, or G V, at *v*, *w*, *x*, then the wings on the one ſide are H G, *s v*, *t w*, *u x*: the wings on the other ſide are conſtructed in the ſame manner. In this, Y Z repreſents the place of the curtain, which we ſhall ſuppoſe to be the plane to which the whole picture is referred.

Fig. 3. repreſents a longitudinal vertical ſection of the ſcenery, the ſpaces between being the ſame as in *fig.* 2. In this, E V is the direct radial; V the centre of contraction, as before; E the place of the eye; S the ſtation point; F G, H I, K L, M N, O P, are the edges or ſections of the ſcenes, terminated by the lines R V and Q V, which are ſections of the inverted pyramid, of which V is the vertex, or centre of contraction.

Fig. 4. repreſents a tranſverſe ſection of the theatre, W X Y Z being the outline of the walls; the height O Q of the eye is the ſame as E S, *fig.* 3: the heights of the ſcenes are taken from the line R Q, *fig.* 3, as ſhewn by the correſponding letters.

Fig. 5. is another ſection of the ſcenery, where the ſpaces are divided into equal parts; the effect of this is ſeen in *fig.* 6, where the graduations are not near ſo rapid as in *fig.* 4, where the remote ſcenes are more diminiſhed.

The buſineſs of ſcene-painting would be much facilitated by the application of the centrolinead, an inſtrument lately invented by the writer of this article, Mr. Peter Nicholſon, who has been honoured with the ſilver medal voted by the Society of Arts, for his invention and ready mode of application in drawing lines tending to a remote point. It will ſave the trouble, and prevent the inaccuracy occaſioned by that tedious and unſcientific method of reticulation, which is imperfect, and only fit to be uſed by thoſe who underſtand but little of perſpective. This inſtrument conſiſts of two legs jointed together, ſimilar to a carpenter's rule; the knuckle is pierced with a ſmall hole through the centre or axis of the rivet, to admit of a blade being fitted to it, in order to draw lines as required. Each edge of the blade is made quite ſtraight, and may either be parallel to each other, or tapered, to render it light. In conſtructing the inſtrument, the broad end of the blade (ſhould there be any difference) muſt be placed next to the joint of the legs, and upon the oppoſite edges of the legs to thoſe which fold or ſhut together; and one of the edges muſt tend to the centre of the joint: this edge is called the drawing edge. The blade being thus fixed upon the ſide of the legs next to the external angle, the whole of the inſtrument is clamped, or faſtened together by means of a ſemicircular plate of braſs, which has a circular ſlit or groove next to each edge. One edge of the braſs plate is ſtraight, and forms a diameter to the ſemicircle; from this diameter another ſemicircle projects in the ſame plane, equal to or leſs in diameter than that of the knuckle, ſo that each of theſe ſemicircles may have the ſame common centre, *viz.* the axis of the rivet. The plane of theſe ſemicircles is extended beyond the circumference of the greater, in order to attach the blade, and is pierced with a ſmall hole perpendicular to the common plane of the braſs plate, through the common centre of the two ſemicircles. A ſteady pin is inſerted in the hole, faſtened and made to project alike from each face of the braſs plate, and each projecting part of the ſteady pin ſo adjuſted as to fit the cylindric hole in the rivet, which holds the two legs together, and thus either ſide of the braſs plate may be fixed to the ſame ſide of the legs.

Each of the edges which ſhut together is in the ſame plane with the axis of the joint, and theſe two edges are called the ſliding edges. Each of the ſlits next to the larger ſemicircular part of the plate is the arc of a circle, concentric with the two ſemicircles. The braſs plate is faſtened to the legs by a ſcrew inſerted through each ſlit, and ſcrewed into each leg. The extended part of the braſs plate, on the convex circumference of the greater ſemicircle, is alſo pierced, and a ſcrew is paſſed through the hole, and ſcrewed into another rectangular plate, faſtened upon the top of the blade; and, to keep the drawing or central edge of the blade immoveable in reſpect of the legs, when the inſtrument is clamped by the ſcrews, two metal ſteady pins are made faſt to the lower plate, and the upper plate is pierced to receive the projecting parts of the ſteady pins, which are made to fit exactly. The ſteady pins are placed in a ſtraight line, paſſing longitudinally along the face of the blade, dividing it into two equal and ſimilar parts. Two ſides of the legs muſt be in the ſame plane with one ſide of the blade. Either ſide of the braſs plate is made to adjoin the upper face of the blade, and alſo the upper faces of the legs, ſo that the drawing edge may be reverſed, as the vaniſhing-point may be on the right or left. The drawing edge of the blade muſt be made to form any given angles with the ſliding edges of the legs, and either of the angles muſt be moveable, while the other is ſtationary, and be made to fix at pleaſure.

The centrolinead may be provided with blades of ſeveral lengths, in order to accommodate drawings of various ſizes. The two edges of each of the legs ſhould be parallel to each other, ſo that either of the oppoſite edges of the ſame leg and the drawing edge may form the ſame angle, for the convenience of ſetting the inſtrument. The method of ſetting the centrolinead is as follows.

Let there be given two converging lines, and a point between them, to draw a line through the given point that ſhall tend to the point of concourſe of the two given lines.

Draw any ſtraight line ſo as to meet each converging line; let the two angles which each ſliding edge makes with the drawing edge be called the *angles of the inſtrument*, as the angle formed by the ſliding edges is regulated by them. Unſcrew one of the legs of the inſtrument, and ſet the angle formed by the ſliding edge of the unſcrewed leg and the drawing edge to one of the angles formed by the tranſverſe line, and one of the converging lines, then clamp the leg thus ſet; unſcrew the other leg, and ſet the angle formed by the leg now unſcrewed, and the drawing edge, to the other remaining angle formed by the tranſverſe line and the other converging line, and clamp the leg now ſet: fix a pin in each of the angles formed by the two converging lines, and the intercepted line, and place each ſliding edge upon each pin: then move the inſtrument ſo that the ſliding edges may always reſt upon the pins, until the drawing edge falls upon the given point; in this poſition keep the inſtrument ſtationary, and by the drawing edge of the blade draw a ſtraight line, and the line thus drawn will tend to the ſame point of concourſe with the two given lines.

It is often required to make the inſtrument paſs over the ſpace included by the two given lines on each ſide of that ſpace: for this purpoſe, having fixed the pins on the outſide of the two given lines in any two points taken at pleaſure, place the inſtrument upon the pins, and ſlide it along them, until the drawing edge either falls upon, or croſſes one of the given lines; then looſen the ſcrew next to the remote pin, and move the angle more or leſs, preſſing the legs gently upon the pins, until the drawing edge coincides with the line; then faſten the ſcrew, and ſlide the legs upon the pins, until the drawing edge coincides with the other given line, or croſs it: then, if the drawing edge coincides, the inſtrument is ſet; but if not, the ſcrew next to the pin, now the moſt remote, muſt be looſened, and the inſtrument ſet as before. The centrolinead muſt then be returned to the firſt line, and if it agrees with it, it is ſet; but if not, the ſcrew which is between the drawing edge and the remote pin muſt again be ſlackened, and the angle moved as before, until the blade coincides with the line; then make the ſcrew faſt, and the inſtrument will be ſet.

In ſome caſes the centrolinead may require to be returned to the other pin; but, in general, four movements will be ſufficient. This method of ſetting the inſtrument by approximation is very uſeful in general caſes; as ſuppoſe the vaniſhing line of the horizon given, and another line tending to a vaniſhing point in the horizontal line; it will be very convenient to ſet the centrolinead ſo as to draw lines without the two given lines, as there is generally a part of the perſpective drawing below the vaniſhing line of the horizon, more or leſs depending on the height of the eye above the level of the plane in which the object is ſituate.

In order to ſhew that the inſtrument is founded upon truth; let A B C D, *fig.* 7, be a circle, and let A and C be two fixed points, and let B be any intermediate point in the ſegment A B C, between A and C; join B A and B C; produce B A to E, and B C to F: then the angle A B C, being contained in the ſegment A B C, will always be equal; and conſequently, if either of the angles, as A B D, be invariable, it is evident that the other, C B D, will alſo be invariable; and it is ſhewn, as follows, that the ſtraight line B D, which repreſents the drawing edge or blade of the inſtrument, will always paſs through the fixed point D, which may repreſent a vaniſhing point, or the point towards which a number of lines may converge, and this point of convergence is always in the circumference of the circle A B C D, wherever the angular point B is ſituated, the point B being the concourſe of the two legs B E and B F, which ſlide upon the pins, and of the drawing edge B D of the blade. Draw A D and C D; and becauſe the angles A B D and A C D in the ſegment A B C D ſtand upon the ſame chord A D, they are equal to each other; for the ſame reaſon, the angles C A D and C B D are equal to each other; and this equality cannot take place unleſs B D paſs through the point D.

This demonſtration ſhews, that all lines drawn by the edge B D muſt tend to the point C, while the edges of the legs B E and B F move upon the pins A and C: but the manner in which the inſtrument is conſtructed makes the lines diverge; by this means it performs its operation in much leſs compaſs than if the lines were made to converge: the principle is, however, exactly the ſame, for what diverges on the one hand converges on the other.

In the conſtruction of ſcenes, or in perſpective drawings, where there are two vaniſhing points, it would be very convenient to have two centrolineads in uſe at the ſame time; for although the inſtrument may be made to change towards either vaniſhing point, if the changes are frequently required, much time will be loſt in altering it.

With reſpect to the application of the centrolinead to the painting of ſcenery. As two projecting pins for the edges of the legs to run upon cannot be fixed as upon paper, two marks may be made, and the edges of the legs may be always placed upon each mark, ſo that the drawing edge of the blade may paſs through the point given, and thereby the line may be drawn as required.

The principle being underſtood, the inſtrument may be fitted up with various modifications, as for inſtance, one of the angles may be at right angles to the blade, while the other makes an oblique angle; for whatever angles the blade or legs make, whether equal or unequal, the lines will always tend to a fixed point, and this gives an opportunity for making an immoveable centrolinead, which, as it can be made at very little expence, will be very uſeful, as not being liable to be altered. The immoveable centrolinead may be conſtructed as follows: let L M and N O, *fig.* 8, be two given ſtraight lines, converging to a point at ſome certain diſtance; draw any ſtraight line M O, and draw O P parallel to M L: lay the ſtraight edge M Q of a ruler upon the line M O; fix another ruler to the ruler M Q, ſo that the ſtraight edge O S may be upon O N; then fix the brace, in order to keep it ſteady; fix the triangular piece R O Q to the ſtraight edge M Q, ſo that the angle R O Q may be equal to the angle P O N; and the whole inſtrument, thus conſtructed, will be ready for uſe, by running the edges O M and O R upon the guides.

The angle M O R will be conſtantly the ſame, whatever angles the ſtraight line O M makes with the two given lines L M and N O, and from whatever place the line M O is drawn, ſo that the points M and O be taken in the lines L M and N O.

A common T-ſquare, where the under ſide of the blade and the under ſide of the ſtock are in one plane, and where the back, or outer edge of the ſtock, is in a plane perpendicular to the plane now mentioned, may be thus converted into a centrolinead, by adding the triangular piece R O Q to the back or outer edge of the ſtock, ſo that the point O of the angle may be in a ſtraight line with the drawing edge of the blade.

Fig. 9. ſhews the application of the centrolinead, as in the act of drawing converging lines.

By the uſe of an inſtrument of this deſcription, much time will be ſaved, and much greater accuracy will be obtained than by the ordinary methods of reticulation, or by any kind of ſcales. G and I are the guides, G H and I K are the two given lines, *l*, *m*, *n*, *o* are intermediate points, through which lines are to be drawn.

SCENOPEGIA, σκηνοπηγια, formed of σκηνη, *ſcene, tabernacle, tent*, and ϖηγνυμι, *figo, I fix*, the third grand feſtival among the Jews, at which all their males were to attend at the national altar, more uſually called *feaſt of tabernacles*, inſtituted after the people of Iſrael were in poſſeſſion of the land of Canaan, in memory of their having dwelt under tents in the wilderneſs.

The ſcenopegia was held for ſeven days ſucceſſively, commencing on the fifteenth of September, *i. e.* on the fifteenth day of the month Tiſri, the firſt of the civil, and ſeventh of the eccleſiaſtical year. To theſe ſeven days there was alſo added an eighth day, which was much the moſt ſolemn; both on account of the conflux of perſons, and of the extraordinary tokens they all gave of their joy. This eighth day was properly the feaſt of ingathering, on which they were to give thanks for their whole harveſt. However, the feaſt of tabernacles, and that of ingathering, though properly diſtinct, are ſometimes ſpoken of as one feaſt, and the name of either indifferently applied to the other.

It is of this eighth day St. John muſt be underſtood to ſpeak, when he tells us, our Saviour was at the feaſt of tabernacles on the laſt and great day.

The rabbies inform us, that there pertained to this feaſt a peculiar ceremony of drawing water out of the pool of Siloam, and pouring it, mixed with wine, on the ſacrifice, as it lay on the altar. This they are ſaid to have done with ſuch expreſſions of joy, that it became a common proverb, "He that never ſaw the rejoicing of drawing water, never ſaw rejoicing in all his life." To this ceremony our Saviour is ſuppoſed to refer, John, vii. 37, 38.

It is the practice of the modern Jews to tie together one branch of palm, three branches of myrtle, and one of willow; and with this in their right hands, and a branch of citron with its fruit in the left, to make a proceſſion during the ſeven days of the feaſt, in their ſynagogues, round their reading-deſks, as their anceſtors did round the walls of Jericho, in token of the expected downfall of their enemies. They alſo turn about with theſe branches to the four cardinal points, and ſhake or puſh them every way, to drive the devil from them. While they are making this proceſſion, they ſing Hoſannah; whence this feaſt is called Hoſannah.

When the holy ſcripture ſays abſolutely *the feaſt*, it is uſually to be underſtood of the ſcenopegia.

SCENT. Some animal carcaſes, buried with lime, though ten feet under ground, have been obſerved to give ſo ſtrong a ſcent, as to attract dogs to the place.

To the *Sportſman*, the ſcent or odour of animals of chace is an object of great importance, though many circumſtances attend it which neither he nor the philoſopher is able ſatisfactorily to explain. To the obſervations that occur under the article HUNTING, in reference to this ſubject, we ſhall here add the following, ſelected from the firſt volume of "Daniel's Rural Sports." Scent, ſays this writer, cannot be aſcertained by the *air* only, it depends alſo on the ſoil; doubtleſs the ſcent moſt favourable to the hound, is when the effluvia, conſtantly perſpiring from the game as it runs, is kept by the gravity of the air to the height of his *breaſt*, for then it neither is above his reach, nor need he ſtoop for it; this is what is meant when ſcent is ſaid to lie *breaſt-high*. Experience tells us that difference of ſoil alters the ſcent. When the leaves begin to fall, and before they are rotted, ſcent lies ill in cover, a ſufficient proof that it does not depend on the air only. Scent alſo varies by difference of motion; the faſter the animal goes, the leſs ſcent it leaves. When game has been ridden after, and hurried on by imprudent ſportſmen, hounds will with difficulty pick out the ſcent, and one reaſon may be, that the particles of ſcent are then more diſſipated; but if the game ſhould have been run by a dog not belonging to the pack, very ſeldom will any ſcent remain.

Scent frequently alters in the ſame day; and without aſſerting what ſcent exactly is, it may be ſaid to depend chiefly on two things, the condition of the ground, and the temperature of the air, which ſhould be moiſt without being wet: when both are in this ſtate, the ſcent is then perfect, and *vice verſâ;* when the ground is hard, and the air dry, there ſeldom will be any ſcent. It ſcarcely ever lies with a north, or an eaſt wind; a ſoutherly wind without rain, and a weſterly one that is not rough, are the beſt. Storms in the air ſeldom fail to deſtroy ſcent. A fine ſun-ſhiny day is not often good for hunting; but a day warm without ſun is generally a perfect one: there are not many ſuch in a whole ſeaſon. In ſome fogs ſcent lies high, in others not at all, depending probably on the quarter the wind is then in. It ſometimes lies very high in a miſt, when not too wet; but if the wet continues to hang upon the boughs and buſhes, it will fall upon the ſcent and deaden it. When the dogs roll, and alſo when cobwebs hang on the buſhes, there is ſeldom much ſcent. *During* a white froſt the ſcent lies high, as it alſo does when the froſt is quite gone; at the time of its going off (which is a critical minute for hounds, in which their game is frequently loſt) ſcent *never* lies. In a hard rain, with the air mild, ſcent will ſometimes be very good. A wet night often produces the beſt chaces, game not then liking to run the cover or the roads. In heathy countries, where the game bruſhes as it goes along, ſcent ſeldom fails; yet, from the incloſures of poor land ſurrounding them, the ſcent is at times very difficult for hounds: the ſudden change from a good to a bad ſcent confuſes their noſes; a ſcent therefore which is leſs good but leſs unequal, is more favourable to hounds. When the ground *carries*, the ſcent is bad for an obvious reaſon, which hare-hunters, who purſue their game over greaſy fallows and dirty roads, have great cauſe to complain of. A remark has been generally made, that ſcent lies beſt in the richeſt ſoils, and thoſe countries which are favourable to horſes are not ſo to hounds; and it has likewiſe been obſerved in ſome particular ſpots, in almoſt every country, let the temperature of the air be as it may, that hounds can never carry a ſcent acroſs them.

It is obſerved, that at the going off of a white froſt, the ſcent never lies. The ſmell of the fox is proverbially offenſive, and is ſuppoſed to proceed, as in many other quadrupeds, from certain glands, ſituated near the tail; yet there is an obſervation in the Syſtema Naturæ of Linnæus, that the fox diffuſes an ambroſial odour from the upper part of the baſe of its tail; and Mr. Schreber, in his Hiſtory of Quadrupeds, alſo remarks, "that the ſmell of the fox is ſtrong and unpleaſant, but on the tail is a ſpot from which proceeds a violaceous ſcent." The rank or general ſmell of the fox ſo exactly reſembles that of the root of crown imperial, as not to be diſtinguiſhed.

The ingenious author of "Obſervations on *Hare*-HUNTING" (ſee that article) contends, that the particles of ſcent evaporated muſt be inconceivably ſmall, as he has taken many hares after a chace of two, three, four, or five hours, without being able to perceive the leaſt difference in weight from thoſe that have been killed on their forms; nor from gentlemen who have hunted box-hares, could he learn, that they diſcovered any viſible waſte in their bodies, further than might be ſuppoſed to ariſe from the effect of diſcharging their groſſer excrements. But admitting a loſs of two or three drachms after ſo long a fatigue, yet how minute muſt be the diviſion of ſo ſmall a quantity of matter, when (deducting the number of thoſe particles that are loſt upon the ground, diſſipated in the air, and extinguiſhed or obſcured by the fetid perſpirations of the dogs and other animals) it affords a ſhare to ſo many couple of hounds for eight or ten miles ſucceſſively. To a ſportſman it is needleſs to obſerve, that ſcent depends on the ſtate of the weather, and is affected by its viciſſitudes: a ſtorm will in an inſtant deſtroy it; nor is this to be wondered at, if we conſider that theſe particles of ſcent are of an exactly equal ſpecific gravity with thoſe of the air, and which always fall and riſe in juſt proportion to it. Huntſmen who are haſty, rate and curſe thoſe hounds, which yeſterday were the beſt in England, for galloping with their noſes in the air, as if their game was flown, when in fact it is in vain for them to ſeek the ſcent in any other place, the increaſing weight of that fluid element having wafted it over their heads. The moſt terrible day for the hare is, when the air is in its mean gravity, tolerably moiſt, but inclining to grow drier, with a mild breeze; the moderate gravity buoys up the ſcent as high as the dog's breaſt, the veſicles of moiſture ſerve as canals to carry the effluvia into their noſes, and the gentle wind ſo much helps to ſpread it, that every hound, even at eight or ten paces diſtance, eſpecially with the wind, may have a due portion.

That the ſame hare will, at divers times, emit finer or groſſer particles, is equally manifeſt to every one obſervant of the frequent changes in one ſingle chace. The courſing of a cur dog is *ever* the occaſion of a fault, and after ſuch an accident, the hounds muſt be again and again put upon the ſcent, before they will acknowledge it for their game: the reaſon is, the change in the motion cauſes one in the perſpiring particles. The alterations of ſcent in a yielding hare are leſs frequently productive of faults, becauſe they are more gradual, and inſenſibly grow ſmaller; but that alterations there are, every dog-boy knows, by the old hounds preſſing forward with greater earneſtneſs, as the hare is nearer her end. Motion, continues this author, is the chief cauſe of diſcharging theſe particles of ſcent, becauſe a hare is very ſeldom winded whilſt quiet in her form, although the hounds are ſo near as even to run over her; ſometimes, indeed, ſhe is chopped upon her ſeat, but this probably is the conſequence of her own curioſity, in moving and riſing up in it, to watch the proceedings of her enemies. It is very plain, the ſlower the hare moves, the ſtronger and groſſer are the particles of ſcent ſhe leaves, which is one reaſon that the morning walk will yield ſcent ſo much longer than in flight when hunted: however, it is remarkable, that theſe odorous particles gradually decay, and end with her life; (this obſervation is controverted by the author now cited;) becauſe it requires the fineſt noſes to lead the cry when near her death; becauſe ſhe is ſo often loſt at the laſt ſquat; and becauſe, if ſhe is knocked on the head before them, there is hardly one in the pack that will ſtop or take any notice of her.

The greateſt art is diſcovered in hunting *the foil*, eſpecially if the hare immediately ſteals back behind the dogs the ſame path ſhe came; it then requires the utmoſt ſkill to diſtinguiſh the new ſcent from the old, when both are mixed and confounded with the ſtrong perſpirations of ſo many dogs and horſes. It is a common practice, when a hare runs in this manner, to ſet people in order to meet, and oblige her to take freſh ground; the conſequence of which has often been, that having met and hallooed her, the hare has redoubled back a few rods, then leaped into ſome hedge or thick brake, and there ſquatted, until the hounds (confuſed in the midſt of two equal burning ſcents) paſs, and very frequently never hit upon her afterwards.

It is diverting to hear country fellows, on ſight of a hare, cry out ſhe is all over in a *ſweat;* the moſt indifferent ſportſmen know to the contrary, and that, on the niceſt examination, no proof has ever been found, any more than of the ſweating of a dog or cat. Another prevailing notion is, that the longer the hare has been hunted, the weaker the ſcent grows. But, continues this author, I never found ſuch an alteration; and if any judgment is allowed to be formed from the action of the hounds, the old ſtaunch dogs will be found to rate on, towards the concluſion of a chace, with additional vigour, ſurely not from decay of ſcent, but the contrary, and from whence they become, every yard they go, more ſenſible of their near approach to the hare, than all the hunters in the field. Yet, ſhould it be ſtill maintained that the ſcent does really decreaſe the more a hare is preſſed, what can it be owing to? To lay it down as fact, without offering ſome reaſon, is certainly a very arbitrary determination. Is it becauſe ſhe is run out of wind? If that is allowed, thoſe who inſiſt that hounds hunt the *foot*, muſt give up the argument; for what reaſon can be aſſigned why a hare's feet, immediately preceding her death, do not leave as ſtrong and equal a ſcent as at firſt ſtarting from her ſeat.

Hares or other creatures, hard run, perform their inſpiration and expiration very quick, at leaſt in the proportion of ſix times to one, ſuppoſing them not urged beyond their natural pace, or to remain perfectly cool and quiet. If therefore ſix expirations, under ſevere purſuit, are equal to one when a hare is juſt ſtarted, what difference can there be in the ſcent?

It may be alleged, the ſcent lies ſtronger at firſt, becauſe it makes its return from a full ſtomach, or that at ſtarting, the lungs having not ſuffered much diſtenſion, ſhe breathes freer, which by running low to the earth, intermixes better with the herbage. On the other hand, that a hare long hunted runs high, and of courſe emits her breath further off from the ſurface, therefore more liable to be ſooner ſeparated and overpowered by the wind.

To the firſt part it is anſwered, the faſter a hare runs, the longer ſhe ſtretches, therefore the lower ſhe lies to the ground; but the farther the hounds are behind, and her breath (although expired ever ſo free,) remains a long time, in proportion to the diſtance, before the dogs come up to enjoy it.

In the ſecond place, the hard-preſſed hare makes her ſtretches ſhorter, which brings her body naturally more upright and high from the ſurface, and the ſcent is hereby more likely to ſuffer from wind and weather; but then as ſhe breathes quick in proportion, and ſhortens her pace in a ſenſible degree, the hounds ſo much as ſhe ſhortens, ſo much do they haſten, being urged on by an increaſing ſcent. The only natural reaſon why a hare, towards the end of a chace, is often difficult to be killed, is, that ſhe confines her works in a much ſhorter compaſs, doubles here and there, over and over, ſhifts, redoubles, and tries all places for reſt and ſecurity, making very much foiling in a little ſpace, which variety of *equal ſcent* puzzles the hounds exceedingly; and if the dogs are not thorough maſters of their buſineſs, or if the air be not in due balance, the difficulty will be the greater.

It is alſo to be remembered, that there is no ſmall accidental difference in the very particles of ſcent, which are more diſtinguiſhable at one time than at another: that there is a different ſcent in other animals of the ſame ſpecies is evident, from the hounds formerly uſed for tracing and purſuing thieves and deer-ſtealers, and likewiſe from any common cur or ſpaniel, who will hunt out their maſter, or their maſter's horſe, diſtinctly from all others; and that it is the ſame with the hare, is no leſs viſible from the old beagles, which will not readily change for a freſh one, unleſs ſhe ſtarts in view, or unleſs a long fault happens, which puts them in confuſion, and inclines them in deſpair to take up with the next ſcent that preſents itſelf.

Of the influence which froſt has upon ſcent, this author obſerves, that he has been often diſappointed in the hounds hunting the trail of the hare up to her ſeat, and frequently been able to hunt her walk in one part of a field, and not in another; that at ten or eleven o'clock, the ſame walk which gave the leaſt ſcent at ſeven in the morning, has afforded the beſt; but what has been more perplexing, the hounds have only been able to hunt it at the wrong end, or backwards, and after many hours' expectation; the fact is, that the hounds are never ſo far from their game, as when they hunt it the warmeſt. All theſe accidents are only the effect of the hoar-froſt, or very groſs dew, (for they never happen otherwiſe,) and from thence muſt the miracle be accounted for. At the going off of a froſt, the mercury is commonly falling, and by conſequence the ſcent ſinking into the ground. The earth is naturally, on ſuch occaſions, fermenting, ſtinking, and very porous, ſo that it is impoſſible but that moſt of the particles of ſcent muſt then be corrupted, buried, or deſtroyed by ſtronger vapours: it is common to hear it ſaid, the hare carries; but that is not all, for by what has been alleged, it is plain ſhe is not ſo eagerly purſued by the ſcent of her feet only. Thus, having aſcertained that a thaw tends to corrupt the particles of ſcent, it leaves a fair reaſon to maintain that the froſt fixes, covers, and preſerves them. Whether this is done by intercepting their aſcent, and precipitating them to the ground by the groſs particles of frozen dew, or whether by protecting them from the penetrating air, is not profeſſed to be decided; but the facts are certain, and confirmed by experience. What deſerves to be noticed is, that the hoar-froſt is very often of ſhort continuance, changeable, and uncertain, both as to its time and place of falling, and hence all theſe difficulties are eaſily reſolved; let the huntſman, when he leaves his bed, examine the windows, which commonly diſcover whether any hoar-froſt has fallen, and in what ſtate of continuance, or going off, it is for the preſent. If it appears to have fallen at two, three, or four in the morning, (ſuppoſe in the month of October, and other times of the year muſt be judged of by proportion,) and to be going off about break of day, it may then be expected that there will be a great difficulty, or indeed impoſſibility, of trailing to the hare's ſeat, becauſe her morning retreat being on the top of the frozen dew, the ſcent is either diſſolved, or corrupted and exhaled. True it is, that after ſuch a night the dogs will find work in every field, and often hunt in full cry, but it will generally be backward, and always in vain; her midnight ramblings, which were covered by the froſt, being now open and fragrant. If the froſt begins later in the morning, after the hare is ſeated, there is nothing to be done until that is gone off. If the froſt began early enough, and continues ſteadily until the hounds are in the field, the ſcent may be made good to her ſeat, as well as at other times on naked ground; although from the foregoing obſervations it muſt be expected to be checked at the going off of the froſt. This author adviſes thoſe who delight in hunting to be provided with a barometer, which inſtrument is of great uſe to the obſervant ſportſman, who, when he riſes in the morning, and finds the air moiſt and temperate, the quickſilver in his glaſs moderately high, or gently convex, may fairly prepare for his diverſion, with the expectation of being ſucceſsful.

All hares, it is obſerved, have more ſcent going *to* and *from* relief, and that all do not leave it in equal degree: the ſcent of down hares is the leaſt; that of incloſures, woodland, and marſh hares, the moſt; eſpecially of one that forms in plaſhy ground, or near a wet ditch, or river ſide, ſuch hare being commonly diſtempered and unhealthy.

The circumſtance of the low-land ſmelling ſtronger than the down hares, proceeds from the ſuperior rankneſs of their food, not in quantity but quality: their confined circle for exerciſe, and the effluvia in woods and incloſures, being far better defended from wind and air, than when ſeated on the bleak hills.

The firſt ring a hare takes is generally the foundation of the enſuing paſtime; all the doubles ſhe afterwards makes, are in a great meaſure like the firſt: a hare will go over great part of the trailed land, and viſit her works of the preceding night and morning; ſometimes a buck will take endways over freſh ground, without offering to return; the doe uſually runs in a circle, unleſs with young, or having recently kindled; at ſuch times ſhe often runs forward, and ſcarcely ever eſcapes with life, being naturally unfit for fatigue; however, both ſexes greatly regulate their conduct according to the ſeaſon and weather. After a rainy night, in a woody country, neither buck nor doe will keep the cover, owing to the drops of wet hanging on the ſpray; they therefore run the highways or ſtony lanes; for as the ſcent naturally lies ſtrong, they hold the roads which take the leaſt, not that a hare judges upon what ſoil the ſcent lies weakeſt; ſhe is chiefly directed by her ears, for the hounds being oftener at fault on the hard paths than the turf, ſhe finds herſelf not ſo cloſely preſſed, and is not ſo much alarmed with the continued cry of the dogs at her heels. The louder the cry, the more ſhe is terrified, and flies the ſwifter; the certain effect of which is, a heart broken ſooner, than with a pack equal in number and goodneſs, but who ſpend their tongues leſs freely. The ſame principle directs the hare to run the covers in autumn: when the ground is dry, and the wind cold at north or eaſt, ſhe then keeps the paths that are covered with leaves, which are ſo continually falling and blowing about, that the beſt hounds can carry no ſcent; her alarms are conſequently ſhort, and ſhe reſts contented where ſhe is leaſt diſturbed.

SCENT-*Bags*, in *Natural Hiſtory*, a name given by Tyſon to thoſe peculiar pouches, or bags, which certain animals, as the civet-cat and muſk animal, have for the receiving the matter of their perfume. Theſe bags are common to more animals than is generally ſuppoſed, and in all have much the ſame qualities, the matter they contain being in moſt of them fetid and diſagreeable, while contained in the bag, and only becoming ſweet and pleaſant when dried, or taken at leaſt from the animal, and ſmelt in ſmall quantities. The weaſel and polecat, with us, have bags of this kind; and the famous bag or pouch of the opoſſum is of the nature of theſe, though it ſerves alſo to the other great purpoſe of receiving and ſheltering the young in time of danger. It contains, like the reſt, a tough and viſcous matter, which oozes out of the glands, and is of a very offenſive ſmell while the creature lives; but as ſoon as it is taken out and dried, the ſmell changes into a fine perfume. The gland of the aper moſchiferus, as Tyſon calls it, is of this kind, containing a glutinous humour of a very offenſive ſmell when freſh, but when dried becoming ſweet and perfumed as muſk. Philoſ. Tranſ. N° 239. p. 125.

SCEPASTRA, the name of a kind of bandage for the head, deſcribed by Galen.

SCEPSIS, in *Ancient Geography*, a town of Aſia, in the interior of Myſia Minor, according to Ptolemy. Strabo expreſsly ſays, that the firſt Scepſis was near the ſummit of mount Ida, and that afterwards another town of the ſame name was built at the diſtance of 40 ſtadia. Æneas had his habitation for ſome time near this town. It was the country of Demetrius the grammarian, and of other perſons eminent for literature and philoſophy. In this town there were ſome conſiderable libraries.

SCEPTICISM, the doctrine and opinion of the Sceptics; called alſo *Pyrrhoniſm*, from the name of its author.

The term Sceptic, in its original Greek, σκεπτικος, properly ſignifies *conſiderative*, and *inquiſitive;* or a man who is ever weighing the reaſons one ſide and the other, without ever deciding between them. It is formed from the verb σκεπτομαι, *I conſider*, *look about*, *deliberate.*

The ancient ſcepticiſm conſiſted in doubting of every thing, in affirming nothing at all, and in keeping the judgment in ſuſpenſe on every ſubject. Sextus Empiricus makes ſcepticiſm to conſiſt in a faculty of oppoſing all appearances; of making all, even contrary things, equally probable; and of proceeding, firſt to an εποχη, or ſuſpenſe of mind, and then to entire undiſturbedneſs or tranquillity.

Hence, theſe great maxims of theirs: Ου μαλλον τουτο η εκεινο, *this no more than that;* Παντι λογω λογος, &c. *every reaſon has another againſt it;* and Ουδεν οριζω, *I determine nothing.*

The proper character, then, of ſcepticiſm is an ακαταληψια, *neutrality*, or ſuch a diſpoſition of mind as does not, upon any occaſion, incline to any thing more than the contrary thing.

This heſitancy of the Sceptics is well deſcribed by Ariſtocles, in Euſeb. de Prepar. Evan. All things are equally indifferent, uncertain, and indeterminate: neither our ſenſes, nor our opinions, give us either truth or falſehood; therefore, neither the one nor the other are to be credited, but all things to be left on a level, without admitting any opinion, inclination, or motion of the mind at all. It is added, that the Sceptics carried this ſuſpenſe of their's ſo far, as even to deny that any thing is either good or evil, juſt or unjuſt, true or falſe; or that any thing is this, more than that.

It is from this acatalepſia of the Sceptics that Deſcartes ſeems to have borrowed his great principle of doubting of all things; as is owned by many of his followers. It muſt be confeſſed, indeed, that there is ſome difference between the doubting of the Sceptics, and that of the Carteſians. In phyſical matters, it is true, there does not ſeem a great deal of difference; and Deſcartes, in that reſpect, may, without much injuſtice, be deemed a Sceptic. But this may be ſaid in his favour, that the great Socrates was ſo far a Sceptic himſelf: phyſical and ſenſible things, he held, were all dubious, and at beſt but probable.

The origin of ſcepticiſm is ſomewhat obſcure. Pyrrho, who lived under Alexander the Great, and made the tour of India in his retinue, is uſually reputed its author: whence the words Pyrrhonians and Sceptics are ordinarily uſed indifferently. See PYRRHONIANS and SCEPTICS.

It muſt be owned, however, that the great dogma of the Sceptics had been countenanced, and even cultivated, before Pyrrho, by Democritus, Heraclitus, &c. Sextus Empiricus ſays expreſsly, that all that Pyrrho did was to improve, illuſtrate, and enforce the dogma, and form the retainers of it into a ſect.

Democritus's philoſophy was near akin to ſcepticiſm; for upon his obſerving, that honey ſeemed ſweet to ſome and bitter to others, he concluded, that it was neither ſweet nor bitter, and thereupon pronounced, ου μαλλον, *non magis*, which is pure ſcepticiſm. Yet the ſame Sextus adds, that Democritus was no Sceptic.

Though Plato argues very ſtrenuouſly againſt the acatalepſy of the Sceptics; yet it is certain that dogma received a great part of its encouragement from Socrates's ſchool, and from Plato's academy. Nay, it was a great controverſy among the ancients, whether Plato himſelf were a Sceptic or a Dogmatiſt. Indeed Plato's deciſive way of ſpeaking, in many caſes, ſeems to leave no great room for ſuch a doubt; but it is certain, his followers, of the new academy, founded by Arceſilaus, gave much into this way; and *nihil ſcitu* was held by them a principle.

Plato refutes the great principle of the Sceptics thus: when you ſay, that all things are incomprehenſible, do you comprehend or conceive that they are thus incomprehenſible, or do you not? if you do, then ſomething is comprehenſible; if you do not, there is no reaſon we ſhould believe you, ſince you do not comprehend your own aſſertion.

Sextus Empiricus obſerves, that Socrates himſelf had a tincture of ſcepticiſm: ſome even make him the author of it, from that cuſtomary ſaying of his, *I know nothing but this, that I know nothing.* If this were the origin of ſcepticiſm, it muſt be owned it was mightily improved afterwards, before Metrodorus ſaid, *I know nothing, not even this, that I know nothing.* The ſame Sextus, however, adds, that Plato, introducing his maſter in his gymnaſtic dialogues, diſputing with the Sophiſts, makes him act the part of a Sceptic.

SCEPTICS, SCEPTICI, a ſect of ancient philoſophers, founded or improved by Pyrrho. Their diſtinguiſhing tenet was, that all things are uncertain and incomprehenſible; contraries equally true; and that the mind is never to aſſent to any thing, but to keep up an abſolute heſitancy or indifference.

Laertius notes, that the followers of Pyrrho had various denominations: from their maſter, they were called *Pyrrhonians;* from their dogma, *Aporetici*, that is doubters, of απορειν, *to doubt;* from their ſuſpenſion and heſitation, *Ephectici*, of επεχειν, *to ſtay*, *to keep back;* and from their never getting beyond the ſearch of truth, *Zetetici*, *ſeekers.*

From Sextus Empiricus we derive the following ſummary of the doctrine of the Sceptics. The office of this ſpecies of philoſophy is to compare external phenomena with mental conceptions, and diſcover their inconſiſtency, and the conſequent uncertainty of all reaſoning from appearances. Its end is to cure that reſtleſsneſs which attends the unſucceſsful ſearch after truth, and, by means of an univerſal ſuſpenſion of judgment, to eſtabliſh mental tranquillity. Its fundamental principle is, that to every argument, an argument of equal weight may, in all caſes, be oppoſed.

The Sceptic admits no tenets, not becauſe he diſcredits the immediate teſtimony of his ſenſes, but becauſe he refuſes his aſſent to thoſe doubtful points which ſcience undertakes to determine. He does not deny that he can ſee, hear, or feel; but he maintains, that the inferences which philoſophers have drawn from the reports of the ſenſes are doubtful; and that any general concluſion deduced from appearances may be overturned by reaſonings equally plauſible with thoſe by which it is ſupported. Scepticiſm allows the exiſtence of ſenſible appearances, becauſe the impreſſions which external objects make upon the power of perception, or the phantaſy, produce an irreſiſtible conviction of their reality; but it demurs upon the poſitions which are advanced concerning the phenomena of nature. As far as concerns the offices of common life, the Sceptic acquieſces in appearances; being neceſſarily impelled to conform to them by his natural appetites and paſſions. Hence he liſtens to the calls of nature, conforms to eſtabliſhed cuſtoms, and practiſes uſeful arts.

The manner in which a Sceptic arrives at an undiſturbed ſtate of mind is entirely caſual. At his entrance upon the ſtudy of philoſophy, he hopes to be able to diſtinguiſh true from falſe opinions, and thus to obtain tranquillity; but being held in ſuſpenſe by contrary reaſoning, he deſpairs of arriving at ſatisfaction, and concludes, that no certain judgment can be formed concerning good and evil. Hence he is accidentally taught, that there is no reaſon for eagerly purſuing any apparent good, or avoiding any apparent evil; and his mind, of courſe, ſettles into a ſtate of undiſturbed tranquillity. So Apelles, when in painting a horſe he had ſucceeded ſo ill in drawing the foam, that, in vexation, he threw the ſponge which he uſed for taking off colours at the picture, by this accidental action formed the repreſentation which he had ſo long in vain exerted his utmoſt ſkill to produce.

Ten diſtinct topics of argument were made uſe of in the ſchool of the Sceptics, with this precaution, that nothing could be poſitively aſſerted, concerning either the number or the force of the arguments which may be urged in ſupport of the doctrine of uncertainty. 1. That on account of the variety which takes place in the organization of different animal bodies, it is probable that the ſame external object preſents different images to different animals; and man can have no reaſon for aſſerting, that his perceptions are more conformable to the real nature of things, than thoſe of inferior animals. 2. That even among men there is a great diverſity both of mind and body, which neceſſarily occaſions a great variety of opinions; every man judging according to his particular apprehenſion, whilſt no one is able to determine the real nature of things. 3. That the different ſenſes give different reports of the ſame thing; whence, bodies may have different properties from thoſe which the ſenſes lead us to ſuppoſe. 4. That the ſame thing appears differently, according to the different diſpoſitions, or circumſtances, of the perſon who perceives it; whence it is impoſſible for any one man to pronounce, that his judgment concerning any object is agreeable to nature. 5. That things aſſume a different aſpect, according to their diſtance, poſition, or place; and no reaſon can be aſſigned why one of theſe aſpects ſhould agree with the real object, rather than the reſt. 6. That no object offers itſelf to the ſenſes, which is not ſo connected and mixed with others, that it cannot be diſtinctly ſeparated and examined. 7. That objects of ſenſe appear exceedingly different, when viewed in a compound, and in a decompoſed ſtate; and it is impoſſible to ſay, which appearance moſt truly expreſſes their real nature. 8. That every object being always viewed in its relation to others, it is impoſſible to determine what it is ſimply, in its own nature. 9. That our judgment is liable to uncertainty, from the circumſtance of frequent or rare occurrence; that which happens every day appearing to us in a very different light from that in which the ſame thing would appear, if it were new. 10. That mankind are continually led into different conceptions concerning the ſame thing, through the influence of cuſtom, law, fabulous tales, and eſtabliſhed opinions. On all theſe accounts, every human judgment is liable to uncertainty; and we can only ſay, concerning any thing, that it ſeems to be, not that it is what it ſeems.

Beſides theſe topics, the later Sceptics made uſe of ſome others. They maintained that every propoſition requires ſome prior propoſition to ſupport it, *in infinitum*, or ſuppoſes ſome axiom, which cannot be proved, and is therefore taken for granted without demonſtration, that is, may be denied; that in argument, the point aſſumed, and that which is to be proved, may often be alternately uſed in each other's place, both being equally uncertain; and, laſtly, that nothing can be underſtood by itſelf, as appears from the endleſs diſputes of philoſophers concerning the nature of things; nor by means of ſomething elſe, whilſt itſelf remains unknown.

On theſe and other ſimilar grounds, the Sceptics not only refuſed their aſſent to propoſitions of every kind, but avoided as much as poſſible every form of ſpeech which expreſſes certainty. When they uſe the term *is*, or any equivalent mode of aſſertion, they confeſs that the term *ſeems*, or ſome other expreſſion of doubt, ſhould be ſubſtituted in its ſtead. Every thing, according to them, being uncertain and incomprehenſible, their language, in all caſes, was, "What you aſſert may be true, or it may not; I ſuſpend my judgment; I determine nothing." They admitted the exiſtence of appearances, but maintained that nothing could be affirmed with certainty concerning the nature of things.

With regard to logic the Sceptics allege, that man can have no certain criterion of truth, becauſe man, the being who judges, is unknown to himſelf; becauſe he has no faculties by which he can judge, beſides thoſe of ſenſe and intellect, of which the former are uncertain and contradictory in their reports, and the latter is doubtful of its own exiſtence and nature, and variable in its operations and concluſions; and becauſe the inſtrument which he makes uſe of in judging, namely, the perception produced in his mind by the impreſſion of external objects, or the phantaſy, is itſelf wholly incomprehenſible, being a certain affection or ſtate of the rational principle, whoſe nature is unknown, and which is eſſentially different from the external object by which it is produced. If the underſtanding judges from any ſuppoſed perception, it judges according to that perception, and not according to the external object; and it is impoſſible that the underſtanding ſhould determine whether the perception produced by an external object be like the object itſelf. A further cauſe of logical uncertainty is, that, except in caſes where the ſenſes are immediately concerned, as when we infer the preſence of fire from ſmoke, we cannot reaſon from that which is manifeſt to that which is concealed.

Syllogiſms, ſay the Sceptics, which eſtabliſh univerſal from particular propoſitions by induction, and demonſtrate the truth of particular from univerſal propoſitions, are a kind of circular reaſoning which can produce no ſatisfactory proof. According to them, definitions are uſeleſs; ſince, before they can be applied, their accuracy muſt be maintained, which is an occaſion of endleſs diſpute. Diviſions are equally uſeleſs, and ſo they pretend are the forms of logic for the refutation of ſophiſms. Whilſt the Sceptic admits nothing certain in logic, he conceives that there may be equal room for doubt in all philoſophical diſquiſitions concerning "Nature." With reſpect to the Deity, he aſks, ſince the Dogmatiſts are not determined whether God be corporeal or incorporeal; whether he be endued with a human form or not; whether he be in place or not; or if he be in place, whether he is in the world or beyond it; what can be certainly known concerning a being of whoſe form, ſubſiſtence, and place, we are ignorant? That an efficient cauſe exiſts, may be inferred with probability from the productions and diſſolutions which take place in nature; for how can theſe changes happen without a cauſe? On the other ſide it may be urged, that if any cauſe be admitted, ſome cauſe muſt be aſſigned for that cauſe, and ſo on *in infinitum*. Each opinion may be ſupported by probable arguments; whence the queſtion muſt remain doubtful.

The Sceptics allege that "material principles" muſt be pronounced incomprehenſible, becauſe philoſophers are diſagreed

agreed concerning their nature; and this diſagreement ſhews, that there are no common axioms on this ſubject, in which all are agreed, and which need no proof. Upon the queſtion concerning "motion," the Sceptics, unable to refute the arguments that have been urged againſt its exiſtence, or to reject the phenomena by which its exiſtence becomes evident, ſuſpend their judgment. They alſo heſitate concerning the poſſibility of increaſe or diminution, tranſpoſition or change of any kind. On the ſubject of "morals," the Sceptics ſuſpend their judgment concerning the ground of the diſtinction admitted by the Stoics, and other Dogmatiſts, between things in their nature good, evil, or indifferent. The arguments on which they inſiſt are ſuch as theſe: The different opinions concerning good ſufficiently prove, that philoſophers are ignorant of its nature. Different men are differently affected by things which are called good, and therefore theſe things in themſelves cannot be good. Deſire itſelf is not good, elſe we ſhould be contented with it, and not endeavour to obtain its object; nor can the external object of deſire be good, becauſe it is external: there appears therefore to be nothing really good, and conſequently nothing really evil. Since different men judge and act differently concerning theſe things, ſome approving what others condemn, and ſome avoiding what others purſue, there can be nothing in nature really good, evil, or indifferent. Hence it follows that ethics can have no foundation in nature. The art of living well is not innate to man; for, if it were, all men would be virtuous: nor can it be taught, for that which is to be taught is doubtful; no one is himſelf ſufficiently inſtructed to become a teacher; nor are there any means of demonſtration, or teſtimony, by which it can be taught; or if this art could be taught, it would only prove the occaſion of endleſs perturbation of mind, ariſing from the eager deſire and purſuit of things ſuppoſed to be good. Tranquillity is beſt obtained, by giving up all expectation of arriving at truth, and ſitting down in a ſtate of total indifference with reſpect to opinions.

Beſides theſe chief grounds of ſcepticiſm, as detailed by the hiſtorian and admirer of the ſect, Sextus Empiricus, there are others, neither leſs ſubtle, nor more ſatisfactory, than the idle quibbles of the Dialectic ſchools. We ſhall here cloſe our general account of ſcepticiſm with remarking, that the Sceptics have advanced nothing upon the important queſtion reſpecting the exiſtence and providence of a Supreme Being, which may not, with the greateſt confidence, be referred to mere verbal quibbling, or to the acknowledged imperfection of the human intellect, which, whilſt it embraces, on the clear and certain ground of final cauſes in nature, the doctrine of the exiſtence of a Deity, muſt always confeſs itſelf unequal to the full comprehenſion of his nature and operations. It muſt be added, that whilſt the Sceptics claſſed the queſtion concerning the exiſtence of the Deity among thoſe ſpeculations, upon which they thought it impoſſible to decide with certainty either in the affirmative or negative, they not only joined in the popular worſhip of the gods, but confeſſed that there appeared to be in the human mind a natural inſtinctive principle of religion: a conceſſion, which ſufficiently invalidates all their futile reaſonings on the ſide of infidelity.

The two ſects of the Sceptics and Academics were nearly allied; but they differed in ſome points, the chief of which are theſe: the Academics laid it down as an axiom, that nothing can be known with certainty; the Pyrrhoniſts perceived the abſurdity of this poſition, and maintained that even this ought not to be poſitively aſſerted. The Academics admitted the real exiſtence of good and evil; the Pyrrhoniſts ſuſpended their judgment upon this point. The Academics, eſpecially the followers of Carneades, allowed different degrees of probability in opinion; but the Sceptics rejected all ſpeculative concluſions, drawn either from the teſtimony of the ſenſes, or from reaſoning; and contended, that we can have no ground for affirming or denying any propoſition, or embracing any one opinion rather than another. Carneades admitted, that by the impreſſions of external objects upon the ſenſes, we are neceſſarily inclined to one opinion more than another; Pyrrho, whilſt he acknowledged that men are neceſſarily impelled to action by their feelings, denied that they are capable of forming any judgment. In common life, the Academics followed probability; the Sceptics, law, cuſtom, and the natural impulſe of appetite. After all, theſe two ſects differed more in appearance than in reality. Both invaded the ſtrong holds of truth; but the Academics did it covertly and with modeſty, whilſt the Sceptics aſſaulted them with open violence, as if they had forſworn all allegiance to reaſon. See ACADEMICS and PYRRHONIANS.

Whatever may have been urged to the contrary by modern advocates for ſcepticiſm, it cannot be reaſonably doubted, that the true cauſes of the continuance of this ſect, through every age, have been that indolence which is inimical to every mental exertion; that kind of intellectual imbecility which, in various degrees, incapacitates men for diſcerning the true nature and condition of things; or, laſtly, that propenſity towards ſubtile refinement, which hinders the moſt vigorous mind in eſtimating different degrees of probability, and accurately diſtinguiſhing truth from error.

Under the Roman emperors, Scepticiſm or Pyrrhoniſm ſunk into diſrepute. Contradictory in its firſt principles to the common notions of mankind, who are inclined to credit their ſenſes; diſgraced by the extravagant practices of ſome of its profeſſors; oppoſed with violence by the whole body of Platoniſts and Stoics; and deſtitute of countenance among the great; it was no wonder that the ſchool of Pyrrho was little frequented, and that few perſons were found, who were willing to ſacrifice intereſt or fame to the empty profeſſion of the ſcience of knowing nothing.

Pyrrhoniſm, however, was not at this time entirely without avowed advocates. Diogenes Laertius mentions a continued ſucceſſion of learned Sceptics from the time of Cicero, when Oeneſidemus reformed the Sceptic ſchool at Alexandria: Zeuxippus, Zeuxis, Antiochus, Menodotus, Herodotus, Sextus, and Saturninus. Of theſe, as if the medical profeſſion peculiarly diſpoſed the mind to ſcepticiſm, ſeveral were phyſicians. Beſides theſe, other Sceptics are mentioned by the ancients. So that when Seneca aſks, "Who is there now, who teaches the doctrine of Pyrrho?" he muſt be underſtood either to ſpeak of the public profeſſors of Pyrrhoniſm, or to repreſent this ſchool as annihilated, in compariſon with that of the Stoics.

Among the Sceptics of this period Sextus Empiricus alone deſerves particular notice; but we have already given an abſtract of the principles of the ſceptical philoſophy from his ſtatement of them. After the age of Sextus, there were not wanting perſons, who followed the Sceptic method of philoſophiſing, either under the name of Academics or Pyrrhoniſts: but the ſect, through the ſpread of the Alexandrian philoſophy, and the Chriſtian religion, by degrees diſappeared, and remained for many centuries wholly unnoticed.

Modern ſcepticiſm differs in many reſpects from ancient Pyrrhoniſm, and appears in ſeveral different forms. Some writers have wholly denied the power of the human underſtanding to inveſtigate truth; and, with the ancient Pyrrhoniſts, have attempted to bring into diſcredit both the principles, and the method of reaſoning, which have been commonly employed in the purſuit of knowledge. Others have buſied themſelves in ſtarting doubts and difficulties on particular topics of inquiry, and endeavoured to involve every ſubject in uncertainty. Whilſt others, more cautious than the reſt, have made uſe of the weapons of ſcepticiſm againſt the hypothetical method of inveſtigating truth, for the general purpoſe of curbing the arrogance of dogmatiſm, or with the particular deſign of turning the ſtudy of nature out of the channel of conjecture into that of experiment. In theology, ſcepticiſm is ſometimes labouring, on the one hand, to overturn the ſacred edifice of divine revelation; and ſometimes, on the other, to ſupport the intereſt of ſuperſtition, or of fanaticiſm, by declaiming on the imbecility of human reaſon.

Our limits will allow our only mentioning in this place ſome of the more celebrated Sceptics, who have appeared ſince the revival of letters; and we ſhall refer for a more particular account of the principal of them to their reſpective biographical articles. The firſt perſon whoſe name occurs in this enumeration was Francis Sanchez; next to him was Jerom Hernhaym, a learned abbot of Prague, who wrote a book "De Typho Generis Humani," or, On the Vain-glory of Human Nature, in which he attempts to expoſe the preſumption, uncertainty, and falſehood of human ſcience. The ſcepticiſm of this writer, ſays Brucker, appears to have been the effect of perverted piety, and may ſerve to prove, that religion itſelf is no ſure guide to men, who diſclaim the uſe and authority of reaſon. Scepticiſm found an abler advocate in Francis Vayer de la Mothe. (See his article.) Among his diſciples were Sorbiere, who tranſlated part of Sextus Empiricus into French; and Fouchier, who wrote "A Hiſtory of the Academic Philoſophy." Another celebrated defender of ſcepticiſm was Peter Daniel Huet. (See HUET.) Next to Huet we may mention Peter Bayle, juſtly reckoned one of the moſt powerful advocates for Pyrrhoniſm. See BAYLE.

Upon a compariſon of the writings of modern Sceptics, it will appear that they have adopted this method of philoſophiſing upon very different grounds, and for very different purpoſes: but in whatever form ſcepticiſm appears, or from whatever cauſe it ſprings, it may be confidently pronounced hoſtile to true philoſophy; for its obvious tendency is to invalidate every principle of human knowledge, to deſtroy every criterion of truth, and to undermine the foundations of all ſcience, human and divine.

We are ſometimes apt, ſays the acute and elegant author of the "Elements of the Philoſophy of the Human Mind," to aſcribe a diſpoſition to unlimited ſcepticiſm to a more than ordinary vigour of intellect. Such a prejudice was by no means unnatural at that period in the hiſtory of modern Europe, when reaſon firſt began to throw off the yoke of authority; and when it unqueſtionably required a ſuperiority of underſtanding, as well as of intrepidity, for an individual to reſiſt the contagion of prevailing ſuperſtition. But in the preſent age, in which the tendency of faſhionable opinions is directly oppoſite to thoſe of the vulgar; the philoſophical creed, or the philoſophical ſcepticiſm of by far the greater number of thoſe who value themſelves on an emancipation from popular errors, ariſes from the very ſame weakneſs with the credulity of the multitude: nor is it going too far to ſay, with Rouſſeau, that "he, who, in the end of the eighteenth century, has brought himſelf to abandon all his early principles without diſcrimination, would probably have been a bigot in the days of the League." In the midſt of theſe contrary impulſes, of faſhionable and of vulgar prejudices, he alone evinces the ſuperiority and the ſtrength of his mind, who is able to diſentangle truth from error; and to oppoſe the clear concluſions of his own unbiaſſed faculties to the united clamours of ſuperſtition, and of falſe philoſophy. Such are the men, whom nature marks out to be the lights of the world; to fix the wavering opinions of the multitude, and to impreſs their own characters on that of their age.

For ſecuring the mind completely from the weakneſſes that have now been deſcribed, and enabling it to maintain a ſteady courſe of inquiry between implicit credulity and unlimited ſcepticiſm, the moſt important of all qualities is a ſincere and devoted attachment to truth; which ſeldom fails to be accompanied with a manly confidence in the clear concluſions of human reaſon. It is ſuch a confidence, united, as it generally is, with perſonal intrepidity, which forms what the French writers call force of character; one of the rareſt endowments, it muſt be confeſſed, of our ſpecies; but which, of all endowments, is the moſt eſſential for rendering a philoſopher happy in himſelf, and a bleſſing to mankind.

There is, our author conceives, good reaſon for hoping, that the ſceptical tendency of the preſent age will be only a temporary evil. While it continues, however, it is an evil of the moſt alarming nature; and, as it extends, in general, not only to religion and morality, but, in ſome meaſure, alſo to politics and the conduct of life, it is equally fatal to the comfort of the individual, and to the improvement of ſociety. Even in its moſt inoffenſive form, when it happens to be united with a peaceable diſpoſition and a benevolent heart, it cannot fail to have the effect of damping every active and patriotic exertion. Convinced that truth is placed beyond the reach of human faculties; and doubtful how far the prejudices we deſpiſe may not be eſſential to the well-being of ſociety, we reſolve to abandon completely all ſpeculative inquiries; and ſuffering ourſelves to be carried quietly along with the ſtream of popular opinions, and of faſhionable manners, determine to amuſe ourſelves, the beſt way we can, with buſineſs or pleaſure, during our ſhort paſſage through this ſcene of illuſions. But he who thinks more favourably of the human powers, and who believes that reaſon was given to man to direct him to his duty and happineſs, will deſpiſe the ſuggeſtions of this timid philoſophy; and while he is conſcious that he is guided in his inquiries only by the love of truth, will reſt aſſured that their reſult will be equally favourable to his own comfort, and to the beſt intereſts of mankind. What, indeed, will be the particular effects in the firſt inſtance, of that general diffuſion of knowledge, which the art of printing muſt ſooner or later produce; and of that ſpirit of reformation with which it cannot fail to be accompanied, it is beyond the reach of human ſagacity to conjecture; but unleſs we chuſe to abandon ourſelves entirely to a deſponding ſcepticiſm, we muſt hope and believe that the progreſs of human reaſon can never be a ſource of permanent diſorder to the world; and that they alone have cauſe to apprehend the conſequences, who are led, by the imperfection of our preſent inſtitutions, to feel themſelves intereſted in perpetuating the prejudices and follies of their ſpecies.

From the obſervations which have been made, it ſufficiently appears, that, in order to ſecure the mind, on the one hand, from the influence of prejudice, and, on the other, from a tendency to unlimited ſcepticiſm, it is neceſſary that it ſhould be able to diſtinguiſh the original and univerſal principles and laws of human nature from the adventitious effects of local ſituation. See Brucker's Hiſt. of

Philoſophy by Enfield, vol. i. and vol. ii. Stewart's Elements, &c. p. 35, &c.

SCEPTRA, a town of Aſia Minor, and one of the ſeven preſented by Cyrus to his favourite Pythareus.

SCEPTRE, Sceptrum, a royal ſtaff, or baton, borne, on ſolemn occaſions, by kings, as a badge of their command and authority.

Nicod derives the word from the Greek σκηπτρον, which he ſays originally ſignified *a javelin,* which the ancient kings uſually bore as a badge of their authority; in regard that inſtrument was in very great veneration among the heathens. But σκηπτρον does not properly ſignify *a javelin,* but *a ſtaff to reſt upon,* from σκηπτω, *innitor, I lean upon.* Accordingly, in the ſimplicity of the earlier ages of the world, the ſceptres of kings were no other than long walking-ſtaves; and Ovid, in ſpeaking of Jupiter, deſcribes him as reſting on his ſceptre. Met. i. v. 178.

The ſceptre is an enſign of royalty of greater antiquity than the crown. The Greek tragic and other poets put ſceptres in the hands of the moſt ancient kings they ever introduce.

Juſtin obſerves, that the ſceptre, in its original, was an *haſta,* or ſpear. He adds, that in the moſt remote antiquity, men adored the haſtæ, or ſceptres, as immortal gods; and that it was upon this account that, even in his time, they ſtill furniſhed the gods with ſceptres. Neptune's ſceptre is his trident.

Tarquin the Elder was the firſt who aſſumed the ſceptre among the Romans.

Le Gendre tells us, that in the firſt race of the French kings, the ſceptre was a golden rod, almoſt always of the ſame height with the king who bore it, and crooked at one end, like a crozier. Frequently, inſtead of a ſceptre, kings are ſeen on medals with a palm in their hand.

SCERAN, in *Geography,* a river of France, which runs into the Sier; 8 miles W. of Annecy.

SCETTA, a province of the kingdom of Angola, in Africa.

SCEY *ſur Saône,* a town of France, in the department of the Upper Saône, and chief place of a canton, in the diſtrict of Veſoul; 7 miles W. of Veſoul. The place contains 1727, and the canton 11,111 inhabitants, on a territory of 235 kiliometres, in 29 communes.

SCHAADEN, a town of Saxony, in the marquiſate of Meiſſen, on the Elbe; 9 miles S.E. of Pirna.

SCHAAF, Charles, in *Biography,* a learned orientaliſt, born at Nuys, in the electorate of Cologne, in 1646, was the ſon of a major in the Heſſian ſervice. He was educated for the church, and at the requeſt of the ſtudents in theology at that univerſity, he was nominated, in 1677, teacher of the Oriental languages. Three years after this he occupied a ſimilar poſt at Leyden. He was afterwards appointed to the chair as Oriental profeſſor. On the whole, he taught in that department of literature, three years at Duiſburg, and fifty at Leyden. He died in 1729, at the age of 83. He was author of "Opus Aramæum, complectens Grammaticam Chaldaico-Syriacam cum Verſione Latina," 8vo. 1686: "Novum Teſtamentum Syriacum cum Verſione Latina," 4to. 1708: "Lexicon Syriacum concordantiale," 4to. 1717: "Epitome Grammatices Hebrææ," 1716. He was engaged in the year 1711 by the curators of the univerſity of Leyden to draw up a catalogue of Oriental books and manuſcripts in its library.

SCHAAFSTADT, in *Geography,* a town of Saxony, in the principality of Merſeburg; 8 miles W. of Merſeburg. N. lat. 51° 40′. E. long. 11° 53′.

SCHAAGEN, a town of Pruſſia, in the province of Samland, with a caſtle, ſituated on a river, which runs into the Curiſch Haff; 10 miles N. of Königſberg.

SCHABBIE, a town of Arabia, in Yemen; 6 miles N.N.W. of Beit al Fakih.

SCHABRAN, or Shabran, a town of Perſia, in the province of Schirvan; 30 miles N.N.E. of Schamachi.

SCHABUR. See Shabur.

SCHACADERO, a town on the iſthmus of Darien, on the river St. Maria. N. lat. 7° 50′.

SCHADE, a river which riſes in the Schall See, in the duchy of Lauenburg, and runs into the Elbe, oppoſite to Blekede.

SCHADECK, a town of Germany, in the county of Linange, or Leinengen, on the Lahn; 14 miles W.S.W. of Wetzlar.

SCHADENBECK, a town of Saxony, in the Vogtland; 1 mile E. of Oelſnitz.

SCHADERWITZ, a town of Sileſia, in the principality of Grotkau; 10 miles N.E. of Neiſſe.

SCHADIDA Calli, in *Botany,* a name given by ſome authors to the plant, which affords the euphorbium of the ſhops.

SCHADRINO, in *Geography,* a town of Ruſſia, in the government of Tobolſk, on the Eniſei; 68 miles N. of Eniſeiſk.

SCHÆFFERIA, in *Botany,* ſo named by Jacquin, in honour of the Rev. James Chriſtian Schæffer, miniſter of the Lutheran church at Ratiſbon, who died A.D. 1790, aged 72. This gentleman was the author of numerous tracts in the ſeveral departments of natural hiſtory, but is more particularly celebrated in the botanical world for his excellent "*Fungorum Icones,*" publiſhed at Ratiſbon in 1762, in four volumes quarto.—Jacq. Amer. 259, Schreb. 681. Willd. Sp. Pl. v. 4. 741. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 5. 371. Swartz Prodr. 38. Juſſ. 426. Lamarck Dict. v. 6. 727. Illuſtr. t. 809.—Claſs and order, *Dioecia Tetrandria.* Nat. Ord. uncertain.

Gen. Ch. Male, *Cal.* Perianth of four or five, ovate, concave, ſpreading leaves. *Cor.* Petals four, lanceolate-ovate, ſpreading, ſometimes wanting. Nectary ſquare, convex, in the middle of the flower. *Stam.* Filaments four, thread-ſhaped, erect; anthers roundiſh, erect. *Piſt.* The rudiment of a germen, without ſtyle or ſtigma.

Female, *Cal.* Perianth inferior, of one leaf, divided into four or five, obtuſe, ſpreading ſegments. *Cor.* Petals four, wider at the tip, deciduous. Nectary a fleſhy margin round the germen. *Piſt.* Germen ſuperior, roundiſh; ſtyles two, very ſhort, reflexed; ſtigmas cloven or entire, compreſſed into a ſort of head. *Peric.* Berry roundiſh, two-celled. *Seeds* ſolitary, hemiſpherical.

Eſſ. Ch. Male, Calyx of four leaves. Petals four, or none. Female, Calyx four or five-cleft. Petals four, deciduous. Berry of two cells. Seeds ſolitary.

1. S. *completa.* White-flowered Schæfferia. Willd. n. 1. Swartz Ind. Occ. v. 1. 327. (Buxi folio majore acuminato, arbor baccifera, fructu minore croceo dipyreno; Sloane Hiſt. Jam. v. 2. 102. t. 209. f. 1.)—Flowers axillary, with four petals.—Originally diſcovered by Jacquin, about Carthagena, in New Spain. Frequent in the Weſt Indies, where, according to Swartz, it flowers in January and June. A ſmall tree or ſhrub whoſe *trunk* is erect, with a ſmooth, aſh-coloured *bark.* *Branches* nearly upright, irregular, rigid, ſmooth. *Leaves* on ſhort ſtalks, alternately ſmaller, ovate, acute, almoſt entire, or very ſlightly notched, veined, rigid, ſomewhat recurved at the tip, green, ſhining. *Flower-ſtalks* many together, conſiderably

ably ſhorter than the leaves, ſcaly at the baſe; each bearing a ſolitary, white *flower*.

2. S. *lateriflora*. Lateral-flowered Schæfferia. Willd. n. 2. Swartz Ind. Occ. v. 1. 329.—Flowers lateral, deſtitute of petals.—Diſcovered at St. Domingo by profeſſor Swartz, flowering in February. A ſmall tree whoſe *trunk* is ſomewhat more than a fathom in height, upright and ſmooth. *Branches* round, aſh-coloured. *Leaves* alternate, ſtalked, ovate, pointed, membranous, a little rigid, browniſh-green, beautifully veined or reticulated. *Flower-ſtalks* lateral, crowded together on the branches, below the leaves. *Flowers* on very ſhort ſtalks, whitiſh-green.

Swartz has hinted, that this ſecond ſpecies may probably be of a different genus.

SCHÆHHARA, in *Geography*, a mountain of Arabia, in the province of Yemen, which, with its 300 villages, is ſhared out among many ſchiecks, moſt of whom were related to the royal family before its elevation to the throne of Sana.

SCHÆHHR, a town of Arabia, in the province of Hadramaut and country of Jafa, from which incenſe, but inferior to that of India, is exported; 18 miles N.E. of Aden. N. lat. 14° 10′. E. long. 47° 50′.

SCHÆNANTH, SCHÆNANTHUS, in *Botany*, the ſame with iſchæmum. See SCÆNANTH.

SCHÆNICLOS, in *Ornithology*, the name of a bird, which, by the deſcription of Bellonius, ſeems to be the ſame with that called by the French *alouette de mer*, the *ſea-lark*, and by us the *ſlint*.

SCHAFA, in *Geography*, a town of Moravia, in the circle of Znaym; 26 miles W.N.W. of Znaym.

SCHAFEI, the ſurname of ABU ABDALLAH MOHAMMED BEN EDRIS, in *Biography*, a celebrated Mohammedan doctor, was born at Gaza A.D. 767. After viſiting Bagdad and Mecca, he went to hear a famous Imam in Egypt, where he died, in 819. He was the firſt of the Mohammedans who wrote on juriſprudence, and he was the author of a work entitled "Oſſoul," or the fundamentals of Iſlamiſm, in which was compriſed the whole Moſlem law, civil and canonical. He wrote two other books on the law, entitled "Sonan" and "Meſnad," and his doctrine is regarded of ſuch authority by the orthodox Moſlems, that the famous Saladin founded a college at Cairo, in which it was forbidden to teach or profeſs any other. The magnificent moſque and college at Herat, in Khoraſan, was appropriated to the doctors of the ſect Schafei.

SCHAFFERLEIT, in *Geography*, a town of Auſtria; 10 miles S.E. of Schwannaſtatt.

SCHAFFHAUSEN, a tolerably well-built town of Switzerland, and capital of a canton, ſituated upon the northern ſhore of the Rhine, and owing its origin to the interruption of the navigation of that river by the cataract at Lauffen; but being at firſt conſtructed for the convenience of unloading the merchandize from the boats, by degrees increaſed to a large town. Schaffhauſen was formerly an imperial city, and governed by an ariſtocracy; but it was mortgaged in the year 1330, by the emperor Louis of Bavaria, to the dukes of Auſtria, and was releaſed from its dependency by the emperor Sigiſmund, when Frederic, duke of Auſtria, was put under the ban of the empire. In 1501 it was admitted a member of the Helvetic confederacy; and is the twelfth canton in rank of all the cantons. It is the leaſt in ſize, being only five leagues long and three broad; and containing about 128 ſquare miles; its population is ſuppoſed to amount to 30,000 ſouls, of which the capital contains about 6000. The whole number of citizens, or burgeſſes, with whom the ſupreme authority ultimately reſides, conſiſts of about 1600, who are divided into 12 tribes; and from theſe are elected 85 members, who form the great and little council. To theſe two councils the adminiſtration of affairs is committed; the executive power being lodged in the ſenate, or little council of 25; and the great council, compriſing the ſenate, finally deciding all appeals, and regulating the more important concerns of government. The revenues of the ſtate are very inconſiderable, the ſalary of the burgomaſter barely amounting to 150*l.* *per annum*. The reformation was introduced here in 1529. The clergy are paid by the ſtate, but their income is ſcarcely ſufficient for their maintenance, the beſt living being only about 100*l.* and the worſt 40*l.* *per annum*. The profeſſors of literature, ſelected from the clergy, are paid by government, and a ſchool is ſupported at the public expence. Sumptuary laws are in force here. The principal article of exportation is wine, as the country abounds in vineyards, but corn is procured from Swabia in exchange for wine. In the town there are a few manufactures of linen, cotton, and ſilk.

Although Schaffhauſen is a frontier-town, it has no garriſon, and the fortifications are weak. The citizens mount guard by turns; and the people of the canton are divided into regular companies of militia, which are exerciſed yearly, and are always prepared to act in defence of their country. Of the famous bridge formerly ſubſiſting at Schaffhauſen, and deſtroyed by the French, we have given an account under the article BRIDGE. About a league from the town is the famous fall of the Rhine at Lauffen, a ſmall village in the canton of Zurich. Writers have given different accounts of the perpendicular height of this cataract, ſome reckoning it 100 feet; but Mr. Coxe ſtates it about 50 or 60 feet. The magnificence of the whole ſcenery in this place exceeds deſcription. The revolutionary government under the influence of France was at an early period adopted at Schaffhauſen. According to the conſtitution of 1801, Schaffhauſen formed the 13th canton reunited with Thurgovia, and ſent ſix deputies, as repreſentatives, to the diet.

This is one of the handſomeſt towns of Switzerland; it has ſix gates, three fauxbourgs, four churches, and a college called "Collegium Humanitatis," with eight profeſſors. Its arſenal is in a fortreſs, built on a hill, at the extremity of the town. Veſſels that paſs down the Rhine pay a toll; 25 miles W. of Conſtance. N. lat. 47° 40′. E. long. 8° 35′.

The canton is ſituated on the N. ſide of the Rhine, and bounded on the N. by the Egau and county of Thengen, on the E. by the landgraviate of Nellenburg, on the S. by the Rhine, and on the W. by the countries of Baar and Stuhlingen. It contains 27 pariſhes and 10 bailiwicks, in which are two towns, *viz.* Schaffhauſen and Neukirch. The religion is Calviniſm.

SCHAFFILT, in *Ornithology*, the name of a very ſmall owl, not larger than the thruſh, called *noctua minor* by authors.

Its eyes are very bright, and of a yellow colour; its ears very large; its feet are feathered to the toes, and the ſoles of its feet are yellow. It is caught in the woods in Germany.

SCHAFFT, in *Geography*, a town of Perſia, in the province of Ghilan, ſituated in a country fertile of rice, and not far from the Caſpian ſea; it abounds with black and white ſwans, herons, cormorants, and variety of water-fowl.

SCHAGEN, a town of Holland; 11 miles N. of Alcmaer.

SCHAHARA. See Schæhhara.

SCHAHI, a town of Perſia, in the province of Adirbeitzan; 30 miles S.W. of Tabris.

SCHAIDT, a town of France, in the department of the Lower Rhine; 7 miles E.N.E. of Wiſſemburg.

SCHAINFELD, or Mark Schainfeld, a town and caſtle of the country of Schwarzenberg; 28 miles N. of Anſpach. N. lat. 49° 44′. E. long. 10° 32′.

Schainfeld *Ober*, a town of Germany, in the lordſhip of Schwarzenberg; 44 miles N. of Mark Schainfeld.

SCHAITANSKOI, a town of Ruſſia, in the province of Ekaterinburg, on the Tchuſovaia; 72 miles N.W. of Ekaterinburg.

SCHAKARILLA, or Schacarilla, in the *Materia Medica*, a name given by ſome authors to the medicinal bark called *cortex thuris*, and *cortex eleutherii* by others. Montani, Exot. p. 8.

SCHAKKAU, in *Geography*, a town of Weſtphalia, in the biſhopric of Fulda; 9 miles E. of Fulda.

SCHAKUNEN, a town of Pruſſian Lithuania, on the Ruſſe; 14 miles N.E. of Tilſit.

SCHAKUNICHE, a town of Pruſſia, in the province of Samland, on the Ruſſe; 24 miles N.W. of Tilſit.

SCHALATZKOI, a cape on the N. coaſt of Ruſſia, in the Frozen ſea. N. lat. 68° 25′. E. long. 169° 14′.

SCHALESTEIN, a town of the duchy of Carinthia; 5 miles N.E. of Wolfſberg.

SCHALITZ, a town of Bohemia, in the circle of Koningingratz; 12 miles N.E. of Koningingratz. N. lat. 50° 18′. E. long. 15° 51′.

SCHALKAU, a town of Germany, in the principality of Coburg; 6 miles N. of Coburg. N. lat. 50° 23′. E. long. 11° 8′.

SCHALKEN, Godfrey, in *Biography*, born at Dort in 1643, was a painter, who obtained celebrity by painting ſcenes of candle and torch light with exceeding great neatneſs and delicacy of pencil. He acquired the firſt rudiments of the art under Van Hoogſtraten, but afterwards improved himſelf in the ſchool of Gerard Dow. On leaving that maſter, he endeavoured to enlarge his ſtyle, by imitating Rembrandt; but finding that taſte above his comprehenſion, he purſued his former courſe, and perſevered in the high finiſhed manner he had firſt adopted.

Though it is impoſſible not to admire the ingenuity with which Schalken's pictures are wrought, yet unfortunately they are not in general of a true tone, but are too red and yellow in the lights. He was led into this miſtake by his mode of ſtudy. It was his cuſtom to place the objects he took for his models in a cloſed room, illumined only by a candle or lamp; and looking at them through a ſmall aperture, painted himſelf by day-light. The contraſt of the two lights naturally produced in the darkened chamber the red and yellow tones to his eye, which are not obſervable ſo diſtinctly at night.

The compoſitions of this painter are agreeable, and his well-managed chiaro-ſcuro heightens that character; and notwithſtanding the defect we have obſerved in his colour, yet the general tones are managed with great dexterity and truth of imitation.

He paſſed ſome time in England, and painted king William, giving him a wax-candle to hold in his hand while he imitated its effect. He afterwards returned to Holland, and ſettled at the Hague, where he died in 1706, aged 63.

SCHALL, or Scial, John Adam, a celebrated miſſionary and mathematician, was born at Cologne in the year 1591. He entered at an early age into the order of the Jeſuits, and having ſtudied at Rome, went to China, where, in 1630, he was made preſident of the tribunal of mathematics, and in 1644 was raiſed to the dignity of mandarin by the emperor Chun-Ti. On the death of that prince, the enemies of the Chriſtian religion took advantage of the minority of his ſucceſſor, Can-Hi, to excite a ſevere perſecution againſt the Jeſuits. Schall was deprived of his office, impriſoned, and condemned to a cruel death; but this part of his ſentence was not carried into execution. He died a natural death in Auguſt 1666. He was the author of "Hiſtorica Narratio de Ortu et Progreſſu Fidei Orthodoxæ in regno Chinenſi ab anno 1581 ad annum 1660 ex literis decem Adami Schall;" which was printed at Vienna in 1665. He was author likewiſe of ſeveral works written in the Chineſe language.

Schall, in *Geography*, a lake of Germany, in the duchy of Saxe-Lauenburg, near the town of Ratzeburg.

SCHALLENBERG, a town of Bavaria, in the provoſtſhip of Berchtolgaden; 4 miles N. of Berchtolgaden.

SCHALMAR, or Schulmar, a town of Weſtphalia, in the county of Lippe; 2 miles S. of Salz-Uſlen.

SCHALMEY, a German wind-inſtrument, played with a reed: it is a 12th below the common clarinet. But the common clarinet is made a ſchalmey by the performer quitting the key under the thumb of the left hand.

The ſchalmey makes the loweſt twelve notes of every clarinet, from E, third ſpace in the baſe, to G, ſecond line in the treble. And the treble clarinet has all the notes above that G to C in altiſſimo, with all the ſemi-tones. The ſchalmey is probably the *ſhaum* mentioned in the ſacred writings.

The inſtrument named *corno ingleſi* is a tenor clarinet played with a reed. It is curved like a horn.

SCHALTEICK, a river of Pruſſian Lithuania, which runs into the Memel; 4 miles N.W. of Tilſit.

SCHAMACHI, or Scamachi, a rich and commercial town of Perſia, the capital of the province of Schirvan, under which name there are two cities, the old and the new. New Schamachi is ſituated in a plain on the river Akſui, about 50 verſts from the Kur, and at the ſame diſtance from the ſea. Its form is quadrangular, each ſide being 800 paces in length. The walls are in tolerable repair, built of unburnt brick, and ſurrounded with a very deep and broad ditch. When this town was taken by the Aga Mahomed Khan, in 1795, the inhabitants were ſuppoſed to amount to 6000 ſouls; but the city, as well as the villages neareſt the plain, were reduced to ruins by that relentleſs tyrant, who did not retire till the month of February of the following year. Theſe villages are inhabited entirely by Armenians, ſeveral of whom are merchants, who trade in ſilk ſtuffs of an inferior quality. Some of the country people in the more level parts lead a nomadical life in moveable huts, conſtructed with wicker-work, and covered with felt and mats, made of reed-graſs. Haſſem was eſtabliſhed as khan in 1796, under the protection of the Ruſſians. The ruins of the old Schamachi, once a large and populous city, are ſtill extant; but they are almoſt entirely hid from the view by thick bruſh-wood. This is the "Schamacha" of the ancients, and is finely ſituated in an angle formed by the ſouthern branch of mount Caucaſus. The inhabitants were wealthy; as the place has beautiful moſchs, conſtructed of hewn ſtone, with vaulted cupolas, and other maſſive public edifices, againſt which time and the fury of barbarous conquerors have hitherto produced but little effect.

SCHAMAGUR, a river of Ruſſia, which runs into the Roſſoſchina, N. lat. 57° 15′. E. long. 112° 34′.

SCHAMANS, in the hiſtory of *Literature* and *Mythology*, a denomination given in Siberia to the *Sammanes* or *Samaneans* of India. (See SAMANEANS.) Both the people and the prieſts of the Schaman religion are at preſent illiterate; but the old Sammanes are ſaid to have written many books in philoſophy and theology. Perſecuted by the Bramins, and driven by them out of India Proper, they are thought to have taken refuge in Pegu, Siam, and other countries beyond the Ganges; and it is ſuppoſed that the religion of thoſe countries was derived from their principles. The religion of the Lamas in Thibet is alſo ſaid to be a reformed Schamaniſm. As the followers of Budda were likewiſe perſecuted by the Bramins, and they alſo fled to the other ſide of the Ganges, ſome are of opinion that he was worſhipped there under the appellation of Somonocodom. But ſince the term for *God* is in the language of ſome of the Tartars *Kutai*, or *Gudai*, and in the Perſian *Khoda*, which very much reſembles our word *God*, Somonocodom may ſignify the "God of the Schamans." As to the word *Schaman*, Loubiere ſays it ſignifies a "man living in the woods," or a *hermit*, which is applicable enough to one who is addicted to a life of contemplation. The word *Talapoin* is ſaid to have the ſame ſignification in the language of ſome of the neighbouring nations.

In the tenets and practices of the Schamans we may ſee a faint outline of the religion of the Hindoos. They believe in one God, the maker of all things; but they think that he pays no attention to the affairs of men, leaving the government of the world to inferior beings, to whom therefore all their devotions are addreſſed. Like the Egyptians and Hindoos, they repreſent the divine attributes by the figure of both the ſexes. Both the celeſtial bodies, and all terreſtrial objects of conſiderable magnitude, are objects of worſhip to them, though ſome of them only believe that mountains, and great bodies of water, are the habitations of the gods, and not themſelves animated. They have, however, a great variety of ſubordinate deities, whom they invoke for different purpoſes, *viz.* one for health, another for their cattle, another when they travel, another for the women, another for their children, another for their reindeer, &c. &c. &c.; thinking that particular ſpirits preſide over and have the care of them. But though they have goddeſſes, as well as gods, they do not believe that they are married. Theſe ſpirits they ſuppoſe appear to their prieſts in the form of bears, ſerpents, or owls; and on this account they have a particular reſpect for thoſe animals. See SIBERIA.

SCHAMBE, in *Geography*, a river of Weſt Florida, which runs into the Penſacola bay, N. lat. 30° 28′. W. long. 87° 12′.

SCHAMBEK, a town of Hungary; 14 miles N.N.W. of Buda.

SCHAMEN, a river of Bavaria, which riſes in the territory of Ulm, and runs into the Aach; one mile S.S.E of Languenau.

SCHAMENDORF, a town of Bavaria, in the biſhopric of Bamberg; 2 miles S. of Weiſmain.

SCHAMER, a mountain of Arabia, between Nedsjed and Bagdad.

SCHAMERS, a town of Bohemia, in the circle of Bechin; 7 miles S.S.E. of Neuhaus.

SCHAMGAL, a diſtrict on the N. ſide of Dagheſtan, in the Perſian empire, ſo called from the title of the prince, about 100 verſts in length, and 50 or 60 in breadth.

SCHAMKOR, a town of Perſian Armenia; 20 miles N. of Kanja.

SCHAMS, *Valley of*, a community of the Grey League in Switzerland, containing eight or nine inconſiderable burghs or villages, ſituated at ſmall diſtances upon each ſide of the Rhine; which is much lower and more fruitful than the Rheinwald.

SCHAMSEE. See SCHONSEE.

SCHANCOOK, a town of America, in New York; 9 miles N. of Lanſinburg.

SCHANDAU, a town of Saxony, in the marggravate of Meiſſen, on the Elbe; 4 miles E. of Konigſtein.

SCHANIS, or SCHAMS, a town of Switzerland, in the bailiwick of Gaſter, having a celebrated abbey, founded in the year 806; 10 miles N. of Glaris.

SCHANNEN, a town of Pruſſia, in the palatinate of Culm; 4 miles S.W. of Straſburg.

SCHANOWA, a town of Bohemia, in the circle of Rakonitz; 6 miles S.W. of Rakonitz.

SCHANTARSKIJA, three iſlands of Ruſſia, at the weſtern extremity of the ſea of Ochotſk. N. lat. 55° 15′ to 55° 30′. E. long. between 138° and 139°.

SCHAPHAN, in *Jewiſh Antiquity*, the name of an animal declared unclean by the law of Moſes.

Interpreters do not agree in their explanation of this word.

SCHARA, or OSARA, in *Geography*, a town of Syria, near the W. coaſt of the Euphrates; 160 miles E.S.E. of Aleppo.

SCHARAAZARGUNSKOI, a town of Ruſſia, in the government of Irkutſk, on the borders of China; 128 miles W.S.W. of Selenginſk.

SCHARDING. See SCHERDING.

SCHAREDSJE, or ZAKA, an iſland in the gulf of Perſia, near the coaſt of Arabia, about 30 miles in circumference. N. lat. 25°. E. long. 54° 15′.

SCHARFEYN, a town of the duchy of Holſtein; 8 miles S.W. of Lutkenburg.

SCHARFFENBERG, a town of Saxony, in the marggravate of Meiſſen, on the Elbe; 4 miles S.E. of Meiſſen.

SCHARKARSKOI, a town of Ruſſia, in the government of Tobolſk, on the Oby; 72 miles S.S.W. of Berezov.

SCHARLA, *Valley of*, a valley of Lower Engadina, in Switzerland, in which are ſilver mines belonging to the houſe of Auſtria, formerly rich, and yielding a conſiderable advantage, but now exhauſted.

SCHARMAH, a town of Arabia Felix, in the province of Hadramaut, ſituated on the ſea-coaſt; 230 miles E.N.E. of Aden.

SCHARMBECK, a town of the duchy of Bremen, which has manufactures of cloth, flannel, and other ſtuffs; 13 miles N. of Bremen.

SCHARNITZ, a town of Tyrol, on the frontiers of Bavaria, fortified in the modern manner. Near it is a paſs over the mountains, of conſiderable importance; 8 miles N.N.W. of Innſpruck.

SCHARNSTEIN, a town of Auſtria; 8 miles E. of Gmunden.

SCHARPAW, a town of Pruſſia, in the province of Pomerelia; 12 miles N. of Marienburg.

SCHAR-PENY, SCHARN-PENY, or *Schorn-peny*. It appears, from our old books, that ſome cuſtomary tenants were obliged to pen up their cattle at night in the pounds or yard of their lord, for the benefit of their dung, or *ſcearn*, as the Saxons called it. In defect of this they were to pay a ſmall compenſation; which was hence called ſchar-peny.

SCHARSE, in *Geography*, a town of Pruſſia, in the palatinate of Culm; 6 miles S. of Culm.

SCHASJAH, a town of Perſia, in Choraſan; 30 miles N. of Meſchid.

SCHASIS, a word uſed by ſome of the writers in ſurgery to expreſs ſcarification.

SCHATECOKE, in *Geography*. See SCATECOKE.

SCHATESTEIN, a town of the duchy of Carinthia; 5 miles N.E. of Wolfsberg.

SCHATSK, a town of Ruſſia, in the government of Tambov; 96 miles N. of Tambov. N. lat. 54° 22′. E. long. 41° 34′.

SCHATZLAR, a town of Bohemia, in the circle of Konigingratz; 6 miles N. of Trautenau.

SCHAVEN, a town of Farther Pomerania, on the Wipper; 4 miles S.E. of Rugenwalde.

SCHAUEN, a lordſhip of Weſtphalia, ſituated between the principality of Halberſtadt, and the county of Wernigerode.

SCHAUENBURG, a town of Weſtphalia, in the county of Schauenburg; 8 miles S.E. of Minden. The county lies on the ſides of the Weſer, about 11 leagues long and four broad, ſurrounded by the principalities of Calenberg and Minden, and the counties of Lippe and Ravenſberg. It is mountainous, but contains a conſiderable quantity of fertile land, with ſome excellent paſtures. It has alſo ſalt-ſprings, quarries of lime-ſtone and free-ſtone, mines of alum, coal, gold, ſilver, copper, and iron; it is well ſupplied with wood, and abounds with game. The inhabitants are Lutherans and Calviniſts. The whole country comprehends 10 towns and 167 villages.

SCHAUENSTEIN, a town of Germany, in the principality of Culmbach; 18 miles N.E. of Culmbach.

SCHAUERS, a town of Auſtria; 6 miles S.W. of Lintz.

SCHAUMBURG, a lordſhip of Germany, in the circle of the Lower Rhine; taking its name from a town and caſtle; 25 miles W.S.W. of Wetzlar.

SCHAUM-EARTH, in *Mineralogy*, ſilvery chalk of Kirwan; a calcareous mineral found in the cavities of limeſtone in Thuringia and the north of Ireland. It has a light yellowiſh and nearly a ſilver white colour. It occurs both in maſſes and diſſeminated, and alſo in fine ſcaly particles. The luſtre is ſhining, ſometimes inclining to ſemimetallic and pearly. The fracture is curvedly foliated; the fragments blunt-edged. It is opaque, ſoft, and friable. Its conſtituent parts, according to Bucholz, are

Lime - - -	51.5
Carbonic acid - -	39
Silex - - -	5.7
Iron - - -	3.3
Water - - -	1

SCHAUNSTAIN, in *Geography*, a town of Auſtria; 4 miles S.W. of Horn.

SCHAUT, a town of Ruſſia, in the government of Upha; 104 miles W.S.W. of Upha.

SCHAYCH, a river of Wurtemberg, which runs into the Neckar, near Nurtingen.

SCHEAT, or SEAT, in *Aſtronomy*, a fixed ſtar of the ſecond magnitude, in the junction of the leg with the left ſhoulder of Pegaſus.

Some call it *Scheat Alpheras*, and ſome *Scheat Pegaſi*.

SCHEAT, or, as it is ſometimes written, *Schead*, or *Sheart*, in *Ichthyology*, a name given by many to the jentling, a fiſh of the chub kind, caught in the Danube, and moſt of the larger rivers in Germany, and called by Geſner and Aldrovand *capito cæruleus*.

This is the *glanus* of Pliny, and the other old Roman authors, and is diſtinguiſhed by Artedi by the name of the *ſilurus* with four beards, near the mouth. This is its character in which it differs from the *lake*, another fiſh of this kind; which, though a genuine ſpecies of ſilurus, has only one beard. See SILURUS.

SCHEBRAK, in *Geography*, a town of Bohemia, in the circle of Beraun; 8 miles S.S.W. of Beraun.

SCHECH SURÉ, or *Surdé*, a ſmall iſland in the Perſian gulf. It is inhabited, and has a town on the S. coaſt: veſſels may obtain water and ſtock. N. lat. 26° 8′. E. long. 54° 30′.

SCHECKENBACH, a town of Bavaria, in the territory of Rothenburg; 5 miles N. of Rothenburg.

SCHEDNITZ, a town of Pruſſia, in the province of Ermeland; 26 miles S.W. of Heilſberg.

SCHEDRIN, a fortreſs of Ruſſia, on the Malka; 80 miles E.S.E. of Ekaterinogrod.

SCHEDUAN, an iſland, or rather a large rock, eight miles in length and five in breadth, in the Red ſea, at an equal diſtance between the coaſts of Aſia and Africa, which has neither water nor plant. N. lat. 27° 35′.

SCHEDULE, SCHEDULA, a ſcroll of paper, or parchment annexed to a will, leaſe, or other deed; containing an inventory of goods, or ſome other matter, omitted in the body of the deed. It is uſed particularly for the ſtatement of effects delivered by a bankrupt to the commiſſioners who are appointed to inveſtigate his affairs.

The word is a diminutive of the Latin *ſcheda*, or Greek σχηδη, *a leaf*, or *piece of paper*.

SCHEELIN CALCAIRE, in *Mineralogy*, a name given by Haüy to the mineral called *tungſten*. See TUNGSTEN.

SCHEELIN *Ferruginé*, a name given by the preceding mineralogiſt to *wolfram*. See WOLFRAM.

SCHEEPEL, in *Commerce*, a corn meaſure in Holland: the laſt of corn contains 27 mudden, 36 ſacks, 108 ſcheepels, 432 vierdevats, or 3456 koops; and contains 173,208 Dutch cubic inches, 147,120 French ditto, and 178,549 Engliſh ditto: 104.28 ſcheepels are equal to 10 Engliſh quarters, and each ſcheepel is equal to 1649 cubic inches.

SCHEER, in *Geography*, a town and lordſhip of Germany; the territory is ſmall, and the ſoil barren, ſituated on the ſide of the Danube; 3 miles N.W. of Mengen. N. lat. 48° 3′. E. long. 9° 20′.—Alſo, a river of France, which runs into the Ille, one league N. of Erſtein.

SCHEFFEL, in *Commerce*, a corn meaſure in Germany: at Berlin, a laſt of wheat contains three wiſpels; but a laſt of oats only 2 wiſpels. A wiſpel contains 2 malters, 24 ſcheffels, 48 viertels, or 384 metzes. The ſcheffel, holding 2621 French cubic inches, or 3189 Engliſh ditto, is a common meaſure all over the country, and weighs, full of rye, about 82lbs. of Berlin weight. Sixty ſcheffels are equal to 89 Engliſh buſhels, or 20 wiſpels, 89 Engliſh quarters. At Hamburgh, a laſt of wheat or rye contains 3 wiſpels, 30 ſcheffels, 60 faſſes, 120 himtens, or 480 ſpints. The ſtandard meaſure of the faſs is $21\frac{1}{7}\frac{3}{8}$ inches in diameter, and $10\frac{3}{8}$ inches deep, Hamburgh meaſure; its contents are, therefore, 3872 Hamburgh cubic inches, 2656 French ditto, or 3213 Engliſh ditto. Hence, 1 ſcheffel, or 2 faſſes = 3 buſhels, Wincheſter meaſure nearly; and 1 laſt of Hamburgh = $89\frac{2}{3}$ds Engliſh buſhels, or $11\frac{5}{24}$ths Engliſh quarters. A ſtock of barley, or oats, contains 3 wiſpels; a laſt ditto, 2 wiſpels, 20 ſcheffels, 60 faſſes, 120 himtens, or 480 ſpints.

Scheffel is alſo uſed for a land meaſure at Hamburgh. A ſcheffel of corn land is the extent generally ſown with a Hamburgh ſcheffel of corn. It contains 200 ſquare ruthes of the longeſt meaſure, each 256 Hamburgh ſquare feet, which give 166 Engliſh ſquare perches, or 1 acre 6 perches.

SCHEFFER, John, in *Biography*, a learned writer, was born at Straſburgh in the year 1621. He had, while he was young, made himſelf known by ſome philological writings, and at the age of 30 he went to Sweden by deſire of the queen Chriſtina, the great patroneſs of learning. He was appointed to the chair of eloquence and politics in the univerſity of Upſal, in which he gave ſo much ſatisfaction, that her majeſty ſettled upon him a good penſion, which ſhe continued after her abdication. To his other employments were added thoſe of librarian to the univerſity, and honorary profeſſor of natural law; and he was likewiſe a diſtinguiſhed member of an academy inſtituted for the inveſtigation of Swediſh antiquities. He died in the year 1679. Many of the works of Scheffer relate to claſſical antiquities, and have been publiſhed in the collections of Gronovius and Grævius. Among theſe may be mentioned "De Militia Navali Veterum," 4to. In Swediſh hiſtory and antiquities he wrote "Upſalia Antiqua;" "Memorabilium Suecicæ Gentis Exemplorum Liber;" "De Antiquis veriſque Regni Suecciæ Inſignibus;" but the work by which he is chiefly known, is entitled "Lapponia, ſive Gentis Regioniſque Lapponum Deſcriptio accurata:" this has been tranſlated into various languages.

Scheffer, Henry Theophilus, a celebrated Swediſh chemiſt, grandſon of the preceding, was born at Stockholm in 1710. Having loſt his parents very early, he was taken under the protection of his uncle, and after going through a courſe of ſchool education, he was ſent to the academy of Upſal, where he proſecuted his ſtudies from the year 1725 to 1733, and applied himſelf particularly to the mathematical ſciences under the celebrated Celſius. In 1731 he attended the college of mines, and went through a courſe of natural and experimental philoſophy. He ſtudied chemiſtry under Brandt, and eſtabliſhed a private laboratory of his own. He viſited the principal mines, and was appointed aſſiſtant to Von Svab at the gold mine diſcovered by that mineralogiſt about the year 1738. From this period he devoted his whole attention to chemical purſuits, and particularly to the art of dyeing, on which he made a great number of experiments. He drew up and preſented to the board of manufactures a long memoir on the indigenous vegetables which might be collected in Sweden for the purpoſes of dyeing: and gave ſome ſtriking proofs that ſilks could be dyed with Swediſh vegetable productions of a yellow colour, which would not fade in the rays of the ſun. He was appointed, in the year 1740, aſſay-maſter in the royal college of mines, and in 1748 was invited to Stockholm in order to form ſome eſtabliſhments for dyeing. In 1756 he was ennobled, and he died in Auguſt 1759. He was a member of the Royal Academy of Sciences at Stockholm, and furniſhed to its Tranſactions a great many papers on chemical and economical ſubjects; among which were, "A Treatiſe on chemical Analyſis;" "Obſervations on dye-ſtuffs; on ſal-ammoniac; on aſcertaining the ſpecific gravity of tin; on potaſh; on coin, &c." The chemical lectures of this author, which were highly eſteemed in their day, were publiſhed by Bergmann in the year 1776. Gen. Biog.

SCHEFFLERA, in *Botany*, named by Forſter in honour of Dr. John Peter Erneſt Scheffler, a phyſician, who was born and reſided at Dantzic about the middle of the laſt century. Many new diſcoveries of this botaniſt were inſerted in Reyger's Flora Gedanenſis, publiſhed in 1764.—Forſt. Gen. t. 23. Schreb. 209. Willd. Sp. Pl. v. 1. 1568. Mart. Mill. Dict. v. 4. Juſſ. 429. Lamarck Dict. v. 7. 728. Illuſtr. t. 221.—Claſs and order, *Pentandria Decagynia.* Nat. Ord. uncertain.

Gen. Ch. *Cal.* Perianth ſuperior, very ſmall, permanent, cloven into five, awl-ſhaped teeth. *Cor.* Petals five, oblong. *Stam.* Filaments five, thread-ſhaped, ſcarcely longer than the petals; anthers roundiſh. *Piſt.* Germen inferior, globular, flattiſh; ſtyles eight or ten, round, ſhort, permanent; ſtigmas ſimple. *Peric.* Capſule a flattened globe, with eight or ten cells. *Seeds* ſolitary, ſemiorbicular, compreſſed.

Eſſ. Ch. Calyx five-toothed, ſuperior. Petals five. Capſule eight or ten-celled, with a ſeed in each cell.

1. S. *digitata.* Willd. Forſt. Prodr. n. 146.—Native of New Zealand. We are unacquainted with any ſpecimen, figure, or even deſcription of this ſpecies, which was ſuſpected, from the number of its ſtyles and ſeeds, by Dr. Solander and the younger Linnæus, to belong to the genus *Aralia.* It may be preſumed from its ſpecific name that the *leaves* are digitate.

SCHEGARKA, in *Geography*, a river of Ruſſia, which runs into the Oby, N. lat. 57° 20′. E. long. 83° 24′.

SCHEGINSKOI, a town of Ruſſia, in the government of Perm; 40 miles W.N.W. of Perm.

SCHEHREZUR. See Sherezur.

SCHEIBEN, Adolphus, chapel-maſter to the king of Denmark, who, in 1737, began a periodical work called Der Critiſche Muſikus, or the *Critical Muſician,* which he continued to the year 1741. This work, which was collected into one thick volume in octavo, 1745, and printed at Leipſic, contains much muſical criticiſm, as well as many characters and anecdotes of the great muſicians who had then diſtinguiſhed themſelves throughout Europe.

SCHEIBENBERG, in *Geography*, a town of Saxony, in the circle of Erzgebirg, near which are mines of ſilver and iron; 4 miles N.E. of Schwarzenberg. N. lat. 50° 27′. E. long. 12° 49′.

SCHEIBS, a town of Auſtria, on the river Erlebach; 20 miles S.W. of St. Polten.

SCHEICH. See Shiech and Scheik.

SCHEICK Ali, in *Geography*, the name of a ſtation in Arabia, where the caravans ſtop in their journey from Egypt to Mecca; 12 miles W. of Akaba.

SCHEIDEC, a mountain of Switzerland, in the canton of Berne; 49 miles S.E. of Thun. It ſtands at the foot of the Wetterhorn, and it is traverſed in paſſing from Grindelwald to Meyringen: it conſiſts entirely of black ſlate, which ſlate compoſes the chain that divides Grindelwald from the plains of Haſli and the lake of Brientz. Scheidec riſes from the banks of the Aar, and the aſcent to it lies through a beautiful foreſt of beech, poplars, mountain-aſh, and pines. The river Reichenbach, which has its ſource at the foot of the Wetterhorn, rolls in numerous cataracts down the ſteep ſides of mount Scheidec, until it joins the Aar near Meyringen. The fall of this river and the paſſage near the Scheidec are particularly deſcribed by Coxe in the firſt volume of his Travels through Switzerland.

SCHEIDINGEN, a town of Saxony, in the principality of Querfurt; 10 miles N.W. of Naumburg.

SCHEIDLACKEN, a town of Pruſſia, in Samland, on the Memel; 4 miles N.E. of Ragnitz.

SCHEIDT, Balthasar, in *Biography*, was born at Straſburgh in 1614. He was educated for the church, and diſplayed ſo early a genius, that in his fourteenth year he delivered a Greek oration, and in a year afterwards he maintained a Hebrew theſis, after which he took the degree of maſter of arts, and then proceeded to Konigſberg, where he read lectures for ſeveral years on the Hebrew and Greek languages. Having made great progreſs in his theological ſtudies, he ſtudied at Straſburgh, where he was made profeſſor of Greek in the year 1645. In 1650 he took his doctor's degree, and was appointed profeſſor of the Oriental languages. He died in 1670. Scheidt read through the whole Miſchna and Gemara, marking, in every inſtance, ſuch paſſages as were calculated to illuſtrate the ſacred ſcriptures, and arranged them according to the order of the books in the Old and New Teſtament. The reſult of this almoſt immenſe labour amounted to ten 4to. volumes, all written by his own hand. The firſt nine related to the Old Teſtament, and were entitled “Nucleus Talmudicus;” the tenth, which related to the New Teſtament, was inſcribed “Præterita Præteritorum.” This has been printed by Meuſchen in his “Nov. Teſt. ex Talmude et Antiquitatibus Ebræorum illuſtratum.” The others remain in MS. Beſides theſe, Scheidt was author of “Herodiana Hiſtoria, cum Indice philologica;” “De Aſtronomia Hebræorum biblica;” “De Hydrographia, cum commentatione nautica;” “De Salomonis Mulieribus;” “De Anno Jubilæo Hebræorum.”

Scheidt, Christian Lewis, known by the name Scheidius, member of the Academy of Sciences at Gottingen, was born in 1709. He ſtudied at the univerſity of Altdorf, where he applied with great diligence to juriſprudence and hiſtory, which he purſued ſtill farther at Straſburgh. After this he engaged as private tutor to ſome perſons, and travelled through different countries on the continent. In 1737, at the dedication of the new univerſity of Gottingen, he obtained the degree of doctor of laws: and in the following year he was appointed extraordinary profeſſor of juriſprudence. In 1739 he was appointed profeſſor in the univerſity of Copenhagen. After this he was made profeſſor of the law of nature and nations, and in 1743 was nominated a counſellor of juſtice. He was now appointed by Chriſtian IV. preceptor to the crown-prince. In 1748 he was recalled to Hanover, to fill the place of Gruber, who had been hiſtorian and librarian to the houſe of Hanover, and immediately upon entering on his office, he ſet about reſcuing from oblivion the uſeful works of his predeceſſors, Leibnitz, Eccard, and Gruber. In 1749 he publiſhed Leibnitz's Diſſertation on the primitive State of the Earth; and in the following year that of Eccard, on the oldeſt Hiſtory of the Germans. To theſe, and to the “Origines Guelphicæ,” which he publiſhed about the ſame time, he prefixed long and learned prefaces, and he alſo took the opportunity of bringing forwards many original documents never before printed. Beſides his occupations in the royal library, he carried on an extenſive correſpondence, and was conſulted by almoſt all the German literati who were employed on hiſtorical works. In 1755 Scheidt removed to Gottingen, where he was involved in much trouble, owing to the infidelity of his wife. He died in 1761. His works were numerous, among which the following, as the moſt intereſting, may be mentioned: “Schediaſma, ex jure publico Danico, de regii Vandalorum tituli Origine et Cauſa;” “Juris publici et privati Convenientiæ et Differentiæ Principes;” “Tractatio Generalis de ratione Belli, ſeu, ut à Gallis dici ſolet, Raiſon de Guerre.” Gen. Biog.

SCHEIFLING, in *Geography*, a town of the duchy of Stiria; 6 miles N.E. of Neumarck.

SCHEIK, a name given by the Turks to the prelates of the Mahometan religion, who pretend to be the legitimate ſucceſſors of Mahomet. Their chief reſides at Mecca.

SCHEINER, Christopher, in *Biography*, a German mathematician and aſtronomer, was born at Wald, near Mindelheim, in Swabia. He entered, when he was twenty years old, into the order of the Jeſuits, and became teacher of the mathematics and the Hebrew language at Ingoldſtadt, Friburg, Briſac, and Rome. He afterwards was appointed rector of the Jeſuits' college at Neiſs in Sileſia, and confeſſor to the archduke Charles. He died at Neiſs in the year 1650: he is thought to have been the firſt who obſerved the ſpots in the ſun, but this fact has been diſputed by Galileo, Harriot, and ſome other perſons. Harriot claims for himſelf the precedence by a year: Galileo maintains that he had ſeen them before Scheiner. There is, however, apparently, no doubt that Scheiner firſt made them known to the public, and he contributed, in no ſmall degree, by his aſſiduity, to eſtabliſh the theory of their motion, from which he inferred that the ſun turned about its axis once in a certain number of days. (See Sun.) Scheiner afterwards continued his obſervations on the ſolar phenomena at Rome with the utmoſt diligence, making drawings of them, deſcriptive of their places, figures, magnitudes, revolutions, and periods, ſo that Riccioli declared there was little reaſon to hope for any better obſervations on theſe ſpots. The reſult of theſe obſervations was publiſhed in a work dedicated to one of the Orſini family, and thence entitled “Roſa Urſina, ſive Sol, ex admirando Facularum et Macularum ſuarum Phænomeno varius,” &c. Almoſt every page of this curious work is ornamented with an image of the ſun, on which the different poſitions of the ſpots are repreſented. Scheiner likewiſe wrote works on optics, and other mathematical and philoſophical ſubjects, among which are, 1. “Oculus, ſive Fundamentum Opticum;” 2. “Pantographice, ſive ars nova delineandi res quaſlibet per Parallelogrammum lineare:” this laſt is a treatiſe on the pantograph, an inſtrument employed for reducing or enlarging figures.

SCHEINFELD, Upper, in *Geography*, a town of Bavaria, in the biſhopric of Bamberg; 21 miles S.W. of Bamberg.

SCHEK, in *Geography*. See Shek.

SCHEKI, a khanſhip of the province of Schirvan, in the Perſian empire, ſituated in the elevated ridge of mountains on the Kur, and bounded by Schamachi, Ganſka, Georgia, and Laſgiſtan. The name of the capital is Nuchi (Nughi, likewiſe Scheki), which conſiſts of 300 houſes, and is defended by a ſtrong caſtle, which reſiſted the victorious troops of Nadir Shah. The population of the city and of the village belonging to it amounts to about 2800 families. To the S. of Nuchi, on the bank of the Kur, lies a large and flouriſhing market-town, called “Akdaſch,” and conſiſting of 300 houſes, to which all the neighbouring nations reſort to trade and to barter their commodities.

SCHEKSNA, a river of Ruſſia, which riſes in lake Bielo, and runs into the Volga, oppoſite to Ribnoi, in the government of Jaroſlavl.

SCHELD, or Scheldt. See Escaut.

SCHELDAR, in *Commerce*, the name of a ſilver coin, current in Denmark, and ſome parts of Germany.

SCHELEBY, or Zeleby, in *Geography*, a town of Syria, on the Euphrates; 48 miles E. of Racca.

SCHELENBURG, a town of Weſtphalia, in the biſhopric of Oſnabruck; 7 miles E. of Oſnabruck.

SCHELESTON, a town of Perſia, in the province of Farſiſtan; 66 miles W.N.W. of Schiras.

SCHELETAU, or Zeletawa, a town of Moravia, in the circle of Iglau; 20 miles S. of Iglau.

SCHELFE, or Neustadt, a town of the principality of Schwerin, immediately connected with Schwerin, but governed by its own magiſtrates.

SCHELHAMMERA, in *Botany*, named by Mr. R. Brown, in honour of Gunther Chriſtopher Schelhammer, formerly profeſſor of medicine at Helmſtadt, afterwards at Jena, and finally, at Kiel, who died in 1716. He was the author of ſeveral botanical diſſertations, and has firſt deſcribed the peculiar change which, during germination, takes place in the cotyledon of palms; ſee Dryander. Bibl. Banks. v. 5. 419, and Brown's Prodr. Haller ſpeaks of him as a man of talents, though not eminent as a botaniſt.—Brown Prodr. Nov. Holl. v. 1. 273.—Claſs and order, *Hexandria Monogynia*. Nat. Ord. *Sarmentaceæ*, Linn. *Junci*, Juſſ. *Melanthaceæ*, Brown.

Eſſ. Ch. Corolla bell-ſhaped, equal, of ſix petals; involute, and ſeparating the ſtamens, before expanſion. Stamens inſerted into the claws of the petals. Anthers poſterior. Stigmas three, recurved. Capſule ſuperior, of three cells, and three valves, with partitions from their centres. Seeds ſeveral, tumid.

A genus of perennial *herbs*, with fibrous *roots*. *Stem* a little ſhrubby at the baſe, angular and leafy, either ſimple or divided. *Leaves* broadiſh, ribbed, either claſping the ſtem, or ſomewhat ſtalked. *Flowers* terminal, ſolitary or aggregate, erect, purple or white. *Stalks* ſingle-flowered, without either a *bractea*, or a joint under the flower. *Anthers* purple. *Schelhammera* is nearly akin to *Uvularia;* eſpecially to *U. chinenſis*, Ker in Curt. Mag. t. 916, which Mr. Brown thinks ought to conſtitute a third genus, intermediate between theſe two. See Uvularia hereafter.

1. S. *undulata*. Br. n. 1.—"Leaves claſping, ovate, waved. Flowers nearly ſolitary. Stem divided. Claws of the petals concave."—Found near port Jackſon, New South Wales.

2. S. *multiflora*. Br. n. 2.—"Leaves with very ſhort ſtalks, reverſed, elliptical, pointed, flat. Flower-ſtalks aggregate; recurved when in fruit. Stem ſimple, zigzag." Gathered by ſir Joſeph Banks in the tropical part of New Holland. Mr. Brown, who has only ſeen dried ſpecimens of this ſpecies, ſuſpects it may prove a diſtinct genus.

SCHELKEN, Klein, in *Geography*, a town of Tranſilvania; 8 miles N.N.W. of Hermenſtadt.

Schelken, *Mark*, a town of Tranſilvania; 4 miles N. of Stolzenburg.

SCHELKOVOIZAVOD, a town of Ruſſia, in the government of Saratov, on the Volga; 20 miles N.E. of Tzaritzin.

SCHELLEN, a town of Pruſſia, in Ermeland; 18 miles S.E. of Heilſberg.

SCHELLENBACH, a town of Bavaria, in the territory of Nuremberg; 4 miles S. of Graffenburg.

SCHELLENBERG, a town of the duchy of Weſtphalia; 17 miles W. of Brilon.—Alſo, a town of Saxony, in the circle of Erzgebirg; 6 miles E. of Chemnitz.—Alſo, a town of Bavaria, in the provoſtſhip of Berchtoldſgaden; 5 miles N.N.E. of Berchtoldſgaden.

SCHELLENT, in *Ornithology*, the name of a ſpecies of duck, found about the ſea-coaſts, of the ſize of the common duck, and differing from the *capo roſſo* in this, that it is twice as large, and the eyes have yellow iriſes; though agreeing with it in the colour of the head, which is of a reddiſh-brown. Its neck is grey, and its back is of a black-grey; its throat, breaſt, and belly white, but near the anus there is a tranſverſe brown line. The long feathers of the wings are black and white, and the tail of a blackiſh-grey.

SCHELLERAU, or Neudorf, in *Geography*, a town of Saxony, in the circle of Erzgebirg; 6 miles W. of Lauenſtein.

SCHELLEY, in *Ichthyology*, a name given in ſome counties of England to the fiſh known among authors by the name of *ferra*. See Guiniad.

SCHELLIN, in *Geography*, a town of Hungary, on the right bank of the Waag; 20 miles N. of Comorn.

SCHELLING, an iſland in the North ſea, belonging to Holland, about five leagues long and one broad, ſituated about 15 miles to the north of Harlingen, between Amelandt and Vlielandt, taken by the Britiſh in 1799.

SCHELLINGSHOF, a town of Auſtria; 4 miles N.N.E. of Bohmiſch Waidhoven.

SCHELLKLINGEN, a town of Bavaria, on the Aach; 8 miles W. of Ulm. N. lat. 48° 22′. E. long. 9° 46′.

SCHELSTRAATE, Emanuel, in *Biography*, a zealous advocate for the authority of the ſee of Rome, was born at Antwerp in the year 1649. He became a canon of his native city, and in 1678 he made himſelf known by a Latin treatiſe on the antiquities of the church. In 1681 he publiſhed a diſſertation on the council of Antioch, held under pope Julius I. in 341. His reputation was now very conſiderable, and he was invited to Rome by pope Innocent XI. and by him appointed keeper of the Vatican library. He was employed by the pope on the following occaſion: the general aſſembly of the French clergy, in 1682, drew up four famous articles, containing an explicit declaration of the doctrine of the Gallican church, reſpecting the temporal and ſpiritual power. In the ſecond of theſe, it declared its inviolable attachment to certain decrees of the council of Conſtance, in which the ſuperiority of general councils to any other ſpiritual power on earth is poſitively eſtabliſhed. Schelſtraate, thinking that he had found in the Vatican manuſcripts which proved that one of theſe decrees had been corrupted by the fathers of the council of Baſil, printed in 1683, at the pope's deſire, a work, entitled "Acta Conſtantinenſis Concilii ad expoſitionem decretorum ejus Seſſionum IV et V facientia, nunc primum ex codicibus Manuſcriptis in lucem erutá et Diſſertatione illuſtrata." For this he was rewarded, in 1687, by a canonry of St. Peter's, and another of St. John of Lateran. In the ſame year he publiſhed a treatiſe on the patriarchal and metropolitan authority. His great work was entitled "Antiquitates Eccleſiæ illuſtratæ," of which he printed the firſt volume at Rome in 1690. During the printing of the ſecond, in 1692, the author died.

SCHEMANAEVSKOI, in *Geography*, a fortreſs of Ruſſia, in the government of Kolivan. N. lat. 50° 28′. E. long. 82° 34′.

SCHEMATISM, σχηματισμος. See Figure and Trope.

SCHEMBERG, in *Geography*, a town of Germany, in the county of Hohenberg; 9 miles E N.E. of Rothweil.

SCHEME, formed from σχεμα, *habitus*, a draught, or repreſentation, of any geometrical or aſtronomical figure, or problem, by lines ſenſible to the eye; or of the celeſtial bodies in their proper places for any moment.

Scheme, *Schema*, σχημα, in the *Ancient Muſic*, is uſed for the varieties ariſing from the different poſitions of tones and ſemitones in a conſonance.

Scheme *Arches*. See Arch.

SCHEMNITZ, in *Geography*, a large and populous town of Hungary, lying between hills, in a long valley, with its houſes ſcattered on both ſides of the acclivity. The Proteſtant inhabitants, being about two-thirds of the whole number, amount to between ſix and ſeven thouſand. In the extent and number of its mine-works, it exceeds all the other mine-towns in Hungary. It has two caſtles, two churches, two chapels, and a college, with a royal mine-office. The gold and ſilver mines furniſh a conſiderable quantity of ore, and employ above five thouſand workmen; but they have ſince the cloſe of the ſeventeenth century much declined; at that time three or four thouſand marks of ſilver were made here every week, whereas the quantity at preſent ſcarcely reaches one hundred. The ore here contains more and better gold than that at Cremnitz, but the profit is not large. The yearly charges to the crown amount to above five hundred thouſand guilders; 80 miles E. of Preſburg. N. lat 47° 30′. E. long. 19° 13′.

SCHENAS, a town of Arabia, in the province of Oman, on the coaſt. N. lat. 24° 29′.

SCHENAU, a town of the duchy of Wurzburg; five miles E. of Biſchoffsheim.

SCHENCK, John, in *Biography*, commonly called Schenck of Graffenburg, was born at Friburg, in June 1531. He received the degree of doctor of phyſic at Tubingen in the year 1554, and ſoon after obtained a public appointment as phyſician to his native town, where he lived with great reputation to the age of 67, and died on the 12th of November 1598. He is principally known at preſent by a large collection of caſes of rare and extraordinary diſeaſes, which he compiled partly from books, and partly from the communications of his friends and contemporaries, and partly from his own experience. From the period at which he lived, it will ſcarcely be expected that his collection ſhould be void of a good deal of the marvellous, or that he ſhould not exhibit many proofs of credulity, and of want of diſcrimination as to the authorities which he quotes. Nevertheleſs this collection ſtill remains a monument of extraordinary induſtry and reſearch, and a repoſitory of much curious matter. The author publiſhed the work in ſeven ſucceſſive volumes, between the years 1584 and 1597, the firſt at Baſle, and the others at Friburg; ſome of them in octavo, and ſome in quarto. But they were collected together after his death by his ſon, John George Schenck, and publiſhed under the title of "Obſervationum Medicarum, rararum, novarum, admirabilium, et monſtroſarum volumen, tomes ſeptem de toto homine inſtitutum;" Franc. 1600. The work has paſſed through ſeveral ſubſequent editions. See Eloy Dict. Hiſt. de la Méd.

Schenck, or *Schenkan Shans*, in *Geography*, a ſtrong fortreſs of Guelderland, in an angle of the Betuwe, where the Rhine divides it into two branches, one of which, paſſing by Nimmegen, is called Wahal, and the other, running towards Arnheim, retains its own name. The fort ſo completely commands the two ſtreams, that nothing can paſs without the governor's permiſſion, and it is conſidered as the centre of communication between Germany and Holland. It took its name from Martin Schenck, of Guelderland, who quitted the Spaniſh ſervice and entered into that of the States, and by their order conſtructed it in the year 1586. It was taken by the Spaniards in 1635, but in the following year beſieged and captured by the Dutch. In 1672 it was taken by Louis XIV., king of France, and in 1673 ceded to the elector of Brandenburgh, who laid claim to it. In 1681 it was delivered up by treaty to ſieur Cuyper, deputy of the council of the States, who garriſoned it with four companies of ſoldiers, and augmented the fortifications; 3 miles N. of Cleves.

SCHENECTADY, a county of New York, erected from that of Albany in 1809, bounded N. by Montgomery and Saratoga counties, E. by Saratoga and Albany, S. by Albany, and W. by Schoharie county. Its area may be about 180 ſquare miles, or 115,200 acres. Its population by the cenſus of 1810 was 10,247. It ſends two members to the houſe of aſſembly.

Schenectady, the capital of the above county, is very agreeably ſituated on the Mohawk flats, on the margin of that river, and contains about 500 houſes and ſtores, the county buildings, Union college, four churches, and places of public worſhip and a bank. The inhabitants, amounting to 5909, are principally Dutch, or their deſcendants, intermixed with emigrants from Europe and the United States; and the electors 622; 20 miles N.W. of Albany. N. lat. 42° 49′. W. long. 73° 28′.

SCHENFELD, a town of Auſtria; 10 miles W.N.W. of Droſendorf.

SCHENFELDT, a town of the duchy of Holſtein; 7 miles N. of Itzehoa.

SCHENGRABEN, a town of Auſtria; 8 miles N.N.E. of Ebenfurth.

SCHENING, or Skening, a town of Sweden, in Eaſt Gothland, ſituated in a fertile country, on the river Skena; formerly large and opulent, having ſeveral churches and convents, but now much declined. It has, however, an annual fair on the 29th of July, which is the greateſt in the whole kingdom; 17 miles W. of Linkoping.

SCHENINGEN, a town of Weſtphalia, in the principality of Wolfenbuttle, which gives name to a diſtrict; 16 miles N. of Halberſtadt.

SCHENKAFELD, a town of Auſtria; 3 miles W.N.W. of Freuſtadt.

SCHENKDENDORF, a town of Luſatia; 6 miles S. of Guben.

SCHENKIRCHEN, a town of Auſtria; 8 miles S.S.W. of Ziſterſdorf.

SCHENKURSK, a town of Ruſſia, in the government of Archangel, on the Vaga; 140 miles S.S.E. of Archangel. N. lat. 62° 30′. E. long. 42° 14′.

SCHENNIS. See Schanis.

SCHENNO, a town of Pruſſia, in Ermeland; 10 miles S.E. of Neidenburg.

SCHENSBURG, a town of New York, S. of lake George; 35 miles N. of Albany.

SCHENUS, in *Ancient Geography*, a gulf of Aſia Minor, upon the coaſt of Caria, between thoſe of Thymnias and Bubeſſius, according to Mela, who places here the town of Hyla.

SCHEPPENSTADT, in *Geography*, a town of Weſtphalia, in the principality of Wolfenbuttel; 13 miles E. of Wolfenbuttel.

SCHERA, in *Ancient Geography*, a town in the interior of Sicily. Ptolemy.

SCHERAU, in *Geography*, a town of Bohemia, in the circle of Pilſen; 8 miles N.N.W. of Teinitz.

SCHERBRO, or Cherborough, or *Serbora*, a river of Africa, which paſſes through the country of Sierra Leone, and runs into the ſea, N. lat. 7° 25′. W. long. 10° 47′.

Scherbro, or *Macapoye*, an iſland of the Atlantic, near the coaſt of Africa, at the mouth of the river Scherbro, with a fort of the ſame name. N. lat. 7° 25′. W. long. 11° 50′.

SCHERDING, or Scharding, a town of Bavaria, on the Inn, with a large fortified caſtle, which had formerly counts of its own; 6 miles S. of Paſſau. N. lat. 48° 26′. E. long. 13° 24′.

SCHERDSJE, a town of Arabia, in the province of Yemen; 40 miles N. of Mocha.

SCHERENBERG, a town of Saxony, in the county of Schwartzburg; 5 miles S.W. of Sonderſhauſen.

SCHEREZUR. See Sherezur.

SCHERIF, a mountain of Arabia, in the province of Yemen; 20 miles W.S.W. of Chamir.

Scherif, a title which the Arabians give to a Mahometan prince, who is the ſovereign of Mecca, in ſubordination to the ſultan. See Sherif.

SCHERKI, in *Geography*, a mountain of Arabia, in the province of Yemen; 8 miles N.E. of Doran.

SCHERM, in *Navigation*, a kind of light boat uſed in Egypt, with a lateen-ſail, which, being without decks, is very dangerous. A ſudden guſt of wind throws this boat on its ſide and ſinks it. The Bogaz, or Bogaſs, as the bar at the mouth of the Nile is called, is to boats of this kind a formidable ſhoal.

Scherm ſignifies, ſays Savary, the velocity with which the boats cut the water. The ſailors of Provence, who are the principal navigators in France, have corrupted this word into *Germ;* ſee that article.

SCHERMBECK, or SCHERNBOECK, in *Geography*, a town of the duchy of Cleves; 27 miles E. of Cleves. N. lat. 51° 46′. E. long. 6° 50′.

SCHERMER, a lake of Holland, partly drained; 3 miles E. of Alcmaer.

SCHERMERNOERN, a town of Holland, E. of Schermer lake; 6 miles E. of Alcmaer.

SCHERNEW, a town of Perſia, in the province of Irac; 48 miles S.W. of Hamadan.

SCHERSTENIKOVA, a town of Ruſſia, in the government of Irkutſk, on the Lena; 24 miles S. of Orlenga.

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SCHEVEN, a town of Pruſſia, in the province of Oberland; 7 miles N.W. of Soldau.

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SCHEWETZ, or SWITZEE, a town of Pomerelia, on the Viſtula; 52 miles S. of Dantzig.

SCHIACHA, a town of Tripoli, in the road from Augela to Siwah.

SCHIASSI, GAETANO MARIA, in *Biography*, an opera compoſer of the Bologna ſchool, author of many works much eſteemed in their day; among which, in 1732, were the gold than that at Cremnitz, but the profit is not large. The yearly charges to the crown amount to above five hundred thouſand guilders; 80 miles E. of Preſburg. N. lat 47° 30′. E. long. 19° 13′.

SCHENAS, a town of Arabia, in the province of Oman, on the coaſt. N. lat. 24° 29′.

SCHENAU, a town of the duchy of Wurzburg; five miles E. of Biſchoffsheim.

SCHENCK, John, in *Biography*, commonly called Schenck of Graffenburg, was born at Friburg, in June 1531. He received the degree of doctor of phyſic at Tubingen in the year 1554, and ſoon after obtained a public appointment as phyſician to his native town, where he lived with great reputation to the age of 67, and died on the 12th of November 1598. He is principally known at preſent by a large collection of caſes of rare and extraordinary diſeaſes, which he compiled partly from books, and partly from the communications of his friends and contemporaries, and partly from his own experience. From the period at which he lived, it will ſcarcely be expected that his collection ſhould be void of a good deal of the marvellous, or that he ſhould not exhibit many proofs of credulity, and of want of diſcrimination as to the authorities which he quotes. Nevertheleſs this collection ſtill remains a monument of extraordinary induſtry and reſearch, and a repoſitory of much curious matter. The author publiſhed the work in ſeven ſucceſſive volumes, between the years 1584 and 1597, the firſt at Baſle, and the others at Friburg; ſome of them in octavo, and ſome in quarto. But they were collected together after his death by his ſon, John George Schenck, and publiſhed under the title of "Obſervationum Medicarum, rararum, novarum, admirabilium, et monſtroſarum volumen, tomes ſeptem de toto homine inſtitutum;" Franc. 1600. The work has paſſed through ſeveral ſubſequent editions. See Eloy Dict. Hiſt. de la Méd.

Schenck, or *Schenkan Shans*, in *Geography*, a ſtrong fortreſs of Guelderland, in an angle of the Betuwe, where the Rhine divides it into two branches, one of which, paſſing by Nimmegen, is called Wahal, and the other, running towards Arnheim, retains its own name. The fort ſo completely commands the two ſtreams, that nothing can paſs without the governor's permiſſion, and it is conſidered as the centre of communication between Germany and Holland. It took its name from Martin Schenck, of Guelderland, who quitted the Spaniſh ſervice and entered into that of the States, and by their order conſtructed it in the year 1586. It was taken by the Spaniards in 1635, but in the following year beſieged and captured by the Dutch. In 1672 it was taken by Louis XIV., king of France, and in 1673 ceded to the elector of Brandenburgh, who laid claim to it. In 1681 it was delivered up by treaty to ſieur Cuyper, deputy of the council of the States, who garriſoned it with four companies of ſoldiers, and augmented the fortifications; 3 miles N. of Cleves.

SCHENECTADY, a county of New York, erected from that of Albany in 1809, bounded N. by Montgomery and Saratoga counties, E. by Saratoga and Albany, S. by Albany, and W. by Schoharie county. Its area may be about 180 ſquare miles, or 115,200 acres. Its population by the cenſus of 1810 was 10,247. It ſends two members to the houſe of aſſembly.

Schenectady, the capital of the above county, is very agreeably ſituated on the Mohawk flats, on the margin of that river, and contains about 500 houſes and ſtores, the county buildings, Union college, four churches, and places of public worſhip and a bank. The inhabitants, amounting to 5909, are principally Dutch, or their deſcendants, intermixed with emigrants from Europe and the United States; and the electors 622; 20 miles N.W. of Albany. N. lat. 42° 49′. W. long. 73° 28′.

SCHENFELD, a town of Auſtria; 10 miles W.N.W. of Droſendorf.

SCHENFELDT, a town of the duchy of Holſtein; 7 miles N. of Itzehoa.

SCHENGRABEN, a town of Auſtria; 8 miles N.N.E. of Ebenfurth.

SCHENING, or Skening, a town of Sweden, in Eaſt Gothland, ſituated in a fertile country, on the river Skena; formerly large and opulent, having ſeveral churches and convents, but now much declined. It has, however, an annual fair on the 29th of July, which is the greateſt in the whole kingdom; 17 miles W. of Linkoping.

SCHENINGEN, a town of Weſtphalia, in the principality of Wolfenbuttle, which gives name to a diſtrict; 16 miles N. of Halberſtadt.

SCHENKAFELD, a town of Auſtria; 3 miles W.N.W. of Freuſtadt.

SCHENKDENDORF, a town of Luſatia; 6 miles S. of Guben.

SCHENKIRCHEN, a town of Auſtria; 8 miles S.S.W. of Ziſterſdorf.

SCHENKURSK, a town of Ruſſia, in the government of Archangel, on the Vaga; 140 miles S.S.E. of Archangel. N. lat. 62° 30′. E. long. 42° 14′.

SCHENNIS. See Schanis.

SCHENNO, a town of Pruſſia, in Ermeland; 10 miles S.E. of Neidenburg.

SCHENSBURG, a town of New York, S. of lake George; 35 miles N. of Albany.

SCHENUS, in *Ancient Geography*, a gulf of Aſia Minor, upon the coaſt of Caria, between thoſe of Thymnias and Bubeſſius, according to Mela, who places here the town of Hyla.

SCHEPPENSTADT, in *Geography*, a town of Weſtphalia, in the principality of Wolfenbuttel; 13 miles E. of Wolfenbuttel.

SCHERA, in *Ancient Geography*, a town in the interior of Sicily. Ptolemy.

SCHERAU, in *Geography*, a town of Bohemia, in the circle of Pilſen; 8 miles N.N.W. of Teinitz.

SCHERBRO, or Cherborough, or *Serbora*, a river of Africa, which paſſes through the country of Sierra Leone, and runs into the ſea, N. lat. 7° 25′. W. long. 10° 47′.

Scherbro, or *Macapoye*, an iſland of the Atlantic, near the coaſt of Africa, at the mouth of the river Scherbro, with a fort of the ſame name. N. lat. 7° 25′. W. long. 11° 50′.

SCHERDING, or Scharding, a town of Bavaria, on the Inn, with a large fortified caſtle, which had formerly counts of its own; 6 miles S. of Paſſau. N. lat. 48° 26′. E. long. 13° 24′.

SCHERDSJE, a town of Arabia, in the province of Yemen; 40 miles N. of Mocha.

SCHERENBERG, a town of Saxony, in the county of Schwartzburg; 5 miles S.W. of Sonderſhauſen.

SCHEREZUR. See Sherezur.

SCHERIF, a mountain of Arabia, in the province of Yemen; 20 miles W.S.W. of Chamir.

Scherif, a title which the Arabians give to a Mahometan prince, who is the ſovereign of Mecca, in ſubordination to the ſultan. See Sherif.

SCHERKI, in *Geography*, a mountain of Arabia, in the province of Yemen; 8 miles N.E. of Doran.

SCHERM, in *Navigation*, a kind of light boat uſed in Egypt, with a lateen-ſail, which, being without decks, is very dangerous. A ſudden guſt of wind throws this boat on its ſide and ſinks it. The Bogaz, or Bogaſs, as the bar at the mouth of the Nile is called, is to boats of this kind a formidable ſhoal.

Scherm ſignifies, ſays Savary, the velocity with which the boats cut the water. The ſailors of Provence, who are the principal navigators in France, have corrupted this word into *Germ;* ſee that article.

SCHERMBECK, or SCHERNBOECK, in *Geography*, a town of the duchy of Cleves; 27 miles E. of Cleves. N. lat. 51° 46′. E. long. 6° 50′.

SCHERMER, a lake of Holland, partly drained; 3 miles E. of Alcmaer.

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SCHIAVI, in *Geography*, a town of Naples, in Abruzzo Citra; 8 miles S.E. of Civita Borella.

SCHIAVONI, Andrea, called *Medula*, in *Biography*, was born in 1522, at Sebenico, in Dalmatia. As his parents were in a low ſtation of life, they were not able to forward the inclination he exhibited at an early age for the art of deſign; but engaged him to a painter of houſes at Venice, where, at his leiſure hours, he employed himſelf in ſtudying ſuch prints from Parmigiano and other painters as his ſcanty means enabled him to procure. The works of Giorgione and Titian in the public buildings of the city, were to him delightful ſources of recreation; and with theſe aids, and determined induſtry and perſeverance, he cultivated his talents in retirement. At length ſome of his productions were ſeen by Titian, who being informed of his unfortunate ſituation, and pleaſed with his taſte, took him under his own care, and ſoon afterwards employed him, with Tintoretto and others, in thoſe grand works he had undertaken for the library of St. Marco. He had here a fair opportunity of diſplaying his power, and three entire cielings are ſhewn as the work of Schiavoni. His improvement was ſufficiently great to encourage him to enter the liſts againſt Tintoretto; and to paint, in competition with him, a picture for the church of the Santa Croce, repreſenting the viſitation of the Virgin to Elizabeth; and though his performance was not received as equal to that of his antagoniſt, yet he was not diſmiſſed without a conſiderable ſhare of applauſe. Tintoretto himſelf reſpected him highly as an artiſt, and as one of the greateſt of the Venetian ſchool; he is even ſaid to have kept a picture of Schiavoni's painting in his own room as a model for colour, though he condemned the incorrectneſs of the drawing.

The neceſſity of providing for his ſubſiſtence, ſuperadded to his natural taſte, cauſed Schiavoni to work with rapidity; and his productions are characterized by that irregularity which neceſſarily attends ſuch a mode of proceeding. They are always, however, fraught with grace and taſte. His compoſitions are numerous and extended, managed with great dexterity, and executed with aſtoniſhing freedom. His attitudes and draperies are gracefully arranged, and the countenances of his figures, eſpecially of his women, very agreeable, though he was by no means attentive to propriety of expreſſion; or rather, like others of the Venetian ſchool, it ſeems never to have been an object of attention with him. Colour, both in arrangement and execution, was the god of his idolatry; and to that he ſacrificed every other requiſite of the art. Two of the moſt admired works of this maſter are in the church of the Padri Teatini at Rimini, repreſenting the Nativity and the Aſſumption of the Virgin. He died at Venice in 1582, at the age of 60.

SCHIBAM, in *Geography*, a large city of Arabia, in the province of Hadramaut, and the ſeat of a powerful prince, diſtant eight days' journey from Sana. Schibam is thought by ſome perſons to be the Saba of the ancients, from which the Sabæans were denominated; a people who occupied the ſouthern parts of Arabia, before Mareb became the capital of their empire; 200 miles E.S.E. of Sana.

SCHICKARD, William, in *Biography*, a learned aſtronomer and orientaliſt, was profeſſor of the Hebrew language at Tubingen, in the early part of the ſeventeenth century. To his knowledge of the Hebrew language he added that of the Oriental tongues, which then began to be ſtudied in the different European ſchools. He publiſhed ſeveral works in this department of literature, of which the moſt conſiderable were "Beſchinat Happeruſchim; or, An Examination of the Hebrew, Chaldean, Cabbaliſtical, and Rabinnical Interpretations of the Book of Geneſis;" "Tarich," or the ſeries of Perſian kings for nearly 400 years; "De Jure Regio Hebræorum;" "Horologium Hebræum," or a method of teaching the Hebrew language in twenty-four hours. Schickard was alſo profeſſor of mathematics, and was author of various inventions for giving ſummary views of the Copernican ſyſtem, and of the lunar motions and appearances. He died of the plague in 1635.

SCHIDLOWITZ, in *Geography*, a town of Poland, in the palatinate of Sandomirz, 50 miles N. of Sandomirz.

SCHIDONI, or Schedone, Bartolomeo, in *Biography*, was born at Modena in 1560. He acquired the principles of the art of painting in the ſchool of the Caracci; but when he left it he appears to have attached himſelf to the ſtudy of the works of Corregio; and no one has imitated the ſtyle of that incomparable maſter more happily than Schidoni. He had already acquired conſiderable reputation by ſome early performances in his native city, when Ranuccio, duke of Parma, took him into his ſervice, and gave him reſidence in his villa at Felegara, where he was at liberty to purſue his ſtudies commodiouſly and in tranquillity. Here he painted ſeveral pictures for his patron; compoſitions of ſacred ſubjects, and from the Roman hiſtory, in the adopted taſte of Corregio; which afterwards found their way to the royal Neapolitan collection. On his return to Modena, he painted his admirable freſcoes in the Palazzo Publico, of the hiſtory of Coriolanus, and of ſeven emblematical figures alſo, in which he emulated the grandeur of ſtyle found in the Duomo of Parma. In the cathedral there is an admirable picture of his, of S. Geminiano reſtoring a dead child to life; which has often been honoured by being miſtaken for a work of Corregio. He alſo painted portraits of the princes of the houſe of Modena, with an equal degree of merit. Large works by Schidoni are extremely rare, and even his eaſel pictures of religious ſubjects, Madonnas, &c. are not frequently to be met with. He is ſaid to have conſumed much of his time in that powerful and unfortunate propenſity to gaming, which waſted his ſubſtance, and diſturbed his mind; and at laſt to have fallen a ſacrifice to it, not being able to overcome the mortification of having one night loſt more than he was able to pay. He died at the age of 56, in 1616.

The imitation of which we have ſpoken, runs through every part of Schidoni's works. The actions of his figures, and particularly the delicate graceful airs of the head, and elegant turns of the limbs and fingers; the arrangement and management of the chiaro-ſcuro, in its breadth and tone, and the hues and *impaſto* of the colouring of his pictures; all exhibit the characteriſtic qualities of his great prototype, and render it difficult ſometimes to diſtinguiſh between them; and, no doubt, many a work of the pupil has paſt, and been ſold, for a production of the maſter. Their inherent merit, however, juſtly entitles them to very high eſtimation, and their rarity gives them an additional value.

SCHIEBENBERG, in *Geography*, a town of Saxony, in the circle of Erzgebirg; 4 miles E. of Schwarzenberg.

SCHIECH, or Scheich, the title of an officer in Arabia of high birth, which can come only by deſcent, and is peculiar to ſovereigns, princes, and independent lords. Among the Bedouins this title belongs to every noble, whether of the higheſt or loweſt order. Their nobles are very numerous, and compoſe almoſt the whole nation; the plebeians are invariably actuated and guided by the ſchiechs, who ſuperintend and direct in every tranſaction. See BEDOWEENS.

SCHIEDAM, in *Geography*, a ſea-port of Holland, ſituated on the canal called the "Schie," which gives it its name, and diſcharges itſelf into the Meuſe, a little below the town. It holds a third rank among the ſmall cities of Holland; 4 miles W. of Rotterdam.

SCHIEDER, a town of Weſtphalia, in the county of Lippe, on the Neiſs. Near it is a caſtle, called "Skiderborg," an ancient fortreſs of the Saxons, where Charlemagne founded a biſhopric, which was afterwards removed to Magdeburg; 5 miles S.E. of Blomberg.

SCHIEGGIA, a town of the duchy of Urbino; 6 miles N.E. of Gubio.

SCHIERKE, a town of Saxony, in the county of Wernigerode; 6 miles S. of Wernigerode.

SCHIERLING, a town of Bavaria, on the Laber; 10 miles S.E. of Kelheim.

SCHIESE, a river of Pruſſian Lithuania, which runs into the Ruſſe, 1 mile N. of Ruſſe.

SCHIEVELBIEN, a town of the New Mark of Brandenburg, on the Rega; 50 miles N.E. of Stargard. N. lat. 15° 44′. E. long. 43° 45′.

SCHIFBECK, a town of the duchy of Holſtein; 4 miles E. of Hamburg.

SCHIHALLIEN, or SCHEHALLIEN, a mountain of Scotland, in the county of Perth, 3550 feet above the level of the ſea; 12 miles E. of George-Town. See ATTRACTION *of Mountains*, and MOUNTAIN.

SCHILDA, a town of Saxony, in the marggraviate of Meiſſen; 7 miles W.S.W. of Torgau. N. lat. 51° 27′. E. long. 12° 56′.

SCHILDBERG, a town of Moravia, in the circle of Olmutz; 7 miles W. of Schomberg.

SCHILDESCHE, a town of Weſtphalia, in the county of Ravenſberg, 2 miles N.W. of Bielefeld.

SCHILE, a town of Aſiatic Turkey, in Natolia, on the S. coaſt of the Black ſea; 14 miles N. of Iſmid.

SCHILLER, FREDERIC, in *Biography*, was born Nov. 10th, 1759, at Marbach, in the duchy of Wurtemberg, where his father was lieutenant in the ſervice of the duke. He was afterwards advanced to the rank of major, and was appointed commandant at "The Solitude," and inſpector of the ſchools of agriculture, which was his favourite purſuit. He was a man of a ſtrong judgment and enlightened underſtanding, and his mother was equally diſtinguiſhed for the qualities of the heart and mind. While a boy, the ſubject of this article was diſtinguiſhed by uncommon ardour of imagination, and nothing afforded him ſo much delight as the peruſal of the prophecies of Ezekiel. "The fancy of this book is inexhauſtible, and its author unfolds new worlds, as it were, to our view. His unfettered imagination burſts forth, and paints in glowing colours, yet in minute detail; and it is his peculiar character, that he tranſports all ſpiritual objects into the ſenſitive world, and converts them into a magnificent picture." When young Schiller was ſufficiently advanced in years, he was placed in the military ſchool at Stuttgard, where the whole plan of inſtruction was formed entirely on the principles of military tactics, and as ſubordination was the chief, almoſt the only virtue inculcated, every exertion of an independent ſpirit was conſidered as a crime of the firſt magnitude. In literature he was diſtinguiſhed among, and ſuperior to, all his contemporaries, and his compoſitions were marked with that poetical character which denoted the turn of his diſpoſition. He was intended for the profeſſion of ſurgery, and attended to lectures in phyſiology and anatomy with great ardour, but from the freedom of his opinions, he was obliged to withdraw himſelf through apprehenſion of the conſequences, and it is ſaid that, at this time, he produced his firſt play, "The Robbers." This tragedy, though full of faults and extravagancies, was ſo powerfully conceived and written, that it became the admiration of all the youth of enthuſiaſtic ſentiments in Germany, and even induced ſeveral ſtudents at Leipſic to deſert their college, with the avowed purpoſe of forming a troop of banditti in the foreſts of Bohemia. Some of their firſt diſorders brought on them a ſummary puniſhment, which reſtored them to their ſenſes. Schiller acquired prodigious fame from his compoſition, which was ſoon tranſlated into ſeveral foreign languages, and the author was appointed to the office of dramatic compoſer to the theatre of Manheim. He was now in a ſituation to learn ſomething of that world which, according to his own confeſſion, he had begun to delineate in his "Robbers," merely from the imagination. His other pieces, entitled "Cabal and Love," the "Conſpiracy of Fieſco," and "Don Carlos," were the fruits of his maturer dramatic efforts. After his tragedies he publiſhed a volume of poems, which were ſo much admired that they procured for him a wife of good family and fortune. This lady, it is ſaid, fell in love with him from reading his works, and ſent him a matrimonial challenge, which he accepted, and this change in his ſituation probably was the means of rouſing him from thoſe habits of diſſipation in which he had indulged, and to which he was in great danger of falling a victim. He was now patronized by the duke of Saxe-Weimar, who conferred on him the title of aulic counſellor, and nominated him to the profeſſorſhip of hiſtory and philoſophy at the univerſity of Jena. He had previouſly written an account of the "Revolt of the Netherlands from the Spaniſh Government," and he now ſet about compoſing his "Hiſtory of the thirty Years' War in Germany." He ſtudied very diligently claſſical literature in general, and drew up lectures worthy of his reputation as a writer. At length he removed to Weimar, where the penſion, as honorary profeſſor from the duke, was continued to him, and where he lived happily in the boſom of his family, and the ſociety of men of letters. He now produced the "Hiſtory of the moſt memorable Conſpiracies," and the "Ghoſt-Seer," which diſplayed the peculiar turn of his mind, and were much read. He, in the latter part of his life, conducted a monthly work publiſhed at Tubingen, and an annual poetical almanac. He compoſed a tragedy entitled "The Maid of Orleans," which was acted at Leipſic in his preſence, when, being diſcovered, he received from the audience the moſt flattering tokens of reſpect and admiration. He died at Weimar on the 9th of May 1805, and he was interred with great funeral ſolemnity. He was to have been borne to his grave by artiſans, but ſeveral of his young friends among the literati and artiſts, deſirous of evincing their love and reſpect for their diſtinguiſhed guide, claimed that honour for themſelves. And between twelve and one at night they carried the coffin to the cemetery. On the following day Mozart's Requiem was performed in the church of the Kirchhof, by the band of the ducal chapel, and the ſuperintendant-general, Vogt, delivered a diſcourſe in memory of the deceaſed. He had been made, without his ſolicitation, a citizen of France, and a noble of the German empire. In his private character Schiller was friendly, candid, and ſincere. In his youth he affected eccentricity in his manners and appearance, and a degree of ſingularity ſeems always to have adhered to him. In all his works, with brilliant ſtrokes of genius, was frequently much of that extravagant repreſentation of paſſion, and violation of nature and probability, which were characteriſtic of him, and of the taſte of his country, and he has been cenſured by the refined critics of the German language for frequent deviations from the purity of that tongue. Monthly Mag. vol. xxi.

SCHILLING, in *Commerce*, a money of account, and copper or baſe ſilver coin in ſeveral parts of Germany, called alſo *ſhilling*. At Aix-la-Chapelle, 6 ſchillings, or 9 guldens, are worth a rix-dollar. At Cologne, the rix-dollar ſpecie is divided into $1\frac{1}{2}$ florin ſpecie, or 8 ſhillings or 20 blafferts; and the rix-dollar current is worth $1\frac{1}{2}$ florin current, or $19\frac{1}{2}$ blafferts; and the Rader florin contains 16 blafferts, an Ort 5 blafferts, or 2 ſhillings, and a ſhilling $2\frac{1}{2}$ blafferts. At Hamburgh, accounts are kept in marks, ſhillings, and pfenings lubs; the mark containing 16 ſhillings, and the ſhilling 12 pfenings. Accounts are alſo ſometimes kept in pounds, ſhillings, and pence Flemiſh, the pound conſiſting of 20 ſhillings, and the ſhilling of 12 pence or grotes. The mark lubs is worth $2\frac{2}{3}$ ſhillings Flemiſh, or 32 grotes, ſo that the ſhilling or ſol lubs is 2 grotes or pence Flemiſh; the rix-dollar is 3 marks or 48 ſhillings, the rix-dollar of exchange 32 ſhillings, and the pound Flemiſh $2\frac{1}{2}$ rix-dollars, or 20 ſhillings Flemiſh. In coins, there are many ſilver and baſe pieces of 1 and 2 marks, alſo of 8, 4, and 2 ſhillings; ſingle ſhillings, ſeckſlings, and dreylings, or pieces of 12, 6, and 3 pfenings. This currency is always reckoned about 22 *per cent.* below banco.

SCHILLINGSFURT, in *Geography*, a town of Germany, belonging to the county of Hohenlohe, inſulated in Anſpach; 11 miles N.E. of Kirchberg.

SCHILPADS, or MATSIMA, an iſland in the North Pacific ocean, belonging to Japan, towards the eaſt of Niphon.

SCHILTACH, a town of Wurtemberg; 44 miles S.W. of Stuttgard. N. lat. 48° 15′. E. long. 8° 21′.

SCHILTBERGER, JOHN, in *Biography*, was born at Munich, in Bavaria, and became a celebrated traveller. In the year 1394 he went with the army of Sigiſmund, king of Hungary, againſt the Turks, but was taken priſoner by Bajazet I. in 1395. Bajazet himſelf being afterwards defeated and made priſoner by Tamerlane, Schiltberger accompanied that conqueror in all his campaigns till the time of his death, in 1405. Schiltberger then came into the ſervice of Sha-Rok, and remained with the auxiliary troops which were left with his brother Miran-Sha to make war on Kara Joſeph, the emir of Turcomania. Miran-Sha was taken and beheaded, and on this event Schiltberger attached himſelf to Abubeker, the ſon of Miran-Sha. About this time Zegra, a ſon of the king of Great Tartary, who reſided with Abubeker, being offered the ſovereignty of Kaptſhak, ſet out for Tartary, attended by Schiltberger and others; and this expedition afforded our traveller an opportunity of becoming acquainted with Tartary and the adjacent diſtricts, then but little known to the Europeans. On his return home he wrote an account of his travels, which was publiſhed at Frankfort without the name of the author. Another edition was printed at the ſame place in 1549. Dr. Forſter ſays, that Schiltberger's narrative furniſhes ſome obſervations, which ſerve to determine with certainty the ſituation and cuſtoms of Tartary at that period: it has, however, been aſſerted by others, that this journal is of but little uſe to thoſe who make geographical reſearches, ſince the author wrote merely from memory, and paid more attention to military events and the cruelty of Tamerlane than the names and poſitions of places. It may however be noted that Schiltberger ſpeaks of wild aſſes found in the mountains of the deſart; and of ſledges drawn by dogs, as is known to be now the caſe in many parts of the Ruſſian empire.

SCHILTER, JOHN, a learned juriſt, was born in 1632 at Pegau, in Miſnia. He ſtudied at Leipſic, and likewiſe at Jena: and he firſt ſettled as an advocate at Naumburg. He was appointed keeper of the archives to prince Maurice of Saxony, and in a few years afterwards he was nominated privy-counſellor to duke Bernard of Saxe-Weimar. After the death of that duke he removed to Straſburg, on being appointed counſellor and advocate of that city, and honorary profeſſor in the univerſity. He died there in 1705. As an author, the principal works of Schilter are; "Codex Juris Alemannici feudalis," 3 vols. 4to. "Theſaurus Antiquitatum Teutonicarum," 3 vols. fol. "Inſtitutions du Droit Canonique," 8vo. "Inſtitutiones Juris Publici," 2 vols. 8vo. "De Pace Religioſa." He likewiſe publiſhed a number of ſeparate diſſertations on ſubjects connected with what are denominated *legal antiquities*.

SCHILTERN, in *Geography*, a town of Moravia, in the circle of Znaym; 12 miles N.W. of Znaym.—Alſo, a town of the duchy of Stiria; 3 miles S. of Oberwoltz.

SCHILU, CHELOW, or *Chetou*, a town of Perſia, in the province of Lariſtan, on the coaſt of the gulf; 20 miles S.E. of Konkûn. N. lat. 27° 50′. E. long. 52° 18′.

SCHILUPP, a river of Pruſſian Lithuania, which joins the Arge before its union with the Nemonin.

SCHILUS, in *Ichthyology*, a name given by many to the fiſh called by the generality of authors *lucioperca*, or the pike fiſh.

SCHIMONIEKEN, in *Geography*, a town of Pruſſia, in the province of Bartenland; 18 miles S.E. of Bartenſtein.

SCHINAUCH, a town of Pruſſia, in the province of Oberland; 10 miles E.S.E. of Holland.

SCHINCK, a town of Tranſilvania; 6 miles N. of Fogaras.

SCHINDLERIN, *The*, in *Biography*, a female opera ſinger, engaged as firſt woman in 1774, when Rauzzini was firſt man. They had performed together at Venice previous to their arrival in England. She was a native of Germany, young, and generally thought handſome. She was engaged at Rauzzini's recommendation. Her figure on the ſtage was elegant and graceful, and ſhe was a good actreſs. Off the ſtage, however, ſhe was coquettiſh, ſilly, and inſipid. Her voice was a mere thread, for the weakneſs of which there was neither taſte nor knowledge to compenſate. Indeed ſhe always appeared *on* the ſtage, what ſhe really was *off* it, Rauzzini's ſcholar; and ſhe was ſo inferior to him in voice and abilities, that he thought it neceſſary to lower himſelf to her level, in order to make her appear to more advantage. It is injudicious and dangerous to conſult either the firſt man or the firſt woman, of an opera, about the performers they are to contend with for fame. Millico wiſhed to ſing with no better performer than his young and inanimate ſcholar, the Carrara. Gabrielli long made it a condition of her coming to England, that Manzoletto ſhould be the firſt man; and Rauzzini made ſeveral ingenious manœuvres to have the Schindlerin for his partner a ſecond ſeaſon. Singers of nearly equal abilities, though of different kinds, regard one another with horror; reciprocally imagining that all the applauſe gained by their colleague is at their own expence.

SCHINELÆON, a word uſed by the ancients to expreſs an oil of maſtick, or oil in which maſtick was diſſolved.

SCHINTA, in *Geography*, a town of Hungary, on the Waag; 2 miles S.S.E. of Serat.

SCHINUS, in *Botany*, σχῖνος, the ancient Greek name of the Maſtick-tree, *Piſtacia Lentiſcus*, transferred to a new genus, which is the Maſtick-tree of Peru.—Linn. Gen. 529. Schreb. 697. Willd. Sp. Pl. v. 4. 817. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 5. 401. Juſſ. 371. Lamarck Dict. v. 4. 229. Illuſtr. t. 822. Gærtn. t. 140.—Claſs and order, *Dioecia Decandria*. Nat. Ord. *Dumoſæ*, Linn. *Terebintaceæ*, Juſſ.

Gen. Ch. Male, *Cal.* Perianth of one leaf, in five deep, ſpreading, acute ſegments. *Cor.* Petals five, oval, ſpreading, with claws. *Stam.* Filaments ten, thread-ſhaped, the length of the corolla, ſpreading; anthers roundiſh. *Piſt.* Rudiment of a germen without a ſtigma.

Female, *Cal.* Perianth inferior, of one leaf, in five deep, acute, permanent ſegments. *Cor.* Petals five, oblong, ſpreading, with claws. *Piſt.* Germen roundiſh; ſtyle none; ſtigmas three, ovate. *Peric.* Berry globoſe, of three cells. *Seeds* ſolitary, globoſe.

Eſſ. Ch. Male, Calyx five-cleft. Petals five.

Female, flower like the male. Berry ſuperior, of three cells.

1. S. *Molle*. Peruvian Maſtick-tree. Linn. Sp. Pl. 1467. Willd. n. 1. Ait. n. 1. Mill. Ic. t. 246. (Molle; Cluſ. Exot. 322. Molli, ſive Molly; Ger. Em. 1530.)

β. Willd. (S. Areira; Linn. Sp. Pl. 1467. Mulli foliis non ſerratis; Feuill. Peruv. v. 3. 43. t. 30. Molle arboris adulti ramus; Cluſ. Cur. Poſt. 50. Ger. Em. 1530).

Leaves pinnate, ſerrated or entire.—Native of dry ſandy places in Peru. A hardy greenhouſe plant, cultivated here even in Gerarde's time. In Sicily it bears the open air, and ripens its beautiful berries, which are never ſeen in our climate, though the flowers are plentiful on old plants, in July and Auguſt. The *ſtem* is ſhrubby in Europe, but is ſaid to form a conſiderable tree in Peru. *Leaves* alternate, of an elegant aſpect, evergreen, pinnate, of numerous, oppoſite or alternate, ſeſſile, ovato-lanceolate, acute, ſmooth leaflets, uſually ſtrongly ſerrated, but in the *S. Areira* of Linnæus, juſtly in our opinion made a variety by Willdenow, they are quite entire. Cluſius indeed ſays they become entire on old plants of the *Molle*. *Flowers* ſmall, yellowiſh-green, in compound axillary panicles. Miller repreſents them as polygamous, ſome being perfect, others female, with incomplete *ſtamens;* and Linnæus mentions the ſame circumſtance, as well as that of the true male flowers having an abortive *piſtil*. Hence we ſhould be induced to refer this genus to the claſs *Decandria*. The *berries*, about as large as a ſmall pea, are, even when dried, of a ſingularly beautiful opaline roſe-colour, and highly poliſhed. The Peruvians are reported to make a vinous drink by boiling theſe berries, as well as a kind of honey, or a ſort of vinegar, according to the mode of management. A reſinous gum exudes from the ſtem when wounded, which partakes of the nature of Maſtick.

2. S. *dependens*. Entire Simple-leaved Schinus. Willd. n. 2. "Orteg. Decad. 8. 102." (Amyris polygama; Cavan. Ic. v. 3. 20. t. 239. Willd. Sp. Pl. v. 2. 333.) —Leaves ſimple, entire; undivided or three-cleft. Flowers moſtly octandrous.—Native of Chili. It flowers about May in the royal garden of Madrid, and was introduced at Kew, where it proves hardy, by ſir J. Banks, in 1790. This is alſo a *tree*, but differing widely from the foregoing, in having ſimple *leaves*, whoſe margin is always entire. *Cluſters* ſimple, axillary, aggregate, rather longer than the foliage. *Flowers* yellowiſh-white, for the moſt part four-cleft, with eight *ſtamens*. *Berries* black. Cavanilles deſcribes theſe *flowers* as occaſionally polygamous, monoecious, or dioecious.

3. S. *dentata*. Tooth-leaved Schinus. Andr. Repoſ. t. 620. Willd. n. 3.—Leaves ſimple, toothed.—Found by Mr. Menzies in the iſland of Owhyhee, and raiſed at Kew, in 1795. A nearly hardy ſhrub, flowering from May to July; ripening fruit, in favourable ſeaſons, at the marquis of Blandford's, where it is trained againſt a wall. The *branches* end each in a thorny point. The *leaves* are alternate, on ſhort ſtalks, lanceolate, ſtrongly toothed or ſerrated, ſmooth. *Flowers* white, numerous, in compound axillary cluſters. *Berries* black, the ſize of ſmall currants, with a ſweet fleſhy pulp, each having many cells, though generally perfecting but one *ſeed*.

SCHINUS, in *Gardening*, affords plants of the ſhrubby evergreen exotic kinds for the greenhouſe and ſtove, of which the ſpecies cultivated are; the Peruvian maſtick-tree (S. molle); and the Braſilian maſtick-tree (S. areira). See the preceding article.

Method of Culture.—The firſt is increaſed by ſowing ſeeds obtained from its native ſituation in pots filled with freſh mould, plunging them in a moderate hot-bed: freſh air and water ſhould be frequently given, when in five or ſix weeks the plants will be fit to plant out in ſeparate ſmall pots filled with ſoft loamy mould, re-plunging them in the hot-bed, and giving proper ſhade till they are freſh rooted. They ſhould afterwards be gradually inured to the open air during the ſummer ſeaſon, being taken under ſhelter before the froſts commence. They are tender while young, requiring a little warmth in winter, but the protection of the greenhouſe will be ſufficient afterwards.

It is alſo capable of being increaſed by layers and cuttings; the former may be laid down in the ſpring, and the latter planted out in the early ſpring; the plants, when well rooted, being treated as the ſeedlings.

And the ſecond ſort may be increaſed in the ſame method; but the plants require to be continued in the ſtove for ſeveral winters, when they may be preſerved in a moderate greenhouſe.

Both theſe plants are durable in their roots and tops, retaining their leaves the whole year.

They afford variety among other exotic plants in greenhouſe collections, when placed in pots in a diverſified manner with them.

SCHINUSSA, in *Ancient Geography*, one of the Sporades iſlands. Pliny.

SCHINZNACH, in *Geography*, a medicinal bath in Switzerland, in the canton of Berne.

SCHIO, a town of Italy, in the Vicentin; 18 miles N.W. of Vicenza.

SCHIPPENHEIL, a town of Pruſſia, in the province of Natangen; 34 miles S.S.E. of Konigſberg. N. lat. 54° 7′. E. long. 81 44′.

SCHIPPER. See SHIPPER.

SCHIPUNOVA, in *Geography*, a town of Ruſſia, in the government of Kolivan; 88 miles S. of Kolivan. N. lat. 53°. E. long. 81° 44′.

SCHIPUNSKOI, a cape on the S.E. coaſt of Kamtſchatka; 76 miles E.S.E. of Verchnei-Kamtſchatſkoi. N. lat. 53° 10′. E. long. 159° 44′.

SCHIRAS, or SHIRAUZ, a city of Perſia, the capital of the province of Fars, or Farſiſtan, and alſo that of Perſia, during the reign of Kurim Khan, is beautifully ſituated between mountains, on a well-cultivated plain between ſeven and eight leagues in length and about four in breadth. The foundation of this city is aſcribed by ſome

Perſian authors to Taimuras, a fabulous hero, and another king of the name of Fars, the great grandſon of Noah; whilſt others, with greater probability, declare that it was firſt built in the 24th year of the Hegira, either by the ſon or the brother of Hejaje. However this be, Schiras was undoubtedly not a city of any repute before the birth of Mahomet. Its title to equal antiquity is much weakened by the want of thoſe ſtupendous ruins, which ſtill atteſt the former grandeur of Perſepolis, of Shapour, and of Suſa; and the inhabitants have ſtill a ſuperſtitious tradition, that before the world was enlightened by the birth of this prophet, the valley in which this city now ſtands compoſed part of the lake of Baktegan. The princes of the family of Boueah, who governed Perſia for many years under the Abaſſides, generally held their court either at Iſpahan or Shirauz, and contributed much to the improvement of the latter, which reached its meridian under the emir Azad a Doulah Delemi, who not only ſurrounded the capital with walls, but improved the whole province of Fars in an extraordinary degree. When the power of the caliphs of Bagdad was overthrown, and Perſia fell under the dominion of the houſe of Seljuck, a petty dynaſty of Attabegs became poſſeſſed of Shirauz, which they held until they became extinct. (We obſerve here, that Attabeg ſignifies a tutor to a prince, and was one of the higheſt titles which the monarchs of the Seljukian dynaſty gave to ſuch nobles as they entruſted with the care of their ſons. Several who bore this title, and were governors of provinces, threw off their allegiance to the laſt of the Seljukian kings, and tranſmitted, with their power, the title of Attabeg to their deſcendants). The Attabegs were ſucceeded by the Moguls, who having retained it for ſome time, were in their turn driven out by the Mo-Zaffar family. Four princes of this race reigned in Shirauz, previouſly to its extirpation by one of the ſons of Timour; whoſe deſcendants continued in poſſeſſion, until they were defeated by the Turkoman princes of the Kara Yuſef. The Turkomans yielded to the ſuperior fortune of the houſe of Sefi; from whoſe hands it ſucceſſively paſſed into thoſe of Nadir Shah and Kurim Khan. This remarkable prince made Shirauz the ſeat of his empire, and not only fortified it, but embelliſhed it with a number of gardens and public buildings. The confuſion that enſued after his death left his ſucceſſors little to add to its improvements. The conteſt for power between the tribes of Kajer and Zund, which deſolated Perſia for ſo many years, terminating in favour of the former; the firſt act of Aga Mahomed Khan, after he had taken poſſeſſion of Shirauz, was to level with the ground many of the fortifications erected by the Vakeel; and at preſent a mud wall is the only defence of the city.

Shirauz has a pleaſing, rather than a grand appearance. It is ſurrounded with many beautiful gardens, the principal of which is that of the Vakeel. The lofty domes of the moſques, ſeen from afar amidſt the trees, diverſify and enrich the view; but on entering the city, the houſes, which are in general ſmall, together with the narrow, filthy ſtreets, give the ſtranger but a mean idea of the ſecond city in the empire. The great bazar, or market place, built by Kurim Khan, forms, however, a diſtinguiſhed exception to this general remark. It is in length about a quarter of a mile, made of yellow burnt brick, and arched at the top, having numerous ſky-lights, which, with its doors and windows, always admit ſufficient light and air, whilſt the ſun and rain are completely excluded. This bazar is allotted to the different trades of the city, all of which have their aſſigned quarters, which they poſſeſs under ſtrict regulations. The ark or citadel, in which the Beglerbeg of Fars reſides, is a fortified ſquare of 80 yards. The royal palace within is far from being an elegant ſtructure; and the pillars of the Dewan Khana, its greateſt ornament, were removed by Aga Mahomed Khan, to adorn his palace at Tehraun.

The environs of Shirauz have been celebrated by many different perſons; and particularly by Hafiz, the Anacreon of the Eaſt, who was a native of this city, and is buried in a ſmall garden about half a mile from the town. The tomb of the poet was erected by Kurim Khan, and is nothing more than a block of white marble, in the form of a coffin, on which are inſcribed two of his poems, and the date of his death. His works are not, as ſome have ſtated, chained to his tomb; but a ſplendid copy of them is always kept in an adjoining houſe. Not far from the tomb of Hafiz is the garden of Jehan Numa, the moſt beautiful in the neighbourhood of Schiras, and known, in the time of Kurim, by the title of the Vakeel's garden. Its name is changed by his preſent majeſty, who, when governor of Fars, built a houſe in it for a ſummer reſidence. He alſo commenced another, on an eminence that commands a beautiful view of the city and its vicinity, which is named Tukht Kajerea, or the throne of Kajers; but both the houſe and gardens are unfiniſhed. The garden of Jehan Numa is almoſt a mile from the town, and that of Kajerea ſomewhat more. Between them runs the famous ſtream of Rocknabad (Abi Rockny), a ſmall rivulet of the cleareſt water, not more than two feet in width; and not a ſhrub now remains of the bower of Moſſella, the ſituation of which is only marked by the ruins of an ancient tower. The inhabitants of Shirauz, who are ſaid to amount to about 40,000, enjoy one of the fineſt climates in the world, and have nothing to regret but the want of a wiſe and liberal government. The commerce of the city is extenſive, and has greatly increaſed within a few years paſt. Its principal trade is with Buſhire, Yezd, and Iſpahan. From the former it imports ſugar, pepper, cinnamon, chintz, glaſs, hardware, piece-goods, &c.: theſe articles are exported to Yezd and Iſpahan, receiving in return the manufactures of thoſe cities. Shirauz is famous for its wine, which is diſtinguiſhed by its fine colour and rich taſte. It is manufactured from grapes, obtained from the vineyards that cover the level plains of Ardecoone, Gooum, and Shirauz, and alſo the ſides and ſummits of the adjoining mountains. Schiras is 160 miles S. of Iſpahan. N. lat. 29° 36′. E. long. 52° 44′. Kinneir's Memoirs of the Perſian Empire.

SCHIREMOTE, or Scyremote. See Scyremot.

SCHIRGISWALDA, in *Geography*, a town of Luſatia; 6 miles S. of Budiſſen.

SCHIRMECH, a town of France, in the department of the Voſges, and chief place of a canton, in the diſtrict of St. Dié. The place contains 932, and the canton 9164 inhabitants, on a territory of 205 kiliometres, in 15 communes.

SCHIROKOIBUERAK, a town of Ruſſia, in the government of Saratov, on the Volga; 12 miles N.E. of Volſk.

SCHIRRA, a town of Arabia, in the province of Yemen; 20 miles N.N.E. of Sana.

SCHIRROSIS, a name given to a diſorder of the eye, ariſing from the violence of a long continued inflammation, when the fleſh increaſes in bulk, and aſſumes a livid colour.

SCHIRRUS. See Scirrhus.

Schirrus *of the Teſticle*, &c. See Sarcocele.

SCHIRVAN, or Schirwan, in *Geography*, a province of Perſia, the largeſt and moſt important diviſion of the ſouthern Caucaſus, extends along the Caſpian 300 verſts, from the mouth of the Cyrus or Kur to the little river Rubas. It is bounded on the E. by the Caſpian, on the N. by Dagheſtan, on the S. and S.W. by the Cyrus, and the plains of Mogam, and on the N.W. by the kingdom of Georgia, with the khanſhip of Ganſcha. The breadth of this province, reckoning from the Caſpian, is very various. On the Rubas it is ſcarcely 25 verſts; near Kuba it amounts to about 60; from the mouth of the Ata nearly 80; whilſt from the points of the peninſula of Abſcharon, neareſt Badku, to the Kur, it is 240. With regard to the natural ſtate of the country, Schirwan may be divided into four diſtricts: viz. 1. The plain at the foot of the mountains, between the Rubas and the Ata; 2. The dry and naked ridge of mountains from the Atatſchai (*tſchai* ſignifying a rivulet, and Atatſhai the rivulet Ata) to the plain on the left bank of the Kur; 3. The plain on the Kur; 4. The more elevated mountainous region which bounds the three other diſtricts. With regard to its political diviſion, Schirwan comprehends 1. The territory of the khan of Kuba; 2. The tract of country conquered by the khan of Kuba on the other ſide of the Atatſchai; 3. The territory of Sallian; 4. The territory ſubject to the khan of Baku; 5. The territory of the khan of Schamachi; and 6. The territory of the khan of Scheki.

The firſt natural diviſion, comprehending a great part of the province, is formed by the mountains that extend towards the ſea near Derbend or Derbent, and gradually receding behind that city, approach again, in a circular form, within four verſts of the ſea, at the mouth of the river Ata. Numerous ſtreams from the mountains very much contribute to its fertility, at the ſame time to its ſecurity, rendering the paſſage of an army extremely difficult. They branch off in various directions, are uncommonly rapid, and being ſhallow, have a wide channel with a rough and ſandy bed. The plain is interſperſed with ſmall woods and clumps of buſhes, and the villages are ſurrounded with orchards, vineyards, and plantations of mulberries. The ſecond diviſion of Schirwan extends on one ſide along the coaſt, from the Ata to the plain watered by the Kur; and on the other it is bounded by the higher range of mountains, which run in a S.E. courſe through the province. The length of this diſtrict is about 120 verſts; but as the coaſt projects between the Atatſchai and the Kur, the breadth varies conſiderably. The higher ranges are the moſt fertile; the part towards the ſea is barren and devoid of water; and from mount Peſchparmak to Koſutſchai and Badku is a deſert tract of 80 verſts. The third diviſion, or the plain along the left of the Kur, is 200 verſts in length, and in breadth between 60 and 70. This diſtrict is, in a great degree, ſurrounded with mountains: and being expoſed to frequent inundations, is overgrown with ruſhes to a conſiderable diſtance. The fourth, or the moſt elevated diviſion of Schirwan, extends from the Rubas to Leſgeſtan. It varies much in breadth, and is interſected by narrow vallies, in many of which are ſmall lakes full of water, even in the hotteſt ſummer.

The capital of this province is *Schamachi,* which ſee. Badku, or *Baku* (which ſee), literally denoting "the wind of the mountain," ſo named from the violent guſts of wind which blow at times from the chaſms of the mountains, is the moſt ſpacious and convenient port in the Caſpian. It was taken by the Ruſſians in 1801, and is ſituated on the peninſula of Abſcharon in N. lat. 42° 22′. This is a place of conſiderable trade, and is defended by a double wall and deep ditch, made during the reign of Peter the Great. It was a celebrated city of the ancient worſhippers of fire, and before the conqueſt of the Saracens was annually viſited by thouſands of pilgrims. The plain to the S.E. of the city yields an enormous quantity of *naptha,* which ſee. (See alſo PERSIA.) About ſeven verſts E. of the Naphtha ſprings, the attention is arreſted by the "Ataſh-Kudda," a fire-temple of the Guebres, about a mile in circumference, from the centre of which a blueiſh flame is ſeen to ariſe. The whole country, indeed, round Badku, has at times the appearance of being enveloped in flames. This fire does not conſume; and if a perſon finds himſelf in the midſt of it, no warmth is felt. Kuba (which ſee) is the capital of a khanſhip of the ſame name, which is the moſt populous and flouriſhing diviſion of the province of Schirvan. The town is ſmall, but fortified with towers; except towards the river Deli, the ſteep banks of which ſupply the place of works. For an account of the opulent city of Sallian, ſee SALLIAN.

Schirwan may be eſteemed, in general, a fertile country, being watered by innumerable rivers, ſome of which fall into the Kur, and others into the Caſpian. The moſt conſiderable are the Samur, Deli, Sugaïte, and Pirſagat. This province, from its conqueſt by Shah Iſmael I., in 1500, continued in the hands of the Perſians until the decline of the Sefi family, about which period the khans of Badku, Schamachi, and Sallian, eſtabliſhed an independence, which they maintained until the late conqueſts of the Ruſſians, who have now the whole of the ſea-coaſt in their poſſeſſion, together with the country between Badku and Ganſcha. The Leſghaes, who inhabit the frontier, are all, either directly or indirectly, governed by two chiefs; Uma Khan, whom the Awars acknowledge, and the Khanbutai, who rules over the numerous tribes of free Kumuks inhabiting the mountains between the Samur and the Deli.

Between Schirwan and Georgia, on the direct road leading from Teflis to Schamachi, are the town and khanſhip of Ganſcha, commanding a celebrated defile, where it is ſuppoſed Cyrus was overthrown and Pompey defeated the Athenians. Kinneir's Mem. of the Perſian Empire.

SCHIRWINDT, a town of Pruſſian Lithuania, on the Scheſchuppe; 92 miles E. of Königſberg. N. lat. 54° 46′. E. long. 23° 18′.

SCHISANDRA, in *Botany,* ſo named by Michaux, from σχισις, *a fiſſure,* and ανηρ, *a male;* becauſe the anthers are merely ſeparated by fiſſures in the receptacle of the flower.—Michaux Boreal-Amer. v. 2. 218. Purſh v. 1. 212. Willd. Sp. Pl. v. 4. 372. Ait. Hort. Kew. v. 5. 268.—Claſs and order, *Monoecia Pentandria.* (Monoecia Syngeneſia; *Michaux.* Pentandria Polygynia; *Purſh.*) Nat. Ord. *Sarmentaceæ,* Linn. *Meniſperma,* Juſſ.

Gen. Ch. Male, *Cal.* Perianth of nine concave, coloured, deciduous leaves; the inner ones gradually ſmalleſt. *Cor.* none. *Stam.* Filaments none; anthers five, ſeſſile on the receptacle of the flower, oblong; contiguous at the baſe; connected at the ſummit, above their cells; ſeparated in the middle by chinks.

Female, *Cal.* as in the male. *Cor.* none. *Piſt.* Germens numerous, ovate, ſeſſile on a receptacle which is finally elongated; ſtyle none; ſtigma pointed. *Peric.* Berries obovate, ſingle-ſeeded, forming a ſpike on the elongated thread-ſhaped receptacle. *Seed* ovate-oblong, ſomewhat cylindrical, nearly ſmooth.

Eſſ. Ch. Male, Calyx of nine leaves in three rows. Corolla none. Anthers nearly ſeſſile, connected at the top.

Female, Calyx as in the male. Corolla none. Piſtils numerous, capitate. Berries ſingle-ſeeded, attached to an elongated thread-ſhaped receptacle.

1. S. *coccinea.* Scarlet-flowered Schiſandra. Michaux v. 2. 219. t. 47. Willd. n. 1. Ait. n. 1. Curt. Mag. t. 1413.—Found in the ſhady woods of Carolina and

Georgia, flowering in June. Brought to England by Mr. John Lyon, in 1806. *Hort. Kew.* A climbing *ſhrub*, hardy, except in our very ſevere winters. The *ſtem* is ſmooth, ſlender, twining. *Leaves* ſtalked, alternate, ovate, pointed, wavy, ſmooth, three or four inches long; glaucous beneath. *Flowers* axillary, ſolitary, ſtalked, drooping; the internal leaves of their *calyx* of a fine ſcarlet; each flower about half an inch in diameter; the ſpike of ripe *berries* meaſuring in length rather more than an inch. The *flower-ſtalks* are about the length of the *footſtalks*. There are neither *ſtipulas* nor *bracteas*. The genus is ſomewhat allied to *Meniſpermum*.

SCHISCHELIZ, in *Geography*, a town of Bohemia, in the circle of Konigingratz; 7 miles S. of Bidſchow.

SCHISCHKOPA, a town of Ruſſia, in the government of Perm; 60 miles S.E. of Kraſnouphimſk.

SCHISCHTOMAK, a river of Ruſſia, which runs into the Irtiſch; 52 miles N.W. of Tara.

SCHISCHTOMATZKAIA, a town of Ruſſia, in the government of Tobolſk, at the conflux of the Schiſchtomak and the Irtiſch; 52 miles N.W. of Tara.

SCHISM, Schisma, formed from σχισμα, *cleft*, *fiſſure*, in the general, ſignifies *diviſion*, or *ſeparation*; but it is chiefly uſed in ſpeaking of ſeparations happening through diverſity of opinions among people of the ſame religion and faith.

Thus, we ſay the ſchiſm of the ten tribes of Iſrael, from the two tribes of Judah and Benjamin; the ſchiſm of the Perſians, from the Turks, and other Mahometans, &c. Among eccleſiaſtical authors, the *great ſchiſm of the Weſt* is that which happened in the times of Urban VI. and Clement VII. who were both advanced to the papacy at the ſame time, the latter reſiding at Avignon in France, and the former at Rome, which divided the church for forty or fifty years; the cauſe of Clement being eſpouſed by France and Spain, Scotland, Sicily, and Cyprus, while the reſt of Europe acknowledged Urban to be the true vicar of Chriſt; and was at length ended by the election of Martin V. at the council of Conſtance, ſummoned to meet in the year 1414.

The Romaniſts number thirty-four ſchiſms in their church. They beſtow the name *Engliſh* ſchiſm on the reformation of religion in this kingdom. Thoſe of the church of England, again, apply the term ſchiſm to the ſeparation of the nonconformiſts; *viz.* the Preſbyterians, Independents, and Anabaptiſts, who contend for a farther reformation.

Some call the ſeparation of the Proteſtants from the church of Rome a *paſſive* ſchiſm; becauſe that church cut them off from their communion.

The word ſchiſm is uſed, in ſcripture, in an indifferent ſenſe (ſee John, vii. 43. John, ix. 16. x. 19.); and, therefore, the lawfulneſs or unlawfulneſs of it is entirely to be determined by circumſtances. In our own language, indeed, common uſe has affixed to the term an idea of guilt and reproach: but in this ſenſe there can be no ſuch thing as ſchiſm, except in caſes where there is an obligation to unity and communion: ſo that in order to define the nature of it juſtly, we muſt find out ſome centre of union, which is common to all Chriſtians. This muſt be either uniformity of ſentiment in matters of ſpeculative belief, or in external modes of worſhip and diſcipline; which, in the nature of things, is impoſſible: or, if it be unreaſonable to expect either of theſe, the only centre of unity that remains is charity and mutual forbearance, notwithſtanding leſſer differences, where there is an aſſent to all the neceſſary principles of Chriſtian faith, and the profeſſion of Chriſtianity is proved to be ſincere by a regular and virtuous life. However numerous the differences that ſubſiſt among Chriſtians, as long as mutual charity is preſerved, there cannot be the guilt of ſchiſm. Alienation of affection, and a turbulent excommunicating ſpirit, are the eſſence of ſchiſm, and not mere difference of opinion; not the uſe of different ceremonies, or of no ceremonies at all; or joining ourſelves to any particular religious communion: for, according to St. Paul, who in ſeveral paſſages blames the Corinthians for diviſions, or ſchiſms, among themſelves in the ſame community, this crime may be committed where there is no ſeparation from a particular church; and, conſequently, they that differ uncharitably, whether they belong all to one, or form diſtinct worſhipping aſſemblies (and they alone), are ſchiſmatics.

In the caſes to which the apoſtle refers, it is unqueſtionable, that the Corinthians had, by their conduct, given a wound to charity, and not that they had made any deviation from the faith: and that, in the apoſtolical acceptation of the word, men may be ſchiſmatics, or guilty of ſchiſm, by ſuch an alienation of affection from their brethren, as violates the internal union ſubſiſting in the hearts of Chriſtians, though there be neither error in doctrine nor ſeparation from communion, and conſequently no violation of external unity in ceremonies and worſhip. Fauſtus, a Manichean biſhop in the fourth century (however remote from truth the leading principles of his party were on more important articles) entertained ſentiments on this ſubject entirely ſcriptural. "Schiſma," ſays he, "niſi fallor, eſt eadem opinantem atque eodem ritu colentemque cæteri, ſolo congregationis delectari diſſidio." Fauſt. l. xx. c. iii. ap. Auguſt.

As to the diſtinctions on this ſubject, which in after-times obtained among theologians, it is proper to remark, ſays Dr. Campbell, that error in doctrine was not ſuppoſed eſſential to the notion of ſchiſm: its diſtinguiſhing badge was made ſeparation from communion in religious offices, inſomuch that the words *ſchiſmatic* and *ſeparatiſt* have been accounted ſynonimous. By this, divines commonly diſcriminate ſchiſm from hereſy, the eſſence of which laſt is repreſented as conſiſting in an erroneous opinion, obſtinately maintained, concerning ſome fundamental doctrine of Chriſtianity, and that whether it be accompanied with ſeparation in reſpect of the ordinances of religion or not. Hence it may be inferred, that ſchiſm in ſcriptural uſe is one thing, and ſchiſm in eccleſiaſtical uſe, another. Prelim. Diſſ. part iii.

Schism, *Greek*. See *Greek* Church.

Schism-*Bill*, the name of an act paſſed in the reign of queen Anne, which reſtrained Proteſtant diſſenters from educating their own children, and forbad all tutors or ſchoolmaſters being preſent at any conventicle, or diſſenting place of worſhip. The queen died on the day when this act was to have taken place (Aug. 1, 1714), and the ſchiſm-bill was repealed in the fifth year of George I.

SCHISMA, in *Muſic*, is a minute interval, equal only to half a comma, and of which the ratio is a ſurd quantity: ſince, in order to expreſs it by numbers, a mean proportional muſt be found between 80 and 81.

SCHISTOUS, in *Mineralogy*, compoſed of laminæ, or ſlates.

SCHISTUS, Schist, in *Mineralogy* and *Geology*, is a name deſcriptive of the ſlaty ſtructure of rocks, and is applicable to all which are diviſible into thin plates: thus we have micaceous ſchiſt, or mica ſlate; argillaceous ſchiſt, or common ſlate; and chlorite ſchiſt, &c. The ſhale which occurs in the coal ſtrata is alſo properly called a ſchiſt. If we examine the ſchiſts of a mountainous tract, we ſhall find they conſiſt almoſt entirely of mica, or felſpar, or quartz, or hornblende (ſee theſe ſubſtances under their reſpective heads), or of a mixture of two or more of theſe minerals. In ſome inſtances, carbonate of lime is intermixed with ſchiſtus, and aſſumes a ſlaty ſtructure. Granite aſſumes alſo a ſlaty ſtructure, and is then called gneiſs. (See GNEISS.) It has been uſual, ſays a late writer, to conſider the various characters of ſchiſt as correlative with their age, or the order of their diſpoſition, as follows: gneiſs, micaceous ſchiſt; then roof-ſlate, hornblende ſchiſt, chlorite ſchiſt, and grey-wacke ſchiſt, which were ſuppoſed to lie in regular ſucceſſion. This regularity of ſucceſſion is now queſtioned on authorities as high and numerous as thoſe by which it was firſt aſſerted; and there appears to be ſo complete an intermixture of all the varieties, that they may be conſidered as of cotemporaneous origin. See ROCK and SLATE.

SCHISTUS, *Aluminous*. See *Alum-ſlate*, under ALUM.

SCHITELLA, in *Geography*, a town of Naples, in Capitanata; 18 miles W. of Vieſte.

SCHIT-ELU, in *Botany*, a name given by ſome authors to the plant which produces the ſeed called *ſeſamum* in the ſhops.

SCHITTEREN, in *Geography*, a town of Pruſſia, in the palatinate of Culm; 14 miles N.N.W. of Straſburg.

SCHITTUAR, or SHITWAR, a ſmall iſland in the Perſian gulf, near the coaſt of Perſia. N. lat. 26° 59′. E. long. 53° 24′.

SCHIUMLAH. See SHIUMLAH.

SCHIUSCHKINA, a town of Ruſſia, in the government of Irkutſk; 38 miles N.N.E. of Orlenga.

SCHIUZAR, a town of Syria, in the pachalic of Aleppo, on the Orontes; 60 miles S. of Aleppo.

SCHIZÆA, in *Botany*, received that name from the writer of the preſent article, in alluſion to the cloven appearance of its aggregate fan-like ſpikes, the word being derived from σχιζω, *to cleave aſunder*.—Sm. Mem. de l'Acad. de Turin, v. 5. 419. t. 9. f. 9. Tracts relating to Nat. Hiſt. 257. t. 1. f. 9. Swartz Fil. 150. Sprengel Crypt. (Engl. ed.) 170. Willd. Sp. Pl. v. 5. 85. Brown Prodr. Nov. Holl. v. 1. 161. Thunb. Prodr. 172.—Claſs and order, *Cryptogamia Filices*. Nat. Ord. *Filices*.

Eſſ. Ch. Capſules ſomewhat turbinate, with radiating furrows at the top, burſting laterally, ſeſſile, covering the back of an aggregate appendage to the frond. Involucrum from the inflexed margin of the appendages, uninterrupted.

A genus very diſtinct in habit from all others.

1. S. *pectinata*. Swartz n. 1. Willd. n. 1. (Acroſtichum pectinatum; Linn. Sp. Pl. 1524. A. n. 6. Amoen. Acad. v. 1. 270. t. 12. f. 4, 5. Juncus elegantiſſimus, capitulis pectinatis, prom. bon. ſpei; Pluk. Phyt. t. 95. f. 7. J. africanus, pectinato capite; Moriſ. ſect. 8. t. 9. f. 30. Adiantum pectinatum, e capite bonæ ſpei; Petiv. Muſ. n. 743.)—Frond undivided, linear; channelled above. Appendages crowded into a roundiſh deflexed head.—Native of the Cape of Good Hope, in heathy places, from whence it was brought by Mr. Cunninghame to Petiver, who, as Linnæus ſays, "ſmelt out" that it was a fern, though preceding authors, as well as ſome following ones, have called it a ruſh. We cannot but give great commendation to Petiver's mental olfactories for this diſcovery, while we wonder at the error of his rival Plukenet. The *root* is black and tufted, of courſe perennial. *Fronds* ſeveral, aſcending in an oblique zigzag manner, a foot in height, more or leſs, quite ſimple, rigid, very narrow, ſmooth, entire, ſomewhat revolute; channelled in front; furniſhed with a ſtout midrib behind; their baſe tapering, blackiſh, accompanied at its origin from the root with a denſe tuft, of tawny, ſhining, tubular, jointed filaments, inſtead of the ſcales uſual in ferns. Each *frond* is crowned with a compreſſed, denſe, ſomewhat kidney-ſhaped head, formed of two cloſe converging rows, of erect, linear, often cloven, *leaflets*, about fifteen in each row, ſmooth externally, covered on the inner ſurface with innumerable *capſules*, imbedded in hair.

2. S. *fiſtuloſa*. Labill. Nov. Holl. v. 2. 103. t. 250. f. 3. Willd. n. 2. Brown. n. 2.—Frond undivided, ſomewhat thread-ſhaped and cylindrical. Appendages crowded into a lanceolate erect ſpike. Involucrum fringed. Briſtles at the root tubular, pervious.—Found by Labillardiere, at the cape of Van Diemen. This ſeems very like the laſt, except that the hollow fibres, which crown the *root*, do not appear to be jointed, and the *appendages* at the ſummit of the *frond* ſpread in ſome degree, compoſing a two-ranked nearly upright *ſpike*.

3. S. *penicillata*. Willd. n. 3. (S. pennula; Swartz n. 2. deſcr. 379.)—"Frond undivided, linear-thread-ſhaped, ſemi-cylindrical. Appendages five or ſix pair, digitate, erect."—Gathered by the celebrated travellers Humboldt and Bonpland, near the Black river in South America. *Fronds* ſix or eight inches high, with brown ſcales at their baſe. *Appendages* half an inch long. We have ſeen neither ſpecimen nor figure, and Willdenow's deſcription contains little to diſtinguiſh this from the laſt. We doubt the appendages being really digitate.

4. S. *rupeſtris*. Brown n. 1.—"Frond undivided, flat, linear, entire. Appendages from five to eight pair, pinnate. Involucrum cut."—Found by Mr. Brown, on rocks near Port Jackſon, New South Wales.

5. S. *digitata*. Swartz n. 3. deſcr. 380. t. 4. f. 1. Willd. n. 4. (Acroſtichum digitatum; Linn. Sp. Pl. 1524. A. n. 5; Amoen. Acad. v. 1. 269. t. 12. f. 1. Planta pluribus foliis triquetris inſtar graminis cyperini ſummitate foliorum in plurima folia biuncialia diviſis; Herm. Muſ. Zeyl. 27. Burm. Zeyl. 194.)—Frond undivided, linear, entire, keeled, ſingle-ribbed. Appendages three or four pair, digitate, ſtraight, ſomewhat radiating; the innermoſt longeſt. Involucrum entire, ſmooth-edged.—Native of Ceylon and Tranquebar. The *fronds* are a quarter of an inch wide, flat, except the keel of the mid-rib, a foot or more in height, occaſionally zigzag, ſmooth; crowned with three or four pair of linear ſmooth *appendages*, from one to two inches long, each half the breadth of the frond. *Involucrum* continued, even, ſmooth, quite entire. Mr. Brown is diſpoſed to doubt the genus of this rare and ſingular ſpecies, becauſe the "*capſules* are thickly crowded all over the backs of the appendages, not ranged in two rows; neither do they burſt at the outer ſide; nor are the *appendages* themſelves pinnate, but digitate." This laſt character may admit of ſome diſpute, the increaſed length of each pair of appendages, in proportion as they are more central, evinces ſomething of a pinnate inclination; nor do we perceive that much ſtreſs can be laid on the opening of the *capſules*, for we are unable to determine its direction. The habit of the plant ſufficiently reſembles other *Schizææ*. We readily agree with profeſſor Willdenow, that *Acroſtichum ſpicatum*, Linn. Suppl. 444. Sm. Plant. Ic. t. 49, doubtfully referred to *Schizæa* in the Memoirs of the Turin Academy, v. 5. 419, does not belong to this genus. Whether his *Lomaria*, Sp. Pl. v. 5. 289, to which it is referred, be well diſtinguiſhed from his *Struthiopteris* and *Onoclea*, their characters depending merely on the diviſions of the *involucrum*, may admit of ſome doubt. The margin of that part certainly differs in different ſpecies of moſt natural genera, as, for example, in that now before us.

6. S. *bifida*. Willd. n. 5. Act. Erfurt. for 1802. 30.

Georgia, flowering in June. Brought to England by Mr. John Lyon, in 1806. *Hort. Kew.* A climbing *ſhrub*, hardy, except in our very ſevere winters. The *ſtem* is ſmooth, ſlender, twining. *Leaves* ſtalked, alternate, ovate, pointed, wavy, ſmooth, three or four inches long; glaucous beneath. *Flowers* axillary, ſolitary, ſtalked, drooping; the internal leaves of their *calyx* of a fine ſcarlet; each flower about half an inch in diameter; the ſpike of ripe *berries* meaſuring in length rather more than an inch. The *flower-ſtalks* are about the length of the *footſtalks*. There are neither *ſtipulas* nor *bracteas*. The genus is ſomewhat allied to *Meniſpermum*.

SCHISCHELIZ, in *Geography*, a town of Bohemia, in the circle of Konigingratz; 7 miles S. of Bidſchow.

SCHISCHKOPA, a town of Ruſſia, in the government of Perm; 60 miles S.E. of Kraſnouphimſk.

SCHISCHTOMAK, a river of Ruſſia, which runs into the Irtiſch; 52 miles N.W. of Tara.

SCHISCHTOMATZKAIA, a town of Ruſſia, in the government of Tobolſk, at the conflux of the Schiſchtomak and the Irtiſch; 52 miles N.W. of Tara.

SCHISM, Schisma, formed from σχισμα, *cleft*, *fiſſure*, in the general, ſignifies *diviſion*, or *ſeparation;* but it is chiefly uſed in ſpeaking of ſeparations happening through diverſity of opinions among people of the ſame religion and faith.

Thus, we ſay the ſchiſm of the ten tribes of Iſrael, from the two tribes of Judah and Benjamin; the ſchiſm of the Perſians, from the Turks, and other Mahometans, &c. Among eccleſiaſtical authors, the *great ſchiſm of the Weſt* is that which happened in the times of Urban VI. and Clement VII. who were both advanced to the papacy at the ſame time, the latter reſiding at Avignon in France, and the former at Rome, which divided the church for forty or fifty years; the cauſe of Clement being eſpouſed by France and Spain, Scotland, Sicily, and Cyprus, while the reſt of Europe acknowledged Urban to be the true vicar of Chriſt; and was at length ended by the election of Martin V. at the council of Conſtance, ſummoned to meet in the year 1414.

The Romaniſts number thirty-four ſchiſms in their church. They beſtow the name *Engliſh* ſchiſm on the reformation of religion in this kingdom. Thoſe of the church of England, again, apply the term ſchiſm to the ſeparation of the nonconformiſts; *viz.* the Preſbyterians, Independents, and Anabaptiſts, who contend for a farther reformation.

Some call the ſeparation of the Proteſtants from the church of Rome a *paſſive* ſchiſm; becauſe that church cut them off from their communion.

The word ſchiſm is uſed, in ſcripture, in an indifferent ſenſe (ſee John, vii. 43. John, ix. 16. x. 19.); and, therefore, the lawfulneſs or unlawfulneſs of it is entirely to be determined by circumſtances. In our own language, indeed, common uſe has affixed to the term an idea of guilt and reproach: but in this ſenſe there can be no ſuch thing as ſchiſm, except in caſes where there is an obligation to unity and communion: ſo that in order to define the nature of it juſtly, we muſt find out ſome centre of union, which is common to all Chriſtians. This muſt be either uniformity of ſentiment in matters of ſpeculative belief, or in external modes of worſhip and diſcipline; which, in the nature of things, is impoſſible: or, if it be unreaſonable to expect either of theſe, the only centre of unity that remains is charity and mutual forbearance, notwithſtanding leſſer differences, where there is an aſſent to all the neceſſary principles of Chriſtian faith, and the profeſſion of Chriſtianity is proved to be ſincere by a regular and virtuous life. However numerous the differences that ſubſiſt among Chriſtians, as long as mutual charity is preſerved, there cannot be the guilt of ſchiſm. Alienation of affection, and a turbulent excommunicating ſpirit, are the eſſence of ſchiſm, and not mere difference of opinion; not the uſe of different ceremonies, or of no ceremonies at all; or joining ourſelves to any particular religious communion: for, according to St. Paul, who in ſeveral paſſages blames the Corinthians for diviſions, or ſchiſms, among themſelves in the ſame community, this crime may be committed where there is no ſeparation from a particular church; and, conſequently, they that differ uncharitably, whether they belong all to one, or form diſtinct worſhipping aſſemblies (and they alone), are ſchiſmatics.

In the caſes to which the apoſtle refers, it is unqueſtionable, that the Corinthians had, by their conduct, given a wound to charity, and not that they had made any deviation from the faith: and that, in the apoſtolical acceptation of the word, men may be ſchiſmatics, or guilty of ſchiſm, by ſuch an alienation of affection from their brethren, as violates the internal union ſubſiſting in the hearts of Chriſtians, though there be neither error in doctrine nor ſeparation from communion, and conſequently no violation of external unity in ceremonies and worſhip. Fauſtus, a Manichean biſhop in the fourth century (however remote from truth the leading principles of his party were on more important articles) entertained ſentiments on this ſubject entirely ſcriptural. "Schiſma," ſays he, "niſi fallor, eſt eadem opinantem atque eodem ritu colentemque cæteri, ſolo congregationis delectari diſſidio." Fauſt. l. xx. c. iii. ap. Auguſt.

As to the diſtinctions on this ſubject, which in after-times obtained among theologians, it is proper to remark, ſays Dr. Campbell, that error in doctrine was not ſuppoſed eſſential to the notion of ſchiſm: its diſtinguiſhing badge was made ſeparation from communion in religious offices, inſomuch that the words *ſchiſmatic* and *ſeparatiſt* have been accounted ſynonimous. By this, divines commonly diſcriminate ſchiſm from hereſy, the eſſence of which laſt is repreſented as conſiſting in an erroneous opinion, obſtinately maintained, concerning ſome fundamental doctrine of Chriſtianity, and that whether it be accompanied with ſeparation in reſpect of the ordinances of religion or not. Hence it may be inferred, that ſchiſm in ſcriptural uſe is one thing, and ſchiſm in eccleſiaſtical uſe, another. Prelim. Diſſ. part iii.

Schism, *Greek.* See *Greek* Church.

Schism-*Bill*, the name of an act paſſed in the reign of queen Anne, which reſtrained Proteſtant diſſenters from educating their own children, and forbad all tutors or ſchoolmaſters being preſent at any conventicle, or diſſenting place of worſhip. The queen died on the day when this act was to have taken place (Aug. 1, 1714), and the ſchiſm-bill was repealed in the fifth year of George I.

SCHISMA, in *Muſic*, is a minute interval, equal only to half a comma, and of which the ratio is a ſurd quantity: ſince, in order to expreſs it by numbers, a mean proportional muſt be found between 80 and 81.

SCHISTOUS, in *Mineralogy*, compoſed of laminæ, or ſlates.

SCHISTUS, Schist, in *Mineralogy* and *Geology*, is a name deſcriptive of the ſlaty ſtructure of rocks, and is applicable to all which are diviſible into thin plates: thus we have micaceous ſchiſt, or mica ſlate; argillaceous ſchiſt, or common ſlate; and chlorite ſchiſt, &c. The ſhale which occurs in the coal ſtrata is alſo properly called a ſchiſt. If we examine the ſchiſts of a mountainous tract, we ſhall find they conſiſt almoſt entirely of mica, or felſpar, or quartz, or hornblende (ſee theſe ſubſtances under their reſpective heads), or of a mixture of two or more of theſe minerals. In ſome inſtances, carbonate of lime is intermixed with ſchiſtus, and aſſumes a ſlaty ſtructure. Granite aſſumes alſo a ſlaty ſtructure, and is then called gneiſs. (See GNEISS.) It has been uſual, ſays a late writer, to conſider the various characters of ſchiſt as correlative with their age, or the order of their diſpoſition, as follows: gneiſs, micaceous ſchiſt; then roof-ſlate, hornblende ſchiſt, chlorite ſchiſt, and grey-wacke ſchiſt, which were ſuppoſed to lie in regular ſucceſſion. This regularity of ſucceſſion is now queſtioned on authorities as high and numerous as thoſe by which it was firſt aſſerted; and there appears to be ſo complete an intermixture of all the varieties, that they may be conſidered as of cotemporaneous origin. See ROCK and SLATE.

SCHISTUS, *Aluminous.* See *Alum-ſlate*, under ALUM.

SCHITELLA, in *Geography*, a town of Naples, in Capitanata; 18 miles W. of Vieſte.

SCHIT-ELU, in *Botany*, a name given by ſome authors to the plant which produces the ſeed called *ſeſamum* in the ſhops.

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6. S. *bifida.* Willd. n. 5. Act. Erfurt. for 1802. 30. t. 3.

t. 3. f. 3. Swartz n. 5. Brown n. 3. (Acroſtichum dichotomum; Cavan. Leccion. 240.)—Barren fronds repeatedly forked; fertile ones ſimply or doubly divided, roughiſh. Appendages ten to ſixteen pair, pinnate, crowded into a half-ovate head. Involucrum fringed.—Native of New South Wales, as well as of Van Diemen's iſland. The barren *fronds* we have not ſeen; the fertile ones are in two of our ſpecimens quite ſimple; in all the reſt only once divided, more or leſs deeply; all narrow and channelled. This plant bears a general reſemblance to the firſt ſpecies, but is rather ſmaller, and the *appendages* compoſe a more erect and oblong, not kidney-ſhaped or deflexed, head.

7. S. *dichotoma.* Willd. n. 6. Swartz n. 4. Act. Erfurt. for 1802. 30. t. 3. f. 2. (Acroſtichum dichotomum; Linn. Sp. Pl. 1524. Cochine branched comb-fern; Petiv. Gazoph. 7. t. 70. f. 12.)—Fronds all repeatedly forked; ſegments linear, ſingle-ribbed, roughiſh, tapering upwards. Appendages pinnate, ſomewhat ſpreading, obtuſe. Involucrum hairy.—Native of the Eaſt Indies, Cochinchina, the Mauritius, Madagaſcar, and the tropical part of New Holland. The *root* conſiſts of many tufted, ſtrong, black, hairy fibres, crowned with ſhining, tawny, hollow, jointed hairs, as in *S. pectinata.* *Fronds* forked four or five times, or more, very narrow, with a ſtrong mid-rib; more or leſs rough with minute rigid prickles, all directed towards the points; the barren ones about ſix inches high; the fertile eight inches, or more. *Appendages* ſmall, ſomewhat club-ſhaped, uſually about eight pair, divaricated, compoſing a ſmall recurved, pale brown *ſpike,* minutely ſpinous, eſpecially at its baſe. Mr. Brown ſpeaks of this as a very variable plant, ſometimes nearly ſmooth in the margin and ribs of its *fronds,* and having from three to ten pair of *appendages* in each *ſpike.* Sir Joſeph Banks has favoured us with an Otaheite ſpecimen, which, but for this remark of our learned friend, we ſhould conſider as a diſtinct ſpecies, and call *faſtigiata;* the ſegments of its fertile *fronds* being level-topped and exceedingly numerous, the *appendages* uniformly four pair, as nearly as poſſible, in each *ſpike,* all of them erect and parallel, not divaricated, nor are the *ſpikes* recurved.

8. S. *criſtata.* Willd. n. 7. (Ripidium dichotomum; Bernhardi in Schrad. Journ. for 1802. part 2. 127. t. 2. f. 3. Acroſtichum dichotomum; Forſt. Prodr. 78.)—"Fronds repeatedly forked, linear, ſingle-ribbed, ſmooth; very taper at the ſummits. Appendages about five pair."—Gathered by Forſter in the Society iſles. Willdenow, who had ſeen a dried ſpecimen, ſays this ſpecies is very like the laſt, but with a broader *frond,* ſmooth at the margin, remarkably tapering at the top, and bearing ſmaller *ſpikes.*

9. S. *elegans.* Swartz n. 6. Willd. n. 8. (Acroſtichum elegans; Vahl. Symb. v. 2. 104. t. 50. Lophidium latifolium; Richard in Act. Soc. Hiſt. Nat. Paris. v. 1. 114?)—Frond fan-ſhaped, forked, with wedge-ſhaped, many-ribbed ſegments, jagged at the top. Appendages pinnate, parallel. Involucrum hairy. Gathered by Von Rohr, in the iſland of Trinidad; by Mærter in the Caraccas. The *root* is ſomewhat creeping. *Fronds* differing from the laſt but one, in having fewer diviſions, and thoſe very broad, each bearing many pinnate terminal *ſpikes* of *appendages.* The latter are uſually five or ſix pair in each *ſpike,* bluntiſh, hairy, green, ſupported by a thick flat common ſtalk. We conceive that Richard's *Lophidium* can ſcarcely be different from our plant.

SCHIZANTHUS, ſo called by the authors of the *Flora Peruviana,* from σχιζω, *to cut,* or *cleave,* and ανθος, *a flower,* becauſe of the numerous and deep ſegments of its corolla.—"Fl. Peruv. Prodr. 5. t. 1. Fl. Peruv. v. 1. 13." Vahl. Enum. v. 1. 171.—Claſs and order, *Diandria Monogynia.* Nat. Ord. *Perſonatæ,* Linn. *Scrophulariæ,* Juſſ.

Gen. Ch. *Cal.* Perianth inferior, in five deep, linear, nearly equal, permanent ſegments. *Cor.* of one petal, ringent, reverſed: tube compreſſed, the length of the calyx; upper lip in five deep ſegments, lower in three. *Stam.* Filaments four; two of them abortive, villous, under the upper lip (which by the reverſed poſition of the flower ſtands lowermoſt); the other two perfect, inſerted into the lower lip; anthers roundiſh, of two lobes. *Piſt.* Germen ſuperior, roundiſh; ſtyle thread-ſhaped, longer than the tube of the corolla; ſtigma club-ſhaped. *Peric.* Capſule ovate, the length of the calyx, of two concave cloven valves, and two cells. *Seeds* ſeveral, kidney-ſhaped, rough. *Receptacle* orbicular, compreſſed, parallel to the valves, unconnected with them, rough and corrugated at the ſides, where the ſeeds are inſerted.

Eſſ. Ch. Calyx in five deep ſegments. Corolla two-lipped, reverſed; the upper lip in five, lower in three, deep ſegments. Two barren ſtamens. Capſule ſuperior, of two cells, and two cloven valves.

1. S. *pinnatus.* Vahl. n. 1. Fl. Peruv. t. 17.—Native of the borders of cultivated fields in Chili. Our ſpecimen was ſent by the late abbé Cavanilles, in 1803. The *ſtem* is herbaceous, erect, two feet high, branched, leafy, round, rough, eſpecially in the upper part, with glandular viſcid hairs. *Leaves* alternate, on ſhort ſtalks, ſlightly hairy, pinnate, or rather deeply pinnatifid, with linear, decurrent, bluntiſh, partly cut or ſubdivided ſegments. *Stipulas* none. *Cluſters* oppoſite to the leaves, in the upper part of the branches, ſimple, of from ſix to twelve drooping *flowers,* with a pair of ſmall roundiſh *bracteas* at the baſe of each partial ſtalk. *Calyx* and *ſtalks* hairy and viſcid. *Corolla* about an inch long, variegated with ſhades of light purple, the upper lip having a darker ſpot in the middle; the ſegments of the lower lip falcate, the intermediate one abrupt. Valves of the *capſule* ſmooth, thin, almoſt membranous.

SCHKEUDITZ, or SHEUDITZ, in *Geography,* a town of Saxony, in the principality of Merſeburg, or the Elſter; 8 miles W.N.W. of Leipſic.

SCHKOLEN, a town of Saxony, in the biſhopric of Naumburg; 6 miles S. of Naumburg.

SCHKUHRIA, in *Botany,* received that name from Dr. Roth, in his *Catalecta,* v. 1. 116, in commemoration of Mr. Chriſtian Schkuhr, who is ſtiled, in his own work, Mechanic of the Univerſity of Wittenberg. Whatever may be his office or rank, he has proved himſelf a moſt acute and exact deſcriptive botaniſt, in a general illuſtration in German of the genera, and principal ſpecies, of the Linnæan ſyſtem, with coloured figures, under the title of *Botaniſches Handbuch,* or Botanical Manual. Of this work, what regards the ſpecies of *Carex,* all of them, as far as known, being carefully delineated, is the moſt valuable, and ſufficient, of itſelf, to ſecure the botanical immortality of its author. We regret, therefore, that the genus dedicated to ſo worthy a name proves, in our judgment at leaſt, not diſtinct from PECTIS; ſee that article, ſpecies the fixth. Mr. Schkuhr was born at Pegau, May 14, 1741, and, we believe, is ſtill living.

SCHLACKEN, in *Geography,* a town of Germany, in the principality of Coburg; 18 miles S.W. of Coburg.

SCHLADEN, a town of Weſtphalia, in the biſhopric of Hildeſheim; 28 miles E.S.E. of Hildeſheim.

SCHLAKENAU, a town of Bohemia, in the circle of Leitmeritz; 10 miles N. of Kamnitz.

SCHLAKENWALD, or SLAWKOW, a town of Bohemia, in the circle of Elnbogen, near which is a tin-mine; 3 miles S.E. of Elnbogen. N. lat. 50° 7′. E. long. 12° 50′.

SCHLAKENWERT, a town of Bohemia, in the circle of Elnbogen, with a citadel; 7 miles N.E. of Elnbogen. N. lat. 50° 16′. E. long. 12° 55′.

SCHLAMING, or SCHLADMING, a town of the duchy of Stiria, on the river Enns; 36 miles W.S.W. of Rottenmann.

SCHLAN, a town of Bohemia, once the capital of a circle, united with Rakonitz; 28 miles W.S.W. of Jung-Buntzel. N. lat. 50° 15′. E. long. 14° 15′.

SCHLAUPPITZ, a town of Sileſia, in the principality of Grotkau; 5 miles N.N.E. of Ottmuchau.

SCHLAWA, a town of Sileſia, in the principality of Glogau, on the borders of Poland, near the Schalwer See, or lake, the fiſhery of which is farmed at an annual rent of 1000 Sileſian rix-dollars; 12 miles of Gros-Glogau.

SCHLAWE, SLAWE, or *Slage*, a town of Pomerania, on the Wipper; 68 miles N.E. of Stargard N. lat. 54° 19′. E. long. 16° 23′.

SCHLEBHEIM, a town of the duchy of Wurzburg; 4 miles S.E. of Schweinfurt.

SCHLECHTENDALIA, in *Botany*, is the *Willdenowa* of Cavanilles; but there being already a *Willdenovia*, as it ought to be written, eſtabliſhed by Thunberg, profeſſor Willdenow has dedicated the preſent genus to his "very dear friend" Von Schlechtendal, a noble German, whom he terms alſo "a moſt acute botaniſt." How often does Voltaire's wiſh, of "fewer conſonants," to theſe meritorious Germans, come acroſs the mind, as we range over the wide and rugged field of botanical nomenclature!—Willd. Sp. Pl. v. 3. 2125.—Claſs and order, *Syngeneſia Polygamia-ſuperflua*. Nat. Ord. *Compoſitæ oppoſitifoliæ*, Linn. *Corymbiferæ*, Juſſ.

Gen. Ch. *Common Calyx* double; the outer of many, ſpreading, awl-ſhaped ſcales; inner of many, cloſe, erect, linear leaves, longer than the outer. *Cor.* compound, radiated; florets of the radius eight, female, ligulate, rounded, broad, entire; thoſe of the diſk numerous, perfect, tubular, their limb in ſix, ſeven, or eight linear, acute, very narrow ſegments. *Stam.* Filaments (in the diſk only) five, capillary; anthers ſimple, united into a cylinder. *Piſt.* Germen oblong, crowned with five briſtles, and five ſhort intermediate ſcales; ſtyle ſolitary, divided half way down into three parts; ſtigmas three, briſtle-ſhaped. *Seeds* ſolitary, oblong, ſlightly pentagonal, tapering at the baſe, crowned with five erect briſtles. *Receptacle* chaffy, its ſcales ſhort, cup-like, toothed.

Eſſ. Ch. Receptacle chaffy. Seed-crown of five erect briſtles. Calyx double; the outer of many briſtles; inner of many equal leaves. Florets of the diſk in ſix or eight ſegments.

1. S. *glanduloſa*. Willd. n. 1. (Willdenowa glanduloſa; Cavan. Ic. v. 1. 61. t. 89.)—Native of Mexico, from whence it was ſent to the garden at Madrid. *Root* perennial. *Stems* annual, a yard high, branched, leafy, round, reddiſh and ſmooth. *Leaves* numerous, moſtly alternate, rigid, pinnate, with an odd leaflet; their *common ſtalk* channelled, fringed with briſtles; *leaflets* about ſeven, oppoſite, ovate, decurrent, ſmooth, an inch long, toothed, often fringed with briſtles, and bordered with ſcattered pellucid ſpots, or glands, in their ſubſtance, near the edge. *Flowers* corymboſe, reſembling the common *Zinnia* in ſize and ſhape, ſcarlet; the diſk paleſt. Each ſcale or leaf of the *calyx* ends in a red briſtle, at whoſe baſe are two glands, in the inner calyx, one in the outer. The *flower-ſtalks* ſwell gradually upwards, and bear a few ſcattered briſtles, reſembling the outer ſcales of the calyx. This plant is certainly, as Cavanilles remarks, akin to *Tagetes*, but differs in its double *calyx*, more numerous ſegments of the tubular *florets*, chaffy *receptacle*, and three *ſtigmas;* which laſt character, as this intelligent author appears to think, requires further inveſtigation. The plant before us would be a great acquiſition to the Engliſh flower gardens, where it would probably prove a hardy perennial, flowering late in autumn.

SCHLEERIET, in *Geography*, a town of the duchy of Wurzburg; 5 miles N.N.E. of Arnſtein.

SCHLEGELBERG, a mountain of the Briſgaw; 22 miles N.N.E. of Friburg.

SCHLEICHINGEN, a town of Swabia, in the lordſhip of Limburg; 25 miles N. of Ulm.

SCHLEINACH, a town of Bavaria, in the biſhopric of Bamberg; 9 miles N.W. of Burg Eberach.

SCHLEINITZ, a town of Auſtria; 2 miles S. of Eggenburg.—Alſo, a town of Auſtria; 4 miles N.E. of Meiſſau.

SCHLEISHEIM, a town of Bavaria, with a royal palace, containing a collection of pictures by the moſt celebrated maſters, Rubens, Albert Durer, &c.; 8 miles N. of Munich.

SCHLEITZ, a town of Saxony, in the county of Reuſſen, the ſeat of the count, containing three churches; 17 miles W.S.W. of Greitz. N. lat. 50° 30′. E. long. 11° 50′.

SCHLEK, a town of Courland, on the Wota; 6 miles N. of Goldingen.

SCHLEMMEN, a term uſed by the ſmalt-makers to expreſs the ſubſtance of the ſmalt after fuſion, when it is ſeparated from the *eſchel;* that is, a ſort of grey aſhes which adhere to it, and is ready for powdering for uſe.

SCHLENACKEN, in *Geography*, a town of France, in the department of the Roer; 8 miles S.W. of Aix-la-Chapelle.

SCHLENTER SEE, a large lake in the duchy of Holſtein, about fourteen miles in circumference; 3 miles W. of Lutkenburg.

SCHLETTAU, a town of Saxony, in the circle of Erzgebirg; 3 miles W.N.W. of Grunhayn.

SCHLETTSTATT, or SCHELESTAT, a town of France, in the department of the Lower Rhine, and chief place of a canton, in the diſtrict of Barr, ſituated in a marſhy country, on the Ill; formerly imperial; 5 poſts S.S.W. of Straſburgh. The place contains 7464, and the canton 13,626 inhabitants, on a territory of 75 kiliometres, in 6 communes. N. lat. 48° 5′. E. long. 7° 22′.

SCHLEUSE, a town of Pruſſia, in the province of Samland; 18 miles E. of Konigſberg.

SCHLEUSINGEN, a town of Germany, in the county of Henneberg, on the Schleuſs; 19 miles N.N.E. of Schweinfurt.

SCHLEUSS, a river of Germany, which runs into the Werra, 7 miles S.W. of Schleuſingen.

SCHLEYDEN, or SCHLIEDEN, a town of France, in the department of the Ourthe, and chief place of a canton, in the diſtrict of Malmedy; late capital of a county of Weſtphalia, annexed to the county of Mark; 40 miles N. of Treves. The place contains 1308, and the canton 4136 inhabitants, on a territory of 142½ kiliometres, in 4 communes. N. lat. 50° 35′. E. long. 6° 25′.

SCHLICHTING, a town of the duchy of Holſtein; 3 miles S.E. of Lunden.

SCHLICKHEIM, a river of Wurtemberg, which runs into the Neckar, near Rothweil.

SCHLIEBEN, a town of Saxony; 25 miles S.E. of Wittenberg. N. lat. 50° 33′. E. long. 13° 36′.

SCHLIENGEN, or Schlingen, a town of Baden, about two miles from the Rhine; 14 miles N. of Bale.

SCHLIERSBACH, a town of Auſtria; 14 miles S.W. of Steyr.

SCHLIESBURG, a town of Auſtria; 2 miles E. of Grieſkirchen.

SCHLISSELBURG, a town of Ruſſia, in the government of Peterſburg, on lake Ladoga; 32 miles E. of Peterſburg. N. lat. 60°. E. long. 48° 44′.

SCHLITZ, a town of Germany, giving name to a county on the Fulda; 7 miles N.N.W. of Fulda.

SCHLOBITTEN, a town of Pruſſia, in the province of Oberland, near Holland.

SCHLOCKAU, a town of Pruſſia, in Pomerelia, on the Bro; 43 miles S.S.E. of Dantzic.

SCHLODEIN, a town of Pruſſia, in the province of Oberland, near Holland.

SCHLOFKA, a town of Pruſſia, in Oberland; 7 miles N.N.E. of Soldau.

SCHLOMEN, a town of Germany, in the principality of Culmbach; 9 miles N. of Bayreuth.

SCHLOSSAU, a town of Pruſſia, in the palatinate of Culm; 8 miles S.W. of Straſburg.

SCHLOSSHOFF, a town of Auſtria; two miles S. of Marckeck.

SCHLOTHEIM, a town of Saxony, in the county of Schwartzburg Rudolſtadt; 6 miles N.E. of Muhlhauſen.

SCHLUCHTEREN, a town of Germany, in the county of Hanau-Munzenberg, with a Proteſtant college, which was formerly a convent of Benedictines; 14 miles S.W. of Fulda.

SCHLUSSELAU, a town of Bavaria, in the biſhopric of Bamberg; 7 miles S. of Bamberg.

SCHLUSSELBURG, a town of Weſtphalia, in the county of Minden; 13 miles N.E. of Minden.

Schlusselburg, a town and fortreſs of Ruſſia, containing about 300 houſes, and 2800 inhabitants, near lake Ladoga: the fortreſs ſtands on an iſland in the river. This has been frequently uſed as a ſtate priſon. The iſland is of an elliptical form, about 175 fathoms long, and 78 in its broadeſt part. The walls that ſurround it are for the moſt part conſtructed of ſtones and brick; fifty feet high, and from eleven to twenty thick, and fortified with battlements, and eight round towers. The paſſage into the iſland is by a drawbridge. The fortreſs is about 146 feet ſquare, and ſurrounded by ſtone walls of a great height. An adjoining brick houſe, of a ſingle ſtory, extends from one ſide to the other, and contains eight rooms, of ſeventeen feet by twelve. The houſe is unfiniſhed, is without ceiling, and has never been inhabited. Peter III. begun it precipitately, but when he was depoſed, the work was diſcontinued; 36 miles E. of Peterſburg.

SCHLUSSELFELD, a town of the duchy of Wurzburg, inſulated in the biſhopric of Bamberg; 13 miles S.W. of Bamberg.

SCHMALENBERG, a town of Weſtphalia; 18 miles S. of Briſon.

SCHMALFELDEN, a town of Germany, in the margraviate of Anſpach; 6 miles N.N.E. of Gerhardſbron.

SCHMALIEN, a town of Pruſſia, in Ermeland; 8 miles S.W. of Heilſberg.

SCHMEDITTE, a town of Pruſſia, in the province of Natangen; 20 miles S. of Konigſberg.

SCHMEIZEL, Martin, in *Biography*, a German hiſtorical writer, was born at Cronſtadt in the year 1679. He was educated partly at Jena, and partly at Wittenberg and Griefswald. In 1706 he accompanied a young gentleman in the quality of tutor to Halle, and thence to Jena. In 1709 he undertook a tour to Denmark and Sweden. In the latter country he was entruſted with the care of two young gentlemen, whom he carried with him to Jena, and in 1713 took them back to Sweden: on which occaſion he was twice captured by Daniſh privateers, and conveyed to Copenhagen, but he ſoon obtained his liberty, and returned to Jena. After this he was appointed profeſſor of philoſophy in the academy, and at the ſame time librarian. In 1731 he was invited to Halle, to be profeſſor of juriſprudence and hiſtory, with the honour of the title of counſellor of ſtate to his Pruſſian majeſty. He died in 1747. His works are numerous, and written partly in his native language, and partly in Latin: of theſe, the principal are as follow: "Tractatus de Coronis tam antiquis quam modernis;" "De Clenodiis et Ritu inaugurandi Reges Hungariæ;" "Præcognita Hiſt. Eccleſiaſticæ;" "Catalogus Scriptorum qui Res Hungariæ, Tranſilvaniæ, &c. illuſtrant et in Bibliotheca Martini Schmeizelii ſervantur."

SCHMEKEWALT, in *Geography*, a town of Pruſſia, in Oberland; 6 miles S.S.W. of Oſterode.

SCHMELING, Mad., in *Biography*. See Mara.

SCHMELTZDORF, in *Geography*, a town of Sileſia, in the principality of Neiſſe.

SCHMERA, a town of Wurzburg; 9 miles E.S.E. of Geroltzhofen.

SCHMERGRUB, a town of Pruſſia, in Pomerelia; 20 miles E.N.E. of Vogelſang.

SCHMERLENBACH, a town of Germany, in the electorate of Mentz; 4 miles E. of Aſchaffenburg.

SCHMEY, a town of Pruſſia, in the palatinate of Culm; 4 miles N. of Straſburg.

SCHMID, John Andrew, in *Biography*, a German Lutheran divine, was born at Worms in 1652. He was educated at his native place, and after the death of his parents, who were both carried off by the plague when he was only fourteen years of age, he was ſent to a college at Augſburg, after which he went to Altdorf, and thence to Jena, where he took his degree of maſter of arts in 1675. In 1679 he nearly loſt his life by a fall from a window, and though he recovered after a long illneſs, his right arm was ſo injured, that he was under the neceſſity of learning to write with his left hand. In 1683 he was appointed profeſſor of logic and metaphyſics in the univerſity of Jena, and after this he ſucceeded to the theological chair. In 1695 he removed to Helmſtadt, and was appointed to the profeſſorſhip of theology and eccleſiaſtical hiſtory. He died in 1726. He wrote ſeveral works, which relate chiefly to literary and eccleſiaſtical hiſtory. Moſheim deſcribes him as a man of great genius and indefatigable induſtry, and ſpeaks of him as the firſt man of learning in Germany who had the courage to throw aſide the trammels of Ariſtotle: he further ſays, that he was a judicious hiſtorian, who knew how to avoid ſuperſtitious credulity on the one hand, and ſcepticiſm on the other; and a pacific theologian, who had the good fortune to defend the truth without making himſelf enemies.

SCHMIDA, in *Geography*, a town of Auſtria; 8 miles S. of Sonneberg.

SCHMIDELIA, in *Botany*, received that name from the pen of Linnæus, in honour of Caſimir Chriſtopher Schmidel, formerly Profeſſor of Medicine at Erlang, and afterwards Preſident of the College of Phyſicians at Anſpach, author of ſome very valuable and ſcientific diſſertations, on *Oreoſelinum*, *Buxbaumia*, *Blaſia*, and *Jungermannia*, as well as of ſeveral faſciculi, in folio, of ſplendid coloured plates of plants, with elaborate diſſections of their parts of fructification, drawn under his inſpection, and illuſtrated with ample ſynonyms and remarks. He travelled, in the years 1773 and 1774, through part of France, Switzerland, and Germany, as phyſician to Elizabeth Friderica Sophia, late ducheſs of Wirtemberg, who laboured under an infirm ſtate of health. Of this journey, a Latin account, conſiſting principally of obſervations relative to Natural Hiſtory, was publiſhed at Erlang, in 1794, making a thin quarto, with two coloured plates. The author died in 1793, aged 75.—Linn. Mant. 10. Schreb. 262. Willd. Sp. Pl. v. 2. 435. Mart. Mill. Dict. v. 4. Juſſ. 247. Lamarck Illuſtr. t. 312. (Toxicodendrum; Gærtn. t. 44?)—Claſs and order, *Octandria Digynia*. Nat. Ord. *Sapindi*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of two roundiſh coloured leaves, larger than the corolla. *Cor.* Petals four, roundiſh, ſeſſile. *Stam.* Filaments eight, ſimple, the length of the flower; anthers roundiſh. *Piſt.* Germens two, ſtalked, compreſſed, longer than the flower; ſtyles ſimple, ſhort; ſtigmas ſimple. *Peric.* Drupas two, ſtalked. *Seeds* ſolitary? *Linn.*

Eſſ. Ch. Calyx of two leaves. Petals four. Germens ſtalked, longer than the flower.

1. S. *racemoſa*. Linn. Mant. 67. Willd. n. 1. (Uſubis triphylla; Burm. Ind. 89. t. 32. f. 1.)—Native of Java, where it is called by the Malays *Dieroedji*, according to the Linnæan ſpecimen. Kleinhoff told Burmann that the inhabitants of Java knew it by the name of *Klinting birou*, and this, by ſome blunder, ſtands as its place of growth, in the *Mantiſſa* of Linnæus. The *ſtem* is deſcribed as arboreous. The *branches* are round, leafy, finely downy. *Leaves* alternate, on long downy footſtalks, ternate; *leaflets* ſtalked, ovate, or elliptic-oblong, pointed, wavy, pliant, with one rib, and many tranſverſe veins; the upper ſide, except the rib and veins, nearly ſmooth; the under downy *Cluſters* axillary, ſolitary, ſlender, denſe, many-flowered, on long downy ſtalks. *Flowers* ſomewhat whorled, ſmall.

Such is the Linnæan ſpecimen; but whether this be the very ſame plant with *Rhus Cobbe*, Sp. Pl. 382, our *Ornitrophe Cobbe*, we can neither affirm nor deny. See ORNITROPHE, n. 3, and our note at the end of that article. Lamarck, copying Burmann's figure, has retained *Schmidelia* in the plates of his Illuſtrations of Genera; but the continuator of his Dictionary, Poiret, has united this genus and *Ornitrophe* under the name of *Uſube*. Forſter's ſpecimen of his *Aporetica ternata* is ſo like this plant, except the *leaves* being ſmooth beneath, and ſerrated, that we preſume they muſt belong to one genus; but he deſcribes the *calyx* as conſiſting of four leaves. Juſſieu ſeems to have been in doubt on the ſubject, though he places *Aporetica* in the firſt ſection of his SAPINDI, ſee that article, and *Schmidelia*, next to *Ornitrophe*, in the ſecond. The examination of living ſpecimens is neceſſary to ſettle all theſe matters; but if the three genera in queſtion ſhould prove one and the ſame, the name of *Schmidelia* muſt take place of the others, as the oldeſt and moſt important.

SCHMIDING, in *Geography*, a town of Auſtria; 5 miles N.E. of Kemmaten.

SCHMIDT, ERASMUS, in *Biography*, was born in 1560, in Miſnia, and ſtudied at Wittemberg, where he afterwards became profeſſor, firſt of the Greek and then of the mathematics. He died in 1637, leaving behind him a Greek grammar, a treatiſe on the Greek dialects, and ſeveral Latin orations. He gave new editions, with tranſlations and commentaries, of Heſiod, Pindar, Lycophron, &c.: he alſo publiſhed a Greek and Latin concordance of the New Teſtament.

SCHMIDT, BERNARD, a German organ-builder of great and well-merited renown, but known in this kingdom under the revered name of *Father* SMITH. See his article.

SCHMIEDEBERG, in *Geography*, a town of Sileſia, in the principality of Jauer, ſituated in a country abounding with iron ore: here are manufactures of ſteel and of linen; 7 miles S.S.E. of Hirſchberg. N. lat. 50° 35′. E. long. 15° 50′.—Alſo, a town of Saxony, in the margraviate of Meiſſen; 15 miles S. of Dreſden.

SCHMIERENBERG, a town of the duchy of Stiria; 8 miles N.W. of Marburg.

SCHMIRSCHITZ, a town of Bohemia, in the circle of Konigingratz; 4 miles N. of Konigingratz.

SCHMITH, NICHOLAS, in *Biography*, a writer in hiſtory, was a native of Oldenburgh, in Hungary. He entered early into the ſociety of the Jeſuits, and taught the belles-lettres and theology in the ſchools of his order with great reputation. He died in 1767. As an author, his chief works are, "Series Archiepiſcoporum Strigonenſium," 2 vols. 8vo.: "Epiſcopi Agrienſes, fide diplomatica concinnati:" "Imperatores Ottomannici à capta Conſtantinopoli, cum Epitome Principum Turcarum ad annum," 1718, 2 vols. fol. Theſe works, eſpecially the hiſtory of the Ottoman emperors, are ſaid to abound in erudition, and to be compoſed in a pure and elegant ſtyle.

SCHMOGRA, in *Geography*, a village of Sileſia, in the principality of Brieg, where, A.D. 966, was erected the firſt Chriſtian church in Sileſia, together with the ſee, which was removed to Bitſchen, and afterwards to Breſlau; 5 miles N.N.E. of Nambſlau.

SCHMOLLEN, a town of Saxony, in the principality of Altenburg; 6 miles S. of Altenburg. N. lat. 50° 50′. E. long. 12° 20′.

SCHMOLNITZ, or SMELNITZ, a town of Hungary, in a narrow valley, near which, in the hills on each ſide, which are of argillaceous ſchiſtus, are copper-mines, which formerly gave exiſtence to this town, and now ſupport it. The copper ore is ſmelted and manufactured here; but the ores containing ſilver are ſent to Neuſohl; 15 miles N.W. of Caſchau.

SCHMOLSIN, a town of Farther Pomerania; 16 miles S.E. of Stolpen.

SCHMOLTZ, a town of Bavaria, in the biſhopric of Bamberg; 4 miles W.N.W. of Cronach.

SCHMUTTER, a river of Bavaria, which runs into the Danube, at Ingoldſtadt.

SCHNACKENBURG, a town of Germany, in the principality of Luneburg-Zelle, on the Elbe, where is a toll; 3 miles N.E. of Lauff.

SCHNALLENDORF, a town of Auſtria; 6 miles S.W. of Sonneberg.

SCHNECKENWERT, a town of the duchy of Wurzburg; 6 miles S. of Kiſſingen.

SCHNEEBERG, a town of Bohemia, in the circle of Leitmeritz; 14 miles N. of Leitmeritz.—Alſo, a town of Saxony, in the circle of Erzgebirg, on an eminence near the Mulda. In it are manufactures of thread, ſilk, gold and ſilver lace; and in the vicinity are ſilver mines, which were formerly very profitable; 7 miles N.W. of Schwarzenberg.—Alſo, a town of the duchy of Carniola; 9 miles W.N.W. of Gottſchee.—Alſo, a mountain of Auſtria; 12 miles S. of Steyr.—Alſo, a town of Bavaria, in the biſhopric of Bamberg; 13 miles N.N.E. of Bamberg.—Alſo, a town of Germany, in the principality of Culmbach; 12 miles N.E. of Bayreuth.

SCHNEE-KOPPE, a lofty mountain of Sileſia, in the principality of Jauer; 9 miles S.S.W. of Hirſchberg.

SCHNEIDER, Conrad Victor, in *Biography*, a German phyſician, much diſtinguiſhed by his anatomical reſearches, was a native of Bitterfeld, in Miſnia. He was profeſſor of anatomy, botany, and medicine, in the univerſity of Wittemberg, and filled thoſe offices with great reputation. He was father of his faculty, when he died in Auguſt, 1680, at the age of 66. He wrote many treatiſes; thoſe on anatomical ſubjects relating chiefly to the bones of the cranium, and to the pituitary membrane of the noſtrils, to which, indeed, his name is ſtill attached; the Schneiderian membrane being the common appellation of this part at the preſent day. He refuted an ancient error which was prevalent in his time, that the catarrhal mucus diſtilled through the os cribriforme from the brain; he demonſtrated that no ſuch diſtillation could take place, and that this mucus was ſecreted from the pituitary membrane. His principal works were, "Diſſertationes Anatomicæ de partibus, quas vocant, principalioribus, corde, capite, hepate, cum Obſervationibus ad Anatomiam, necnon ad Artem Medendi pertinentibus," Witteb. 1643. "Diſputationes oſteologicæ aliquot," 1649. "De Oſſe occipitis, ejuſdem vitiis ac vulneribus," 1653. "Diſputatio Medica de oſſibus temporum," 1653. "Liber de oſſe cribriformi, et ſenſu ac organo odoratûs, et morbis ad utrumque ſpectantibus, de coryzâ, hæmorrhagiâ narium, polypo, ſternutatione, amiſſione odoratûs," 1655. "De Catarrhis Libri quinque," 1660. "Liber de Catarrhis ſpecialiſſimus," 1664. "Liber de morbis capitis, ſeu cephalicis illis, ut vocant, ſoporoſis," 1669. "Liber de nova graviſſimorum trium morborum curatione; de Apoplexia, de Lipopſychia, et Paralyſi," Francf. 1672. "Liber de Spaſmonum naturâ et ſubjecto," Witt. 1678. The writings of Schneider, ſave thoſe which relate to anatomy, are diffuſe and obſcure, and full of ancient hypothetical doctrines. See Eloy Dict. Hiſt. de la Méd.

SCHNELLACH, Zur, in *Geography*, a town of Pruſſia, in Pomerelia; 13 miles S. of Marienburg.

SCHNELLENBACH, a town of Germany, in the county of Erbach; 5 miles S.S.E. of Erbach.

SCHNEMT, a town of Egypt; 9 miles N. of Beniſuef.

SCHNEPFENBACH, a town of Wurzburg; 4 miles S.W. of Volckach.

SCHNEPFRAUE, a town of Germany, in the county of Bregentz; 23 miles S.S.E. of Bregentz.

SCHNEVERDINGAN, a town of Germany, in the county of Verden; 32 miles N.E. of Verden.

SCHNOT-*Fiſh*, a name by which ſome call the haſela, or haſler, a freſh-water fiſh, approaching to the mullet or chub kinds, and at ſome ſeaſons eſteemed a very delicate diſh. See Hasela.

SCHNOTEBACH, in *Geography*, a town of Germany, in the county of Schwarzenberg; 4 miles W. of Schwarzenberg.

SCHOAMAN, a town of Aſia, in the country of Samarcand; 150 miles S.E. of Samarcand.

SCHOBERSTEIN, a mountain of Auſtria; 8 miles S. of Steyr.

SCHOBERT, ———, in *Biography*, a native of Straſburg, and a muſician who well deſerves a niche among inſtrumental compoſers and performers of the firſt claſs; his pieces for the harpſichord having been for many years the delight of all thoſe who could play, or hear them played. His firſt works were publiſhed at Straſburg about 1764; ſoon after which period he went to Paris, and was engaged in the ſervice of the prince de Conti, who always retained a very ſelect band, which in Germany would be called a chapel.

About the year 1771, he and his whole family, except one child that was out at nurſe with a friend, and a phyſician who dined with him, were poiſoned by eating *de faux champignons*, or funguſes, commonly called *toad-ſtools*, taking them for muſhrooms.

In 1766, we were the firſt who brought his compoſitions to England, when they had a run of favour of more than twenty years. His ſtyle never pleaſed in Germany ſo much as in England and France. Thoſe of Emanuel Bach's party allowed him to be a man of genius, but ſpoiled by his affectation of a new and extraordinary ſtyle, accuſing him of too frequently repeating himſelf. The truth is, the ſpirit and fire of his pieces require not only a ſtrong hand, but a *harpſichord*, to give them all their force and effect. They are too rapid, and have too many notes for clavichords, or piano fortes, which ſupply the place of harpſichords in Germany. The novelty and merit of Schobert's compoſitions ſeem to conſiſt in the introduction of the ſymphonic, or modern overture ſtyle, upon the harpſichord, and with the judicious uſe of a pedal by light and ſhade, alternate agitation and tranquillity, imitating the effects of an orcheſtra. The general uſe of piano fortes, for which the preſent compoſitions for keyed-inſtruments are chiefly written, has more contributed to leſſen the favour of Schobert's pieces, than their want of merit.

The character of this muſician being drawn up with energy and ſeeming truth by M. Laborde, we ſhall ſubjoin a tranſlation of it, in confirmation of our own opinion as far as we know by his works, without perſonal acquaintance, or having ever heard him perform.

"Schobert was one of the moſt aſtoniſhing profeſſors on the harpſichord who has ever been heard. He was engaged in the ſervice of the prince of Conti, and extremely beloved by that prince. His manners were as ſweet and ſimple, as his talents were extraordinary. It was neceſſary to ſee him perform extempore, to believe that what he did was poſſible. His written compoſitions, with and without accompaniments, are charming, and abounding with beautiful melody. His works are ſtill (1780) in the hands of all thoſe who cultivate the harpſichord and piano forte.

"The unfortunate Schobert, walking one day with his family and ſome friends in the fields of St. Gervais, a village in the environs of Paris, gathered ſome muſhrooms, which he imagined to be good; and having dreſſed them himſelf, eat of them, as did the reſt of his party. But torture ſoon enſued; and after incredible ſuffering, he died, as did moſt of his companions. One or two only eſcaped death, after long ſuffering."

The child at nurſe being left an orphan, was educated, and liberally provided for by the father's benevolent and affectionate patron, the good prince of Conti. Eſſai ſur la Muſique.

SCHOCKL, in *Geography*, a mountain of the duchy of Stiria; 8 miles N. of Gratz.

SCHODAC, a townſhip of Renſſelaer county, in New York, incorporated in 1795, and containing 3166 inhabitants, including 184 ſlaves; 9 miles S.E. of Albany.

SCHODEN, a town of Samogitia; 45 miles N.N.W. of Miedniki.

SCHODTWEIN, or Schaidtwein, a town of Auſtria, near a narrow paſs between Auſtria and Stiria, with a citadel on a high rock; 32 miles S. of Vienna.

SCHŒHHARA. See Schæhhara.

SCHOELLER, a town of the duchy of Berg; 4 miles E. of Medman.

SCHŒNANTH, or Schænanth. See Scænanth, and next article.

SCHŒNANTHUS, in *Botany*, from σχοινος, *a ruſh*, and ανθος, *a flower*, a ſynonym of the *Juneus odoratus*, or Camel's hay. This oriental plant has long been an article of the materia medica, but it is ſuppoſed that various aromatic graſſes have been, from time to time, confounded under the above denomination. *Andropogon Schœnanthus* of Linnæus is one of theſe; ſee Pluk. Phyt. t. 190. f. 1. Venten. Jard. de Cels, t. 89. Ger. Em. 43, 1631. Another may poſſibly be the *Andropogon* detected by Mr. Blane, on mountains to the north of Lucknow; of which a very able and learned account is given by his brother, the preſent ſir Gilbert Blane, in the Philoſophical Tranſactions, v. 80. 284. t. 16. This laſt, however, is there very ſatisfactorily preſumed to be the true *Nardus indica* of the ancients, and of our writers on drugs. (See Dale's Pharmacologia, 282.) Whether it may be the *Andropogon Nardus* of Linnæus, of which no ſpecimen exiſts in his herbarium, and which can be aſcertained by that of Hermann only, we cannot at preſent decide. His deſcription in Fl. Zeylanica, 19, is not unſuitable to our ſpecimen; particularly the compariſon of the ſmall leaves, on the panicle, to the huſks of oats. The botanical reader muſt not confound any of theſe plants with the Linnæan *Nardus indica*. See NARDUS.

SCHOENAS, among the ancients, a land meaſure containing two paraſangs, or ſixty ſtadia, according to Herodotus, which make ſeven and a half of our miles. But Pliny computes it at five miles, or fifty ſtadia. See PARASANG and STADIUM.

SCHOENBERG, in *Geography*, a town of France, in the department of the Sarre, and chief place of a canton, in the diſtrict of Prum. The place contains 281, and the canton 3542 inhabitants, in 45 communes.

SCHOENBRUNN, or *Beautiful Spring*, one of the eaſternmoſt ſettlements of the Moravians on Muſkingum river, eſtabliſhed in 1772, on a tract of land granted by the Delaware tribe. This thriving ſettlement was deſtroyed in 1782, when the Huron Indians carried the inhabitants to Sanduſky; but when theſe peaceable Indians were permitted to return to reap their harveſt, they were cruelly butchered by the American ſettlers. In 1788 congreſs granted 4000 acres of land here to the ſociety of the United Brethren, for the purpoſe of propagating the goſpel.

SCHŒNER, ——, in *Biography*, a neat and expreſſive performer on the violin, whoſe tone, leſs powerful than ſweet, was, in a room, every thing that could be wiſhed. He was a native of Switzerland, and arrived in England the latter end of the laſt century.

SCHŒNION, in *Ancient Muſic*, a nome or air for flutes.

SCHŒNOBATES, σχοινοϐατης, formed from σχοινος, *a rope*, and βαινω, *I walk*, a name which the ancient Greeks gave to their rope-dancers, by the Romans called *funambuli*.

The ſchœnobates were ſlaves, whoſe maſters made money of them by entertaining the people with their feats of activity. Mercurialis, de Arte Gymnaſtica, lib. iii. gives us five figures of ſchœnobates, engraven after ancient ſtones. See *Rope*-DANCER.

SCHŒNODUM, in *Botany*. See LYGINIA.

SCHŒNOPRASUM. See ALLIUM, n. 49.

SCHŒNUS, σχοινος, the Greek name for a ruſh, and ſynonimous with the Latin *Juncus*, is retained by Linnæus for a genus of ſimilar habit and uſe. Haller complains of it, not unjuſtly, as too near in ſound to *Schinus*, and prefers *Mariſcus*.—Linn. Gen. 29. Schreb. 41. Willd. Sp. Pl. v. 1. 259. Vahl. Enum. v. 2. 207. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 42. Prodr. Fl. Græc. Sibth. v. 1. 28. Ait. Hort. Kew. v. 1. 126. Brown Prodr. Nov. Holl. v. 1. 231. Purſh v. 1. 47. Juſſ. 27. Lamarck Illuſtr. t. 38.—Claſs and order, *Triandria Monogynia*. Nat. Ord. *Calamariæ*, Linn. *Cyperoideæ*, Juſſ.

Gen. Ch. *Cal.* Glumes ſeveral, chaffy, ſingle-valved, permanent; ſome of the outer ones ſmaller, cloſely imbricated, empty; the reſt collected into a ſpike, each ſingle-flowered. *Cor.* none. *Stam.* Filaments three, rarely two only, capillary; anthers linear-oblong, terminal, erect. *Piſt.* Germen ſuperior, triangular, roundiſh, obtuſe; ſtyle briſtle-ſhaped, the length of the glume; ſtigma in three, rarely two or four, ſlender ſegments. *Peric.* none. *Seed* ſolitary, roundiſh, embraced by the glumes.

Obſ. Linnæus remarks that ſome ſpecies are furniſhed with a few minute briſtles, originating from the receptacle, and embracing the baſe of the ſeed. Such ſpecies are referred by Mr. Brown to his new genus *Chætoſpora*, which differs from *Schœnus* in that reſpect alone, and not in habit, or any other character. The ſtyle in *Chætoſpora*, as well as in *Schœnus*, as limited by this learned writer and by Vahl, is deciduous. Their RHYNCHOSPORA, ſee that article, differs from both thoſe genera in having the ſeed tipped with the permanent baſe of the ſtyle, ſaid to be as broad as the ſeed. (See *S. albus* hereafter deſcribed.) Not having had ſufficient time or opportunity to examine for ourſelves all the copious and intricate tribes which compoſe the genera in queſtion, and their allies, we ſhall confine our preſent account to ſome of the moſt remarkable ſpecies of *Schœnus*, with or without briſtles at the baſe of the ſeed; particularly noticing all ſuch as are of Britiſh growth.

Eſſ. Ch. Glumes chaffy, crowded, permanent, ſingle-flowered; the outer ones empty. Corolla none. Seed ſolitary, roundiſh, embraced by its appropriate glume.

Section 1. *Stem roundiſh.*

S. *Mariſcus.* Prickly, or Long-rooted Bog-ruſh. Linn. Sp. Pl. 62. Willd. n. 1. Vahl. n. 34. Fl. Brit. n. 1. Engl. Bot. t. 950. (Mariſcus n. 1343; Hall. Hiſt. v. 2. 179. Cyperus longus inodorus ſylveſtris; Ger. Em. 29. Pſeudo-cyperus paluſtris, foliis et carinâ ſerratis; Scheuchz. Agroſt. 375. t. 8. f. 7—11.)—Stem round. Leaves prickly at the margin and keel. Panicles cloſe, erect, ſtamens two.—Native of boggy moors throughout Europe, from Sweden to Greece, flowering in July and Auguſt, but not a general Britiſh plant. The *roots* are perennial, very long and creeping. *Stems* three or four feet high, leafy, quite ſmooth. *Leaves* narrow, taper-pointed, edged with minute ſaw-like teeth, ſo as to cut the hand that graſps them incautiouſly. *Panicle* of numerous, cloſe, corymboſe branches, with many acute narrow floral leaves. *Spikelets* oblong, capitate, brown. *Stamens* only two, as deſcribed by Scheuchzer, and ſince remarked by Mr. Sowerby. *Germen* ovate, without briſtles at the baſe. *Stigmas* two, three, or four. *Fruit* a real ſmooth dry mealy *drupa*, containing an elliptical, pointed, triangular *ſeed*. The baſe of the *ſtyle* appears permanent in this ſpecies; but we would not from thence deduce any argument to invalidate the character of *Rhynchoſpora*, as we conceive *S. Mariſcus* ought, by its *fruit*, to conſtitute a ſeparate genus, to ſay nothing of its diandrous *flowers*.

S. *mucronatus.* Cluſtered Bog-ruſh. Linn. Sp. Pl. 63. Willd. n. 3. Vahl. n. 15. Sm. Fl. Græc. Sibth. v. 1. 30. t. 43. (Cyperus ægyptiacus; Gloxin Obſ. Bot. 20. t. 3. Scirpus maritimus, capite glomerato; Scheuchz. Agr. 367. t. 8. f. 1. Juncus maritimus; Lob. Ic. 87.)—Stem round, naked. Spikelets ovate, tufted. Leaves channelled, recurved; three of them cloſe to the flowers.—Native of the ſandy ſea-coaſts of the ſouth of Europe, and north of Africa. *Root* perennial, creeping by means of long runners, and ſending forth many ſtrong downy fibres. *Stems* ſolitary, erect, ſtraight, a foot high, round and ſmooth, naked, except at the top and bottom. *Leaves* as long as the ſtem, but ſtrongly recurved, channelled, without a keel, rough-edged, pungent, ſlightly glaucous. *Flowers* compoſing a denſe, round, ſeſſile head; their *glumes* keeled, and more compreſſed than uſual in this genus.

S. *nigricans*. Black Bog-ruſh. Linn. Sp. Pl. 64. Willd. n. 9. Vahl. n. 2. Fl. Brit. n. 2. Engl. Bot. t. 1121. (Cyperus n. 1347; Hall. Hiſt. v. 2. 181. Junco affinis, capitulo glomerato nigricante; Scheuchz. Agr. 349. t. 7. f. 12—14. Juncus capitatus, lithoſpermi ſemine; Moriſ. ſect. 8. t. 10. f. 28.)—Stem round, naked. Head ovate, of many ſpikelets. One of the two involucral leaves awl-ſhaped, and longer than the other.—Common on turfy, ſpongy bogs, that are liable to become dry in ſummer, in all parts of Europe, as well as at the Cape of Good Hope. It flowers with us in June. The perennial tufted *root* conſiſts of ſtrong black fibres, and is crowned with blackiſh, poliſhed, ſheathing ſcales. *Stem* about a foot high. *Leaves* erect, very narrow, ſemi-cylindrical, with a dilated ſheathing baſe. Head of *flowers* blackiſh, about half an inch broad, ſurmounted by the leafy point of its *involucrum*. *Germen* encompaſſed with three ſhort, narrow, acute ſcales. *Seed* white and poliſhed, pointed, with ſcarcely any viſible ſcales at its baſe.

S. *ferrugineus*. Iron-coloured Bog-ruſh. Linn. Sp. Pl. 64. Fl. Suec. ed. 2. 14. Willd. n. 10. Vahl. n. 1.—Stem round, naked. Head of about two ſpikelets, nearly equal to the longeſt involucral leaf. Seed ſurrounded with ſeveral briſtles, twice its own length.—Native of mountain bogs in Sweden and Switzerland. We know of no figure of this rare little-known ſpecies, the ſynonyms of Ray and Moriſon, cited by Linnæus, belonging to his *Juncus triglumis*; ſo that this *Schœnus* has been erroneouſly ſuppoſed a Britiſh production. The Weſtmoreland ſpecimen in Dickſon's Hortus Siccus, faſc. 10. 5, is certainly *S. nigricans*. The true *ferrugineus* is much more ſlender, though of equal height, and its little black *heads* conſiſt of but two, rarely three, *ſpikelets*, ſcarcely overtopped by one taper-pointed leaf of their *involucrum*. The moſt eſſential difference however was pointed out to us by M. du Cros, an excellent Swiſs botaniſt, in the long, ſlender, permanent briſtles, four, five, or ſix in number, which ſurround the ripe *ſeed*; whereas in the *nigricans*, though Mr. Sowerby has detected ſcales under the *germen* in its *flowers*, none are viſible when the *ſeed* is ripe, and Vahl therefore denies the exiſtence of any ſuch. As no principle whatever could be allowed to ſeparate theſe plants generically, the above diſtinction might ſeem of itſelf a ſufficient objection to Mr. Brown's *Chætoſpora*, were there no ſcales at all to be found during the flowering ſtate of the *nigricans*.

S. *compreſſus*. Compreſſed Bog-ruſh. Linn. Sp. Pl. 65. Vahl. n. 17. Fl. Brit. n. 3. Engl. Bot. t. 791. Rel. Rudb. 3. f. 2. Leers Herborn. 9. t. 1. f. 1. (Carex uliginoſa; Linn. Sp. Pl. 1381. Fl. Suec. ed. 2. 325. Scirpus caricis; Willd. Sp. Pl. v. 1. 292. S. n. 1342; Hall. Hiſt. v. 2. 179. Gramen cyperoides, ſpicâ ſimplici, compreſſâ, diſtichâ; Scheuchz. Agr. 490. t. 11. f. 6.)—Stem naked, nearly round. Spike two-ranked, ſhorter than the ſolitary involucral leaf; ſpikelets many-flowered. Seed ſurrounded with briſtles. Leaves flat, with a prominent keel.—Found in the turfy bogs, or wet ſpongy meadows, of Sweden, Germany, Switzerland, Italy, and England, flowering in July. The *root* is ſlightly creeping. *Stems* hardly a foot high, ſtriated, a little flattened at one ſide. *Leaves* bright green, ſheathing the baſe of the ſtem, flat, except the prominent rib. *Spike* cheſnut-coloured, ſhining, compreſſed, above an inch long, formed of many *ſpikelets*, diſpoſed in two oppoſite rows. *Bractea*, or *involucral leaf*, ſolitary, triangular, and rough at the end, moſtly taller than the ſpike. *Stigma* in two rough diviſions. *Germen* and *ſeed* ſurrounded by ſeveral long rough briſtles.

S. *rufus*. Brown Bog-ruſh. Hudſ. 15. Vahl. n. 18. Fl. Brit. n. 4. Engl. Bot. t. 1010. Dickſ. Hort. Sicc. faſc. 10. 6. (S. ferrugineus; Hudſ. 15. Lightf. 86, excluding Moriſon's ſynonym. S. compreſſi varietas; Lightf. 1138. t. 24. f. 2.)—Stem round, naked. Spike two-ranked, longer than the ſolitary obtuſe involucral leaf; ſpikelets of few flowers. Seed without briſtles. Leaves channelled, without a keel.—Native of ſandy marſhes, near the ſea, in Scotland, Angleſea, the weſt of Ireland, and Lancaſhire, flowering in July. *Root* creeping. *Plant* ſmaller than the laſt, with ſhorter, darker-coloured *ſpikes*, and diſtinguiſhed by its channelled *leaves*, deſtitute of a midrib; as well as by the want of ſcales, or briſtles, under the *germen*. The uſually accurate Mr. Yalden indeed has left a manuſcript note to the contrary; but Mr. Sowerby's obſervations coincide with our's, that there are no rudiments of ſcales at any period. This ſpecies is nevertheleſs inſeparably connected, as to genus, with the laſt.

S. *Bobartiæ*. Hop-ſpiked Bog-ruſh. Retz. Obſ. faſc. 4. 9. Willd. n. 20. Vahl. n. 13.—Stem compreſſed, naked. Spikelets ovate, numerous, in an ovate head, ſubtended by five long leaves. Glumes tumid, ſtriated.—Gathered in the Eaſt Indies by Koenig, from whom we have a named ſpecimen. Retzius thinks it was found in Ceylon. *Root* of long brown fibres. *Stems* ſeveral, a ſpan high, crowded, erect, ſimple, ſtriated, leafy at the bottom and top only; thick, and apparently bulbous, at the baſe. *Leaves* flat, ſmooth, graſſy; the radical ones often taller than the ſtem; the floral ones dependent, unequal, but partly as long as the ſtem itſelf. *Heads* ſolitary, ovate, an inch long, formed of numerous, ſmall, oval, pale green, hop-like *ſpikelets*, whoſe *glumes* are imbricated every way, ovate, concave, copiouſly ſtriated, blunt, with a ſmall point. *Seeds* elliptical, bluntly triangular, concave at the ſides, brown, unpoliſhed, minutely dotted, obtuſe, without any remains of the *ſtyle*, and, as far as we can diſcern, deſtitute of any ſcales or briſtles at the baſe. No figure exiſts of this rare ſpecies, nor have many botaniſts ever ſeen a ſpecimen.

Sect. 2. *Stem triangular.*

S. *ſtellatus*. Starry-ſpiked Bog-ruſh. Swartz Ind. Occ. v. 1. 102. Willd. n. 21. (Dichromena leucocephala; Vahl. Enum. v. 2. 240. Michaux Boreali-Amer. v. 1. 37. Purſh v. 1. 47. Gramen cyperoides, ſpicâ compactâ albâ, foliis ad ſpicam partim albis partim viridibus; Sloane Jam. v. 1. 119. t. 78. f. 1.)—Stem naked, obtuſely triangular. Spikelets crowded, in a roundiſh head, ſubtended by ſeveral long leaves, coloured at their baſe. Glumes even, ſingle-ribbed. Seed nearly globular, minutely corrugated, without briſtles.—Native of Jamaica, in places that are occaſionally inundated in rainy weather. *Sloane*. Found in wet places, in Lower Carolina, and Georgia, flowering in July. *Michaux* and *Purſh*. This has much of the habit of the laſt-deſcribed, but is more ſlender, and the *ſtems* are not bulbous at the bottom. *Involucral leaves* ſix, ſpreading; dilated and white at their baſe. *Spikelets* few, ovate, pale green or whitiſh, with membranous *glumes*. *Seed* ſmall, nearly globular, obtuſely triangular, marked with fine tranſverſe wrinkles, which make the principal part of the character of Vahl's *Dichromena*; for the want of *briſtles* beneath the *ſeed*, can ſurely avail little, as to a natural generic diſtinction.

S. *glomeratus*. Cluſter-headed Bog-ruſh. Linn. Sp. Pl. 65.

65. Willd. n. 27. (Rhynchoſpora glomerata; Vahl. Enum. v. 2. 234 Purſh v. 1. 48.) — Stem triangular, leafy. Spikelets in corymboſe, twin, diſtant, axillary tufts. Leaves lanceolate. Seed beaked, with ſeveral rough briſtles at its baſe.—Native of wet meadows in Jamaica, Carolina, and Pennſylvania, flowering in June and July. *Root* perennial. *Stem* erect, two feet high or more, bearing ſeveral flat, graſſy, ſmooth, alternate *leaves*, with cloſe, tubular, abrupt ſheaths. From each of theſe ſheaths proceed two capillary unequal *ſtalks*, bearing corymboſe tufts of ſmall, brown, ſhining, lanceolate, acute *ſpikelets*. The *ſeed* is obovate, brown, ſmooth and ſhining, with a flat, pale, taper beak, of its own length. The *briſtles* are about ſix, rough with deflexed teeth, and longer than the ſeed.

S. *albus*. White-headed Bog-ruſh. Linn. Sp. Pl. 65. Willd. n. 35. Fl. Brit. n. 5. Engl. Bot. 985. Fl. Dan. t. 320. (Rhynchoſpora alba; Vahl. Enum. v. 2. 236. Ait. Hort. Kew. v. 1. 127. Purſh v. 1. 49. Gramen cyperoides paluſtre leucanthemum; Scheuchz. Agr. 503. t. 11. f. 2. G. junceum leucanthemum; Ger. Em. 30*. Scirpus n. 1341. Hall. Hiſt. v. 2. 179.)—Stem triangular, leafy. Spikelets in corymboſe tufts; the axillary ones ſolitary. Leaves briſtle-ſhaped, channelled. Stamens two. Seed beaked, with ten briſtles at the baſe.—Native of turfy bogs, in England and other parts of Europe, eſpecially in mountainous ſituations, flowering in July or Auguſt. Mr. Purſh ſpeaks of it as common in North America. The habit of this plant reſembles the preceding, but its height is ſeldom more than twelve or fifteen inches, and the *leaves* are ſetaceous, not flat or graſſy. The *flower-ſtalks* which ſpring from the ſheaths of the ſtem-leaves are ſolitary. *Spikelets* white, with a brown or fleſh-coloured tinge, very elegant, moſt numerous in the upper or terminal tufts. The *ſtamens*, as Scheuchzer firſt noticed in his plate, are only two. *Seed* obovate, ſurrounded with ten rough briſtles, and tipped with a beak rather ſmaller than in the laſt. This beak did not eſcape the accurate Scheuchzer.

S. *fuſcus*. Brown-headed Bog-ruſh. Linn. Sp. Pl. 1664. Willd. n. 11. Ehrh. Beitr. v. 4. 154. Phytoph. 1. Engl. Bot. t. 1575. (Rhynchoſpora fuſca; Ait. Hort. Kew. v. 1. 127. R. alba β; Vahl. Enum. v. 2. 236. Cyperus minor anguſtifolius paluſtris, capitulis fuſcis paleaceis; Moriſ. ſect. 8. t. 11. f. 40? Dill. in Raii Syn. 427?) —Stem triangular, leafy. Spikelets in oblong tufts. Leaves thread-ſhaped. Stamens three. Seed beaked, with three briſtles at the baſe.—Found in bogs near Upſal, by Ehrhart; in Germany by Roth; from both of whom we have authentic ſpecimens, agreeing with thoſe of Linnæus, who erred greatly in deſcribing the *ſtem* as round. Mr. Mackay met with this plant on a bog near Killarney in Ireland; and Mr. E. Forſter on Cromlyn bog, near Swanſea in South Wales. It flowers in Auguſt, and has a perennial creeping *root*. The whole plant is ſmaller, the *leaves* more ſlender, and the *heads*, or rather *ſpikes*, more oblong, than in *S. albus*, of which it is made a variety in *Fl. Brit.* All doubt is removed by a compariſon of their parts of fructification, *S. fuſcus* having three *ſtamens*, and only three briſtles, alternate therewith, at the baſe of the *ſeed*. The length of the *ſtyle* varies. The *ſtigma* in each ſpecies has only two ſegments. Ehrhart firſt clearly determined the differences between theſe two ſpecies, but he announces his diſcovery in a ſupercilious and unbecoming manner; ſee his *Beiträge*.

Schœnus, in *Ancient Geography*, a port of Corinth, on the gulf, N. of Cenchrea.—Alſo, a river of Greece, in Bœotia.—Alſo, a ſmall country of the Peloponneſus.—Alſo, a town of the Peloponneſus, in Arcadia, N.W. of Mantinea.

SCHŒPFIA, in *Botany*, received its name from Schreber, in honour of John David Schoepf, Preſident of the Medical College at Anſpach, author of a *Materia Medica Americana*, and ſome few tracts on natural hiſtory.—Schreb. 129. Willd. Sp. Pl. v. 1. 996. Mart. Mill. Dict. v. 4. (Codonium; Vahl.)—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Aggregatæ*, Linn. *Caprifolia*, Juſſ.

Gen. Ch. *Cal.* Perianth incruſting the bottom of the germen, turbinate, angular, indiſtinctly five-toothed. *Cor.* of one petal, bell-ſhaped, ten-furrowed at the baſe, cloven into five, triangular, acute, reflexed ſegments. *Stam.* Filaments five, very ſhort; anthers twin, erect, at the mouth of the corolla. *Piſt.* Germen turbinate, ſemi-inferior, within the corolla, crowned with a ſemi-globular, porous gland; ſtyle ſhorter than the corolla, cylindrical, erect; ſtigma capitate, trifid. *Peric.* Drupa with three cells, but perfecting only one *ſeed*.

Eſſ. Ch. Corolla bell-ſhaped. Calyx double, the outer cloven, inferior; the inner entire, ſuperior. Stigma capitate. Drupa ſingle-ſeeded.

1. S. *americana*. Willd. ("Codonium arboreſcens; Vahl. Symb. v. 3. 36. Act. Hafn. v. 2. p. 1. 206. t. 6.") —Native of Santa Cruz and Montſerrat, where, according to Vahl, it was firſt diſcovered by Von Rohr.—A ſmall *tree* eight or ten feet in height, whoſe *branches* are round and ſmooth. *Leaves* alternate, ſtalked, ovate, ſmooth, attenuated, obtuſe, entire. *Flower-ſtalks* axillary, moſtly in pairs, ſingle-flowered, but occaſionally two or three-flowered. It has ſometimes only four ſtamens, and is nearly allied to *Lonicera* and *Loranthus*.

Willdenow remarks, that although Schreber has deſcribed this genus with a three-celled drupa, it is moſt unqueſtionably the ſame plant as Vahl's *Codonium*.

SCHŒPFLIN, John-Daniel, in *Biography*, a writer in hiſtory, was born in 1694, at Saltzburg, in the Briſgau. He ſtudied at Baſil and alſo at Straſburg, and in 1720 he was choſen profeſſor of eloquence and hiſtory at the latter univerſity. Here he obtained a large ſhare of reputation, and was invited by various princes and univerſities to come and reſide among them, but he preferred continuing at Straſburg. In 1726 he travelled into France, Italy, and England, and on his return he was preſented with a canonry of St. Thomas. Having planned a hiſtory of Alſace, he travelled into the Low Countries, Germany, and Switzerland, in ſearch of materials, and in 1751 he publiſhed the firſt volume of his "Alſatia illuſtrata." When he preſented this to the king of France, he took the opportunity of pleading for the privileges of the Proteſtant univerſity of Straſburg, and obtained a confirmation of them. In 1761 the ſecond volume was given to the public, and during the interval he had publiſhed his "Vindiciæ Celticæ," which was an account of the origin, language, &c. of the Celts. He alſo prepared, as ſupplements to the hiſtory of Alſace, a collection of its charters, and an account of its learned men, which his ſucceſſor in the profeſſorſhip, M. Koch, publiſhed under the titles of "Alſatia diplomatica," and "Alſaticarum Rerum Scriptores." The laſt great work of Schœpflin was a moſt elaborate hiſtory of his native ſtate, intitled "Hiſtoria Zuringo-Badenſis," 7 vols. 4to. 1763—6. He was author of ſeveral diſſertations printed in the Memoirs of the Academy of Inſcriptions and Belles Lettres, of which one is an attempt to prove that Guttemberg firſt practiſed the art of printing at Straſburg, which M. Schœffer afterwards brought to perfection at Mentz. Schœpflin had collected a fine library and muſeum attached to it, which, in the end, he liberally preſented to the city of Straſburg. Of this a deſcription has been publiſhed by Oberlin, under the title of "Muſæum Schœpflinianum." This learned man died at Straſburg in 1771, at the age of 77.

SCHOERDAAL, in *Geography*, a town of Norway, in the province of Drontheim; 24 miles E.N.E. of Drontheim.

SCHOFFERSTEIN, a town of Auſtria; 14 miles S.E. of Steyr.

SCHOGR, or SHAGR, a town of Aſiatic Turkey, in the pachalic of Aleppo, on the Orontes; 40 miles W. of Aleppo.

SCHOHARIE, a county of New York, taken from Albany and Otſego counties, and incorporated in 1795; it is bounded on the N. by Montgomery, S. by Greene and Delaware, E. by Albany, and W. by Otſego. Its area is about 565 ſquare miles, or 361,600 acres. By a law paſſed in March 1797, this county was divided into eight townſhips; and contains 18,945 inhabitants, many of whom are rich. The land is variegated with hills; it is in general fertile, and well watered by the Schoharie, Cobus Kill, and ſeveral other ſtreams. A ſingular inſtance of petrifaction is found in this county; it is a hill of conſiderable ſize, which is a mere maſs of petrified ſhells. This county ſends two members to the houſe of aſſembly.

SCHOHARIE, a poſt townſhip in the above-mentioned county, ſituated on Schoharie creek or river; its area is about 80 miles ſquare, and it contained in 1810, 3232 inhabitants, 125 being ſlaves; and 266 electors. In 1810 this townſhip had 139 looms in families, which produced about 32,000 yards of cloth. The public buildings are, a court-houſe of ſtone, three ſtories high, a brick church, and another of ſtone. In this townſhip are two ſmall villages; *viz.* Schoharie, beautifully ſituated on the Schoharie flats, 32 miles W. of Albany, which has the county buildings, two churches, about 25 houſes, a poſt-office, and two ſchool-houſes; and Eſperance, 8 miles N. of Schoharie, and 26 miles W. of Albany.

SCHOHARIE *River* purſues a northerly courſe of about 80 miles from the Kaat's Kill mountains, and diſcharges itſelf into Mohawk river at Fort Hunter; the weſtern branch of this river is called Cobus Kill; and on the E. ſide of Cobus is the ſettlement of its name.

SCHOKA, a town of Pruſſia, in the province of Samland; 18 miles W. of Königſberg.

SCHOKLAND, an iſland in the Zuyder Sea, near the coaſt of Overiſſel, about three miles long, and two broad; 8 miles W. of Vollenhoven.

SCHOLARES, an eccleſiaſtic order, inſtituted by Innocent III. in the council of Lateran.

SCHOLARUM DOMESTICUS. See DOMESTICUS.

SCHOLASTIC, σχολαςικος, ſomething belonging to the ſchools, or that is taught in ſchools. See SCHOOL.

Scholaſtic, ſcholaſticus, was a long time a title of honour, at firſt only given to ſuch as diſtinguiſhed themſelves by their eloquence in declaiming, &c.

After Nero, the appellation ſcholaſticus was alſo given to the advocates; and, among others, to Socrates and Euſebius, of the eccleſiaſtical hiſtorians, who were both advocates at Conſtantinople. Conſtant. Harmenopulus alſo bore it, in the twelfth century; with ſeveral others.

Afterwards ſcholaſticus became reſtrained to ſuch as had the government of the eccleſiaſtical ſchools, eſtabliſhed under the firſt race of French kings, who inſtructed the clerks of each church, firſt in the humanities, then in the theology, and the liturgy. Theſe were alſo called *primiciers eſcolaſtres*, and *theologaux:* and, if the church were ſituated in a city, the ſcholaſticus was called the *chancellor*.

Among the Greeks, ſcholaſticus, σχολαςικος, was alſo the name of an office, or dignity, anſwering to our *divine* or *theologue*. Indeed, Genebrard obſerves, it was only properly applied to people of general learning and fine parts; and who were well known to the world in that character.

Thus St. Jerom mentions, that Serapion was ſurnamed *Scholaſticus*, by reaſon of the delicacy of his wit. Walafrid. Strabo calls the poet Prudentius *ſcholaſticus:* and Fortunatus was called *Scholaſticiſſimus*.

SCHOLASTIC *Age*. See SCHOLASTICS.

SCHOLASTIC *Philoſophy*, a name given to the dialectic or Ariſtotelian philoſophy, which, loaded with metaphyſical ſubtleties, had been ſtudied and profeſſed by ſeveral of the clergy towards the cloſe of the 11th century, and which began at the opening of the 12th to be publicly taught in the ſchools, and to take the lead of every other kind of learning. It gained eſteem at this period, becauſe it was ſuppoſed to be the key of theology, without which it would be impoſſible to unlock the myſteries of ſacred wiſdom. It was on account of this fancied alliance between logic and theology, that the former was made the principal object of ſtudy in all the ſchools, and that thoſe who excelled in the dialectic art were regarded with the higheſt admiration, and attended by crowds of pupils. There were alſo other collateral circumſtances which contributed to the prevalence of a taſte for logical diſputations. The Ariſtotelian philoſophy had for ſeveral centuries been ſtudied by the Saracens, and was at this time taught in their ſchools in Spain. Theſe ſchools were viſited by many of the weſtern Chriſtians, who learned Arabic, that they might be able to read tranſlations of Ariſtotle, and other philoſophical writers in that language, and who afterwards tranſlated many Arabic books into the European tongues. The firſt perſon who undertook this taſk ſeems to have been Conſtantine Afer, a monk of Caſſino. Daniel Morley alſo, of Norfolk, a ſtudent in the univerſities of Oxford and Paris, viſited Spain, and learned mathematics in the Arabic tongue at Toledo, and on his return publiſhed books in Latin, one "De inferiori et ſuperiori parte Mundi," and another "De Principiis Mathematicis." He was followed by Robert Retin, archdeacon of Pampelona in Spain, who wrote a Latin tranſlation of the Koran, and Adelard, an Engliſh monk of the Benedictine monaſtery at Bath, in the reign of Henry I., who learned Arabic, and tranſlated from that language many Greek writings, among which were the Elements of Euclid.

Another cauſe which ſeemed to eſtabliſh a general taſte for the Peripatetic philoſophy, and particularly for the Ariſtotelian logic, was the circumſtance, that about this period many Greek copies of the writings of Ariſtotle were brought from Conſtantinople into the Weſt. This fondneſs for logical diſputations, however, occaſioned an inundation of new opinions, which alarmed the guardians of the church; and the ſynod of Paris paſſed a ſentence, prohibiting the uſe of the phyſical and metaphyſical writings of Ariſtotle in the ſchools; which ſentence was afterwards confirmed by the council of Lateran, under pope Innocent III. Theſe violent meaſures increaſed the evils againſt which they were directed; and it was at length found neceſſary, by degrees, and under certain reſtrictions, to favour the ſtudy of Ariſtotle: ſo that his dialectics, phyſics, and metaphyſics, were by expreſs ſtatute received into the univerſity of Paris. In ſeveral other countries, the Ariſtotelian philoſophy was received with leſs oppoſition. The name of Ariſtotle, from the end of the 12th century, obtained univerſal dominion; and his writings were ſo far from falling under the cenſure of councils and popes, that the Ariſtotelian and Saracenic philoſophy became the main pillars of the eccleſiaſtical hierarchy.

During

SCHOLASTIC PHILOSOPHY.

During the period that elapſed from the 12th to the 14th century, though many perſons profeſſed to philoſophiſe, true philoſophy and learning made little progreſs. The Scholaſtics loſt themſelves in metaphyſical darkneſs. They carried on their diſputes with ſuch vehemence, that many ludicrous and many bloody frays happened among them. The whole world was diſturbed with the idle conteſts of the ſcholaſtic philoſophy from the 12th century to the Reformation; and ſo deeply did this philoſophy take root, that even to this day it has not been entirely extirpated.

The origin of the ſcholaſtic philoſophy may be eaſily traced. The high reputation which St. Auguſtine obtained in the Chriſtian church, gave his treatiſe on dialectics univerſal authority, and led thoſe who were inclined to philoſophiſe, implicitly to follow his method of applying the ſubtleties of Stoic reaſoning, and the myſteries of the Platonic doctrine, to the explanation of the ſacred doctrines of revelation. The dialectic art, thus introduced, was further encouraged by Latin verſions of ſome of the writings of Ariſtotle, and of Porphyry's Introduction to the Categories. The ſtudy of logical ſubtleties was purſued under theſe guides in the ſchools of the monaſteries, particularly in Ireland, whence many ſcholars from England and Scotland carried this kind of philoſophy into their own countries; and from Britain it afterwards paſſed into France, and other parts of Europe.

From this time, the eccleſiaſtics, who, during a long period of tumult and barbariſm, kept the ſmall remains of learning and philoſophy in their own hands, made no other uſe of them than as pillars to ſupport the hierarchy, or as weapons of defence againſt its adverſaries. The whole hiſtory of the church, from the 8th to the 11th century, proves that ſcholaſtic men, that is, the profeſſors of philoſophy and theology in the monaſtic ſchools, ſtudied and taught philoſophy only for this purpoſe; and there can be no doubt, that the violent eccleſiaſtical diſputes of theſe times foſtered that diſpoſition towards ſubtle refinement in ſpeculation, which at length brought the ſcholaſtic philoſophy to maturity. Towards the cloſe of the 11th century, this ſpirit ſo generally prevailed, that diſputation upon theology and philoſophy became the chief occupation and amuſement of the learned; and, in proceſs of time, various ſects ſprung up, in which queſtions purely logical were confounded with points of theology, and dialectics were applied to the explanation of the ſcriptures. This kind of philoſophy was taught not only in the monaſtic ſchools, but in public academies; and Ariſtotle, at firſt imperfectly repreſented in Arabic and Latin verſions, and afterwards brought into full view in his own original writings, obtained ſovereign authority in the whole Chriſtian world. Thus the ſcholaſtic philoſophy appears not to have been the invention of any one man, but to have riſen up by almoſt imperceptible degrees from the 5th to the 12th century, when it attained its maturity.

The leading character of the ſcholaſtic philoſophy was, that it employed itſelf in an oſtentatious diſplay of ingenuity, in which axioms aſſumed without examination, diſtinctions without any real difference, and terms without any preciſe meaning, were made uſe of as weapons of aſſault and defence, in controverſies upon abſtruſe queſtions, which, after endleſs ſkirmiſhes, it was impoſſible to bring to any iſſue, and which, notwithſtanding all the violence of the conteſt, it was of no importance to determine. The ſcholaſtic logic is not to be confounded with the genuine art of reaſoning from which it differs, as much as droſs from pure gold. Theſe diſputants made uſe of dialectics, not to aſſiſt the human underſtanding in diſcovering truth conducive to the happineſs of man, but to ſecure to themſelves the honours of conqueſt in the field of controverſy. John of Saliſbury complains, that the ſcholars of his time conſumed not ten or twenty years, but their whole lives, in theſe diſputes; and that when, through old age, they became incapable of any other amuſement or pleaſure, theſe dialectic queſtions ſtill dwelt upon their tongues, and dialectic books ſtill remained in their hands.

It is ſcarcely to be conceived with what ardour, approaching even to madneſs, the firſt geniuſes of the age applied to this kind of ſtudy. Loſing themſelves in a wood of abſtract conceptions and ſubtle diſtinctions, the further they proceeded the greater were the darkneſs and confuſion, till at length what was commonly called philoſophy no longer deſerved the name. Ludovicus Vives, one of the moſt intelligent writers of the 16th century, ſpeaking of the ſcholaſtic philoſophy, ſays, "from the writings of Ariſtotle they have ſelected not the moſt uſeful, but the moſt intricate and unprofitable parts; not his books of Natural Hiſtory or his Problems, but his Phyſics, and thoſe treatiſes which moſt reſemble theirs in ſubtlety and obſcurity; for example, his books upon the Firſt Philoſophy, upon Heaven, and upon Generation. For as to the treatiſe on Meteors, they are ſo entirely unacquainted with the ſubject, that it ſeems to have been admitted among the ſcholaſtic books rather by accident than deſign. The truth is, that theſe philoſophers are leſs acquainted with nature than huſbandmen or mechanics; and ſo much offended are they with that nature which they do not underſtand, that they have framed for themſelves another nature, which God never framed, conſiſting of formalities, hæcceities, realities, relations, Platonic ideas, and other ſubtleties, which they honour with the name of the *metaphyſical world*; and if any man has a turn of mind averſe to the ſtudy of real nature, but adapted to the purſuit of theſe viſionary fictions, they ſay he is poſſeſſed of a ſublime genius.

"The topics, upon which theſe philoſophers ſpent the whole force of their ingenuity, were of a kind at once the moſt difficult and abſtruſe, and the moſt trifling and uſeleſs. Intention and remiſſion, proportion and degree, infinity, formality, quiddity, individuality, and other abſtract ideas, furniſhed innumerable queſtions to exerciſe their ſubtlety. Not contented with conſidering properties and relations as they ſubſiſt, and are perceived in natural objects, they ſeparated, in their conceptions, the former from the latter, and by this artifice transferred them into univerſal notions. Then forgetting that theſe notions are merely the offspring of the reaſoning mind, they conſidered them as real entities, and made uſe of them as ſubſtantial principles in explaining the nature of things. This they did not only in metaphyſics but in phyſics, in which theſe imaginary entities confuſed and obſcured all their reaſonings. If theſe creatures of abſtraction be brought back to their natural connection with real objects, and with the terms which expreſs them, it will appear, that they had nothing more than an imaginary exiſtence, and the whole conteſt concerning them will vaniſh into a mere war of words. Whence ſome judgment may be formed concerning the value of this moſt profound, angelic, and ſeraphic philoſophy."

Notwithſtanding all the homage which was paid to the name of Ariſtotle, it is certain that the Scholaſtics were very imperfectly acquainted with the true ſenſe of his writings: for, not to inſiſt at preſent upon the difficulties which unavoidably attend the ſtudy of his works, ariſing from the abſtract nature of the ſubjects upon which he treats, from the ſtudied ambiguity with which he frequently writes, from the extreme conciſeneſs of his ſtyle, and from his obſcure and defective report of the opinions of preceding philoſophers, it muſt be recollected that theſe philoſophers engaged in the ſtudy of Ariſtotle without a previous acquaintance with hiſtory, or with the Greek philoſophy, and even without the knowledge of the Greek language, and ſaw the doctrines of their maſter through the obſcure medium of very imperfect tranſlations. Hence they never underſtood his whole ſyſtem in connection, and often created monſtrous forms, at which the Stagyrite himſelf would have been terrified.

The ſcholaſtic philoſophy, thus introduced, and ſupported by the authority of Ariſtotle, derived its complete eſtabliſhment from the firm alliance into which it entered with theology, and the honours and emoluments which were, in conſequence of this alliance, beſtowed upon thoſe who excelled in this kind of learning. Dialectics having been found an uſeful inſtrument in eſtabliſhing the prevailing theological ſyſtem, eminence in this art became the ſure road to eccleſiaſtical preferment. Almoſt all the great men, who are mentioned under the article Scholastics, roſe to diſtinction through their knowledge of ſubtile queſtions in metaphyſics, and through their adroitneſs in wielding the weapons of logic. Excellence in the ſcholaſtic art of trifling was not only ſufficient to procure the high titles of Moſt Profound, Subtle, Reſolute, Wonderful, Angelic, or Seraphic Doctor, but to create profeſſors, abbots, biſhops, cardinals, and even pontiffs. What wonder, that the ſcholaſtic philoſophy univerſally prevailed?

The effects of its prevalence were of the moſt ſerious nature. Beſides the extravagant waſte of time which theſe diſputes occaſioned, they introduced an abſurd kind of vanity, which perſuaded theſe ſublime doctors to believe, that they had arrived at the ſummit of wiſdom, both human and divine, and gave occaſion to violent conteſts, which often terminated in ſomething worſe than a mere war of words. Theology, already ſufficiently clouded and corrupted by the ſpeculations and diſputes of former ages, by admitting into its ſervice ſcholaſtic philoſophy involved itſelf in new obſcurity; ſo that inſtead of the plain and ſimple doctrines of religion, little elſe was to be found in the writings of theologians, but vague notions, and verbal diſtinctions. As an example of the miſchief which aroſe to theology from this alliance, we may mention the doctrine of Tranſubſtantiation, which firſt ſprung up at this period, and concerning which the moſt violent diſputes aroſe between Berengar and his heretical partizans on the one ſide, and Lanfranc and his orthodox brethren on the other, till at length this abſurd dogma paſſed into an article of faith.

Another evil which aroſe from the ſcholaſtic philoſophy was, that inſtead of attempting to diſtinguiſh the real differences of things, and to deduce clear concluſions from certain principles, in order to enlarge the boundaries of human knowledge, it employed all the powers of ingenuity, and all the arts of ſophiſtry, to obſcure the principles of ſcience, to mix truth with fallacy, and to open the door to univerſal ſcepticiſm. By the help of confuſed notions, unmeaning diſtinctions, barbarous terms, and a ſophiſtical method of reaſoning, men were prepared to advance and defend the moſt frivolous and abſurd poſitions; both theological and philoſophical diſputations degenerated into a mere trial of ſkill; and the honeſt enquirer after truth was left without any certain guide. The conſequences were, that tenets deſtructive of all religion were often publicly maintained in the ſchools; a corrupt ſyſtem of moral philoſophy, which left open many avenues to diſhoneſty and debauchery, was taught; and great depravity of manners prevailed.

This corruption of opinions and manners was accompanied with barbariſm of language. Little attention was now paid to the ſtudy of grammar, or rhetoric; a vaſt maſs of terms, wholly unknown in the Auguſtine age, were introduced into the Latin tongue, to expreſs the abſtract notions of dialectics and metaphyſics; and a verboſe, puerile, and inelegant mode of writing generally prevailed. John of Saliſbury, who took much pains to revive an attention to literature, complained, that in his time, thoſe who profeſſed to be acquainted with all arts, both liberal and mechanic, and to teach them in a ſhort time, neglected the ſtudy of grammar; whence they were ignorant of the firſt art, without which it is in vain that any one attempts to become maſter of the reſt. Even the beſt writers of this period were not wholly free from literary barbariſm.

Although logic and metaphyſics were the peculiar province of the Scholaſtics, their labours in theſe branches of learning were of little uſe. Their logic was rather the art of ſophiſtry than that of reaſoning; for it was applied to ſubjects which they did not underſtand, and employed upon principles which were not aſcertained. Their whole buſineſs being diſputation, they ſought out for ſuch thorny queſtions as were likely to afford them ſufficient exerciſe for their ingenuity. Their whole care was to conduct themſelves in the conteſt by the rules of art, and their whole ambition to obtain the victory. For want of clear principles, and accurate definitions, their metaphyſical ſyſtem was a chaos of abſtract notions and obſcure terms. They profeſſed, indeed, to follow the metaphyſics of Ariſtotle, but for want of underſtanding the ancient doctrine of phyſics and metaphyſics, or even the language of Ariſtotle, they frequently ſubſtituted the fictions of their own imaginations in the room of the true Ariſtotelian principles.

Of this the manner in which they handled the ſubject of *firſt matter* affords a clear example. The Stagyrite, in his metaphyſics, had called matter, that of which, conſidered in itſelf, neither quantity nor quality can be predicated, and in which being terminates. In this definition Ariſtotle had a reference to the ancient doctrine, that bodies are compoſed of corpuſcles; and, by mental abſtraction, ſeparated from theſe that which is the firſt formal cauſe of their exiſtence, and called it *firſt matter*. But the Scholaſtics, being ignorant of the ancient notion of body, and confounding the purely metaphyſical conception of matter with an extended ſubject endued with form and quantity, fell into trifling diſputes, and deviſed innumerable ſubtleties, by which the original obſcurity of the doctrine of Ariſtotle concerning the firſt matter was greatly increaſed. The firſt matter, according to the followers of Thomas Aquinas, was ſimple power without actual energy. Others, who perceived that this was a mere phantom of the imagination, defended the real exiſtence of matter, though they confeſſed themſelves ignorant of its nature. Whilſt others, concluding that the attributes aſcribed to matter could belong only to God, contended that God was the firſt matter. Nor did theſe ſubtile reaſoners trifle leſs on the ſubject of divine and ſpiritual natures. Bonaventure, in his "Compendium of Theology," treats of angels, their ſubſtance, orders, offices, language, and the like, as if he himſelf had been an inhabitant of the angelic world.

In natural philoſophy, inſtead of attending to the real properties of bodies, and inveſtigating the laws of nature by experiment and obſervation, they reaſoned with ſubtlety upon vague and obſcure principles, and always confounded phyſics with metaphyſics. Many reaſonings of this kind may be met with in thoſe parts of the writings of Thomas Aquinas, where he treats of the principles of nature, of the nature of matter, of the occult operations of nature, and the like. Among other profound obſervations, he derives the occult operations of nature from the forms of things, which exiſt in their reſpective bodies, and ſuppoſes the formal principles of ſuch bodies to be celeſtial bodies, which by their acceſſion or receſſion cauſe the production or corruption of the inferior body. Whence he concludes, that there is in theſe occult forms a capacity of being reſtored to higher principles, namely, celeſtial bodies, or to powers ſtill higher than theſe, that is, to ſeparate intellectual ſubſtances, which in their reſpective operations leave traces of themſelves. If the reader will apply the myſterious operations of theſe occult forms to the explanation of magnetic attractions, he will ſoon perceive how much the ſcience of phyſics is indebted to this angelic doctor. Bonaventure, and others, laboured in this field with equal ſucceſs. Roger Bacon, indeed, Albert, and a few more, in their enquiries into nature, left the clouds of metaphyſics, and deſcended into the humble vale of experience; but the world was not prepared to receive the information they were able to communicate, and imputed their operations to the power of magic. Boniface, the patron of ignorance and barbariſm, ſummoned Polydore Virgil, biſhop of Saliſbury, to the court of inquiſition, for maintaining the exiſtence of antipodes; for this profound theologian wiſely concluded, that ſuch a race of men would be a new world for which Chriſt had not died.

Upon the ſubject of ethics, we find among the Scholaſtics ſurpriſing proofs of ignorance and weakneſs. Till the 12th century, the only books of morals which obtained any authority were that wretched compilation, the "Moralia" of pope Gregory, and ſome other injudicious collection of ſentences from the ſcriptures and the writings of the fathers. When the ethics of Ariſtotle were introduced, and moral doctrine began to be conſidered as a part of philoſophy, we indeed find the Scholaſtics treating concerning virtues and vices, but always in the dialectic method; ſubſtituting uſeleſs queſtions concerning caſes which are never likely to happen in real life, in the room of practical inquiries.

"Quid ſit pulchrum, quid turpe, quid utile, quid non."

"What fair or baſe, what good or ill to man,
And what his wiſeſt, ſafeſt, happieſt plan."

If they diſcourſed upon theſe topics, they either implicitly followed the definition and arrangement of Ariſtole, or injudiciouſly combined with his moral doctrine the precepts of piety and ſanctity which the church had preſcribed. The correction and improvement of ethics was indeed attempted by John Scotus Erigena, and other followers of the ſuppoſed Dionyſius; but theſe enthuſiaſts having abandoned the humble path of common ſenſe to ſoar into the regions of myſticiſm, the remedy proved ſcarcely leſs miſchievous than the diſeaſe to which it was applied; and the ſimple doctrine of pure morality, taught by Chriſt and his apoſtles, which had hitherto been debaſed by ſuperſtition, was now loſt in the extravagancies of enthuſiaſm.

The ſpirit of diſputation which ſo eminently diſtinguiſhed the Scholaſtics, gave birth to many ſects, which contended againſt each other with bitter animoſity. The diſciples of Albert, called Albertiſts, who mixed the doctrines of religion with the tenets of the Ariſtotelian philoſophy, were vehemently oppoſed by Peter Lombard and his followers. The diſſentions between Thomas Aquinas and John Duns Scotus laid the foundation of the ſects of the Thomiſts and Scotiſts, who diſputed with great warmth on the doctrines of grace and free will, and other theological topics. From the ſchool of Duns Scotus aroſe Occam, the inventor of new ſubtleties, who became the father of the ſect of Occamiſts. But, among all the ſects of the Scholaſtics, the moſt memorable, on account of the extent, the violence, and the duration of their conteſts, are thoſe of the Nominaliſts and Realiſts.

Although the ſcholaſtic philoſophy was aſſiduouſly oppoſed, and its futility and pernicious tendency laid open, from the time of the revival of letters to the completion of the Reformation in the 16th century, yet this philoſophy, ſomewhat corrected by the introduction of Ariſtotle's logic and metaphyſics, was ſtill ſtudied and profeſſed in the colleges and monaſteries belonging to the church of Rome.

The bigotted attachment to ancient ſyſtems, which has prevailed in the Romiſh church with reſpect to religion, has always extended itſelf to philoſophy, and has given a permanent eſtabliſhment to the ſcholaſtic method of philoſophiſing, which all the wiſdom of modern times has not been able to overturn. It is, however, a happy omen of the entire exorciſm of the dæmons which have ſo long haunted the ſchools, that in many univerſities a better and more extenſive plan of inſtruction has been adopted, which has in a great meaſure precluded the idle dreams of dialectic ſubtlety. In an age in which a rational plan of philoſophiſing was generally followed; in which vague conceptions, unmeaning terms, and uncertain principles, were commonly exploded; in which the accurate method of mathematical reaſoning was applied with ſucceſs to other ſciences; in which experimental philoſophy was every where ſtudied and encouraged; and in which the correct uſe of language was an object of attention; it could not but happen that the empty ſhadow of abſtraction would be thrown out of the philoſophical world, to make room for more ſubſtantial and profitable ſtudies. Brucker's Phil. by Enfield, vol. ii.

SCHOLASTIC *Theology*, is that part or ſpecies of divinity which clears and diſcuſſes queſtions by reaſon and arguments. In which ſenſe it ſtands, in ſome meaſure, oppoſed to *poſitive* divinity; which is founded on the authority of fathers, councils, &c.

The ſcholaſtic and the myſtic theology owed their riſe and increaſe to the mixture of the dogmas of Pagan philoſophy with the doctrines of Chriſtianity. Although theſe two ſyſtems of theology differ in their leading characters; the former attempting to derive the confirmation of divine truth from philoſophy; the latter calling in its aid to ſupport the ſpirit of fanaticiſm; the true origin of both will be found to have been, an injudicious application of the Peripatetic and Platonic philoſophy to the illuſtration of theology. The ſeeds of the ſcholaſtic theology were ſown, when the dialectics of Ariſtotle were firſt introduced into the controverſies of the church; and the myſtical theology took its riſe, when the enthuſiaſtic notion of union with God, and other fanatical principles, taught by the Alexandrian philoſophers, were embraced among Chriſtians; and was eſtabliſhed, when the ſpurious writings of the pretended Dionyſius obtained credit and authority in the Chriſtian world. From the Peripatetic ſchool, Chriſtians learned to perplex the truth by ſubtle diſputations; and from that of the later Platoniſts, they received a powerful bias towards enthuſiaſm. Hence, with the profeſſed deſign of exploring truth, they enveloped it in a cloud of obſcure notions and ſubtle diſtinctions; and, under the pretence of producing ſublime piety, enfeebled and enſlaved the human mind by the extravagancies of myſticiſm: in both ways, oppoſing the true ſpirit, and obſtructing the natural operation of Chriſtianity. See the next article.

SCHOLASTICS, derived their name from thoſe profeſſors, who, in the public ſchools of cathedrals and monaſteries, taught philoſophy and the liberal arts. In the colleges of canons, which, in the times of Charlemagne and Louis the Pious, were erected near the epiſcopal churches or cathedrals, and in the abbacies of monaſteries, it was cuſtomary to have preceptors or ſcholaſtic doctors, to whom the charge of the education of youth was committed: and great care was at firſt taken, by thoſe who founded or ſupported theſe ſchools, that able and learned men ſhould be appointed to perform the offices of inſtruction. The name, thus introduced, remained, when the care of the ſchools was no longer in the hands of ſcholaſtic doctors. For when emperors, princes, and biſhops, had, from a deſire of baniſhing ignorance and barbariſm, enriched this uſeful office with ample endowments, wealth produced indolence; the labour of teaching was transferred to thoſe who would undertake it for the ſmalleſt ſalary; and the ſcholaſtic doctors themſelves (for, that they might enjoy the profits of this eſtabliſhment, they ſtill retained the name) paid little attention to letters, and only vied with each other in luxury and debauchery. A lively picture of the infamous lives of theſe Scholaſtics is drawn in the *Speculum Humanæ Vitæ*, "Mirror of Human Life," written by Roderic, biſhop of Zamora, in Spain, in which he complains, "that they were no longer learned themſelves, nor able to teach others; that they never viſited the ſchools; that they united, with the moſt contemptible ignorance, the moſt ſhameful depravity of manners; and that, through fear leſt their places ſhould be filled up by men more learned than themſelves, they gave no encouragement to erudition." In the ſchools of ſeveral monaſteries, this noble inſtitution was leſs abuſed; and ſome of the Scholaſtics were employed in inſtructing, not only thoſe young men who were devoted to a monaſtic life, but the ſons of noblemen, and others of the laity. And this was the chief means of preſerving alive the embers of ſcience and learning, in the dark period between the eighth and the twefth centuries.

From the ſchools of monaſteries and cathedrals at length ſprung public ſchools and academies, in which the liberal arts and ſacred learning were taught; and the method of philoſophiſing, which had prevailed in the monaſteries, and among the eccleſiaſtics, was transferred to the profeſſors of philoſophy and literature in theſe public ſchools. The profeſſors of philoſophy, or the Scholaſtics, perceiving that eminence in the dialectic art was the ſure road to popularity and preferment, devoted their principal attention to this ſtudy; and the ſchools, now confided to men who placed their chief merit in the ſkill with which they handled the weapons of intellectual warfare, produced nothing but polemics. The ſpirit of diſputation, transferred from the old ſeminaries of learning to every new eſtabliſhment, was diſſeminated through Europe; and education was, every where, nothing elſe but a courſe of inſtruction in dialectics and in metaphyſics. The general introduction of the writings of Ariſtotle into the ſchools eſtabliſhed a taſte for this ſtudy. The whole body of the clergy employed themſelves in ſolving abſtruſe and ſubtle queſtions, which were always merely ſpeculative, and often merely verbal. In this manner the Ariſtotelian dialectics became by degrees intimately connected with theology, and on this account obtained the zealous patronage of thoſe who preſided in the church; ſo that almoſt the whole Chriſtian church became Scholaſtics.

Under all this appearance of philoſophiſing, it muſt, however, be remarked, that nothing of the true ſpirit of philoſophy was to be found. The art of reaſoning was employed, not in the free inveſtigation of truth, but merely in ſupporting the doctrines of the Romiſh church, the canons of which denounced a perpetual anathema and excommunication upon all who ſhould attempt to corrupt the faith, and bound the clergy, in the form of a ſolemn oath, to defend the papal ſee, and the inſtitutions of the holy fathers, againſt all oppoſition. Hence philoſophy became nothing more than an inſtrument in the hands of the pontiff, to confirm and extend his ſpiritual dominion. Some oppoſition, indeed, the ſpeculative philoſophy of the Scholaſtics met with, from that myſtical ſyſtem, derived from the enthuſiaſm of the Alexandrian ſchool, which Joannes Scotus Erigena, from the ſpurious books of Dionyſius, introduced into the Chriſtian church; a ſyſtem which profeſſed to raiſe the mind from the barren purſuit of ſcholaſtic controverſy, to the pure and ſublime contemplation of God and divine things. But the only conſequence of this oppoſition was, at firſt, to excite mutual jealouſies and animoſity between the Myſtics and Scholaſtics, and afterwards to produce a coalition between them highly injurious to the church. See SCHOLASTIC *Philoſophy*.

The Scholaſtics are commonly divided into three ages: the firſt, from Lanfranc, or Abelard, and his diſciple Peter Lombard, to the middle of the 13th century, when Albert flouriſhed: the ſecond, from that time to the year 1330; and the third, from the laſt period to the Reformation. After Lanfranc, Anſelm, and Roſceline, aroſe in the firſt age of the Scholaſtics William de Champeaux, who was biſhop of Catalaun in 1113, and afterwards archbiſhopof Paris, where he taught dialectics with great applauſe, and maintained the doctrine of the Realiſts, who held that all individual things partake of the one eſſence of their ſpecies, and are only modified by accident: he obtained the appellation of the "venerable doctor." From his ſchool aroſe Peter Abelard. (See ABELARD.) Abelard was followed by many of his diſciples, and particularly by Peter Lombard. (See LOMBARD.) This age alſo produced Robert Pulleyn, who in the time of the civil wars of England withdrew into France, where he enjoyed the friendſhip of Bernard. On his return to England, he revived the ſtudy of the ſcriptures, and for five years taught theology in Oxford. In his "Sententiarum Libri," he expreſſes a preference of the ſimple authority of reaſon and ſcripture to the teſtimony of the fathers, or the ſubtlety of metaphyſics. He was admitted into the college of cardinals in the year 1144. About the ſame time flouriſhed Gilbert Porretan, biſhop of Poictiers, who died in 1154: Peter Comeſtor, dean of Troyes, who wrote a breviary of the hiſtorical books of the Old and New Teſtament, for the uſe of the ſchools, under the title of "Hiſtoria Scholaſtica," a work which father Simon declares to be of great uſe in biblical learning: and John of Saliſbury, ſurnamed the "Little," who was reckoned one of the moſt learned and valuable men of this age. He died about the year 1182. His moſt valuable works are his "Metalogicum," or apology for grammar, philology, and the Ariſtotelian logic, his "Policraticum," and his Letters. Other Scholaſtics of ſome repute at this period were Alexander Hales, denominated the "irrefragable doctor:" Stephen Langton, conſecrated archbiſhop of Canterbury in 1207, to whom is aſcribed the firſt diviſion of the books of the Old and New Teſtament into chapters: Vincent, a monk of Beauvais, who, about the year 1244, wrote a famous ſummary of knowledge, under the title of "Speculum doctrinale, hiſtoriale, naturale, et morale;" Alfred; and Robert Greathead, biſhop of Lincoln, ranked by Roger Bacon, for his wiſdom and learning, with Ariſtotle and Solomon. (See GROSSETTESTE.) The ſecond age of the ſcholaſtic philoſophy, in which Ariſtotelian metaphyſics, obſcured by paſſing through the Arabian channel, were applied with wonderful ſubtlety to the elucidation of Chriſtian doctrine, began with Albert, and ended with Durand. (See Albert the *Great*.) Albert was rivalled and even exceeded by his pupil Thomas Aquinas. (See Aquinas.) Another Scholaſtic of great celebrity in this age was Bonaventure of Tuſcany. (See St. Bonaventura.) Of a very different and much higher character than Bonaventure, or any other mere Scholaſtic, was that great man Roger Bacon. (See Bacon.) Among the philoſophers of this age we may mention Ægidius de Columna, a Roman monk of the Auguſtine order, who taught philoſophy and theology in the univerſity of Paris with ſo much reputation, that he was honoured with the appellation of "the moſt profound doctor." In the ſubtleties of ſcholaſtic philoſophy no one acquired a more diſtinguiſhed name than John Duns Scotus. (See Duns.) To the celebrated names above recited we may add thoſe of Simon of Tournay, Peter d'Apono, Robert de Sorbonne, Francis de Mayro, Arnaud de Ville Neuf, and Peter the Dane. In the third age of the ſcholaſtic period, which commences with Durand, at the beginning of the fourteenth century, and continues to the end of the fifteenth, the ſcholaſtic philoſophy advanced in the number of its teachers and learners, in the affectation of ſubtleties, and in the multiplicity of intricate and trifling diſputes, but by no means in the celebrity of its profeſſors. Durand (ſee his article) was ſucceeded by Occam (ſee Occam), Richard of Swinſhead, Walter Burley, preceptor to Edward III. who wrote many treatiſes, and obtained the appellation of the "perſpicuous doctor;" and John Herman Weſſel, born at Groningen in 1409, and educated in the monaſtery at Zevole. The chief claim of Weſſel to diſtinction in the hiſtory of philoſophy, ariſes from the penetration which, in the midſt of the ſcholaſtic phrenzy of his age, enabled him to diſcover the futility of the controverſies which agitated the ſchools of the Thomiſts, Scotiſts, and Occamiſts. To a young man who conſulted him concerning the beſt method of proſecuting his ſtudies, he ſaid, "you, young man, will live to ſee the day, when the doctrines of Thomas Aquinas, Bonaventure, and other modern diſputants of the ſame ſtamp, will be exploded by all true Chriſtian divines, and when the irrefragable doctors themſelves will be little regarded." A prediction which diſcovers ſo much good ſenſe and liberality, that Weſſel ought to be immortalized under the appellation of the "wiſe doctor." He died at Groningen in 1489, about the era of the revival of letters. Brucker's Hiſt. Phil. by Enfield, vol. ii.

SCHOLD, or Solth, in *Geography*, a town of Hungary; 4 miles E. of Foldvar.

SCHOLIAST, σχολιαϛης, *commentator*, a grammarian who writes *ſcholia*, that is, notes, gloſſes, &c. upon ancient authors who have written in the learned languages.

SCHOLIUM, σχολιον, a note, annotation, or remark, occaſionally made on ſome paſſage, propoſition, or the like.

The term is much uſed in geometry, and other parts of mathematics; where, after demonſtrating a propoſition, it is frequent to point out how it might be done ſome other way; or to give ſome advice or precaution, in order to prevent miſtakes; or add ſome particular uſe or application thereof.

Wolfius has given us abundance of curious and uſeful arts and methods, and a good part of the modern philoſophy, the deſcription of mathematical inſtruments, &c. all by way of ſcholia to the reſpective propoſitions in his "Elementa Matheſeos."

SCHOLLERA, in *Botany*, ſo named by Schreber, in honour of Frederick Adam Scholler, a principal perſon, as it appears, in the Moravian academy at Barby, ſee that article; and author of the *Flora Barbienſis*, an octavo volume, publiſhed at Leipſic in 1775. This work is compiled from the publications of Linnæus, and diſpoſed according to his ſyſtem, with various remarks, but no citation of authors. The commendable aim of the writer, for fourteen years previous to this publication, had been, as he declares in his preface, to give his pupils a taſte for Natural Hiſtory, eſpecially Botany; which he judged likely to be particularly ſerviceable in their viſits to remote countries, without interfering with the higher objects of their miſſion. The advantages of this project have been experienced, for ſome years paſt, in the botanical communications of the miſſionaries at Tranquebar, to the learned in various parts of Europe.—Schreb. Gen. 785.—Claſs and order, *Triandria Monogynia*. Nat. Ord. *Tripetaloideæ*, Linn.? *Junci*, Juſſ.? or rather perhaps *Enſatæ*, Linn.? *Irides*, Juſſ.?

Gen. Ch. *Cal.* Spatha of one leaf, two-edged, pointed, ſplit lengthwiſe, ſhorter than the ſtalk of the flower. *Cor.* Petals ſix, lanceolate, ſpreading, bluntiſh, nearly equal. *Stam.* Filaments three, broadiſh, acute, erect, ſhorter than the corolla, longer than the piſtil; anthers linear, erect, recurved at the ſummit. *Piſt.* Germen ſuperior, oblong, tapering into a ſhort ſtyle; ſtigma three-cleft, bearded. *Peric.* and *ſeeds* unknown.

Unfortunately this is all the account extant of *Schollera*; Schreber, who deſcribed it from a dried ſpecimen, having not left a word concerning its native country, diſcoverer, habit, or qualities. Neither do we know whether he had ſeen one ſpecies or more. All ſuch information he reſerved for an intended *Species Plantarum*, which has never ſeen the light. Some good botaniſt, who has acceſs to his herbarium, would do well to aſcertain, and inform the world, what the *Schollera* of Schreber is; that ſo meritorious a name might be eſtabliſhed and generally adopted.

SCHOLLIA, ſo named by Profeſſor von Jacquin, jun., in compliment to Mr. George Scholl, curator of the imperial garden of Belvedere. See Jacq. Eclog. 5. t. 2. This genus however was previouſly called *Hoya*, by Mr. R. Brown in his paper on *Aſclepiadeæ*, publiſhed in Tranſactions of the Wernerian Society, v. 1, as well as in Ait. Hort. Kew. v. 2. 84. The ſpecies on which it is founded is *Aſclepias carnoſa* of Linnæus; Sm. Exot. Bot. v. 2. 21. t. 70; but there are ſeveral more of the ſame genus. Mr. Brown's eſſential character of *Hoya* is thus given.

"Aſclepiadea. Maſſes of pollen ſmooth, ten, erect, converging. Anthers tipped with a membrane. Crown of the ſtamens of five depreſſed leaflets, whoſe inner angle is extended into a tooth, lying over the anther. Corolla wheel-ſhaped."

The perſon here commemorated is Mr. Thomas Hoy, F. L. S., an excellent botaniſt and cultivator, who has for a long courſe of years been curator of the valuable collection of plants in the duke of Northumberland's garden, at Sion houſe. See Piercea.

SCHOLOS, or Scolos, in *Ancient Geography*, a ſmall town of Greece, in Bœotia, placed by D'Anville on the Aſopus, S. of Thebes.

SCHOMBERG, Frederic Amand, *duke of*, in *Biography*, a diſtinguiſhed officer, the ſon of count Schomberg, by an Engliſh lady, the daughter of lord Dudley, was born in 1608. He was initiated into the military life under Frederic Henry, prince of Orange, and afterwards ſerved under his ſon, William II. of Orange, who highly eſteemed him. He then repaired to the court of France, where his reputation was ſo well known, that he obtained the government

ment of Gravellines, of Furnes, and the ſurrounding countries. He was reckoned in no way inferior to any general in that kingdom, excepting mareſchal Turenne and the prince of Condé. The French court, thinking it neceſſary to diminiſh the power of Spain, ſent Schomberg to the aſſiſtance of the Portugueſe, who were engaged in a war with that country reſpecting the ſucceſſion to their throne. Schomberg's military talents gave a turn to the war in favour of his allies. The court of Spain was obliged to ſolicit peace in 1668, and to acknowledge the houſe of Braganza as the juſt heirs to the throne of Portugal. For his great ſervices on this occaſion he was created count Mentola in Portugal, and a penſion of 5000*l.* was granted to him, with the reverſion to his heirs. In 1673 he came to England to command the army, but the purity of his intentions being ſuſpected, he found it neceſſary to return to France, which he ſoon left for the Netherlands. In June 1676 he forced the prince of Orange to raiſe the ſiege of Maeſtricht, after which he was almoſt immediately raiſed to the rank of mareſchal of France. According to the writers in "Dictionnaire Hiſtorique," he had been raiſed to that rank while he was ſerving in Portugal. Upon the revocation of the edict of Nantes, Schomberg, who was a Proteſtant, requeſted leave to retire to his own country. This petition was refuſed, but he was allowed to go into Portugal, where he imagned he ſhould be kindly received on account of his paſt ſervices. But the bigotry of the Portugueſe, though it did not prevent them from accepting aſſiſtance from a heretic, when their kingdom was threatened with ſubverſion, could not permit them to give him ſhelter when he came for protection. The deteſtable inquiſition interfered, and the king was obliged to ſend him away. He then went to Holland, and ſoon after accepted from the elector of Brandenburg, and was inveſted with, the government of Ducal Pruſſia, and appointed commander-in-chief of the Elector's forces. He followed the prince of Orange to England, when he came to take poſſeſſion of the throne of theſe realms; and when that prince was firmly eſtabliſhed in the government, he appointed Schomberg to be commander-in-chief of the forces, and maſter-general of the ordnance. In April 1689 he was made knight of the Garter, and naturalized by act of parliament; and in the following ſpring he was created a baron, earl, marquis, and duke of the kingdom of England, by the name and title of baron Teys, earl of Brentford, marquis of Harwich, and duke of Schomberg. The houſe of commons voted to him 100,000*l.* as a reward for his ſervices. Of this he only received a very ſmall part, but after his death a penſion of 5000*l.* was given to his ſon.

In Auguſt 1689 he was ſent to Ireland, to reduce that kingdom to obedience. When he arrived, he found himſelf at the head of an army of 12,000 foot, and 2000 horſe, while king James commanded an army three times more numerous. Schomberg thought it dangerous to engage ſo ſuperior a force, and remained on the defenſive for ſix weeks, during which, owing to the wetneſs of the ſeaſon, he loſt a conſiderable part of his army. Schomberg was blamed for not bringing the king to action; but others, and thoſe excellent judges, admired his conduct as a real diſplay of great military talents. Had he riſked an engagement, and been defeated, Ireland muſt have been loſt. At the famous battle of the Boyne, which decided the fate of James, Schomberg paſſed the river at the head of his cavalry, defeated eight ſquadrons of the enemy, and broke the Iriſh infantry. When the French Proteſtants loſt their commander, Schomberg went to rally and lead them on to the charge. While thus engaged, a party of king James's guard attacked him with great fury, and gave him two wounds in the head. Theſe would not of themſelves have been dangerous, but the French Proteſtants thinking their general was killed, fired upon the guards, and ſhot the duke of Schomberg dead on the ſpot. He was buried in St. Patrick's cathedral. He is deſcribed by biſhop Burnet as "a calm man, of great application; who thought much better than he ſpoke; of true judgment, of exact probity, and of a humble and obliging temper."

SCHOMBERG, in *Geography*, a town of Pruſſia, in the province of Oberland; 6 miles N.N.W. of Eylau.—Alſo, a town of Pruſſia, in Ermeland; 22 miles S.W. of Heilſberg.

SCHÖMBERG, or *Sſumberg*, a town of Moravia, in the circle of Olmutz; ſurrounded with walls, and defended by a citadel; 24 miles N. of Olmutz. N. lat. 49° 52′. E. long. 16° 49′.

SCHOMBERG, or *Schomſberg*, a town of Sileſia, in the principality of Schweidnitz; 20 miles S.W. of Schweidnitz.

SCHONAICH, a town of Germany, in the lordſhip of Schwarzenberg; 3 miles N.W. of Schainfeld.—Alſo, a town of the duchy of Wurzburg; 6 miles S.S.E. of Geroltzhofen.

SCHONAU, a town of Baden, in the Briſgau, on the Wiſen; 20 miles N.E. of Bâle.—Alſo, a town of the duchy of Baden, where the elector Frederic IV. fixed a colony of Flemings and French Proteſtants; 5 miles N.E. of Heidelberg.—Alſo, a town of Sileſia, in the principality of Jauer, on the Katzbach, founded in 1296, and ſurrounded by mountains; 12 miles W. of Jauer. N. lat. 50° 57′. E. long. 15° 55′.—Alſo, a town of Germany, in the county of Henneberg; 6 miles E.N.E. of Smalkalden.—Alſo, a town of Luſatia, in the circle of Gorlitz; 5 miles W. of Zittau.

SCHONAW, a town of Pruſſia, in the palatinate of Culm; 27 miles N.E. of Culm.—Alſo, a town of Pomerelia; 6 miles S.E. of Dantzick.—Alſo, a town of Pomerelia; 3 miles S.W. of Marienburg.

SCHONBACH, a town of Bohemia, in the circle of Boleſlaw; 4 miles S. of Krottau.

SCHONBERG, a town of Semigallia; 35 miles E. of Mittau.—Alſo, a town of Upper Luſatia; 6 miles S.E. of Gorlitz. N. lat. 51° 4′. E. long. 15° 9′.—Alſo, a mountain of the Tyroleſe, near Brixen.—Alſo, a town of Germany, in the principality of Ratzeburg; 11 miles N.N.E. of Ratzeburg.—Alſo, a town of Bavaria; 4 miles W. of Gravenau.—Alſo, a town of Pruſſia, in Oberland; 40 miles N.E. of Culm.—Alſo, a town of the duchy of Holſtein; 9 miles N.W. of Lutkenburg.—Alſo, a town of the duchy of Carniola; 7 miles W.N.W. of Rudolfswerth.—Alſo, a town of Saxony, in the Vogtland, on the Egra, where are medicinal ſprings; 16 miles S.S.E. of Oelſnitz.

SCHONBIHEL, a town of the duchy of Stiria; 4 miles W. of Cilley.

SCHONBORN, a town of Bohemia, in the circle of Leitmeritz; 13 miles N. of Leitmeritz.

SCHONBRUCK, a town of Pruſſia, in the province of Natangen; 27 miles S.S.E. of Königſberg.—Alſo, a town of Pruſſia, in the palatinate of Culm; 23 miles N.E. of Culm.—Alſo, a town of Pruſſia, in the province of Ermeland; 9 miles W.S.W. of Allenſtein.

SCHONBRUN, a town of Bavaria, in the biſhopric of Bamberg; 3 miles S.W. of Lichtenfels.—Alſo, a town of Saxony, in the Vogtland; 2 miles W. of Oelſnitz.—Alſo, a town of Bohemia, in the circle of Chrudim; 4 miles S.E. of Politzka.

SCHONBRUNN, a town of Auſtria, on the Danube; 3 miles W. of Vienna.

SCHONBURG, a county ſurrounded by Saxony: the counts are divided into two principal branches, which are Schonburg-Waldenburg and Schonburg-Penigk.

SCHONDEMERAW, a town of Pruſſia, in Oberland; 4 miles N. of Ortelſburg.

SCHONEBECK, a town of the duchy of Magdeburg, on the Elbe, having ſalt-works, and a toll on the Elbe; 10 miles S.S.E. of Magdeburg.

SCHONECK, a town of Saxony, in the Vogtland; 7 miles E. of Oelſnitz.—Alſo, a town of Pruſſian Pomerelia; 20 miles S. of Dantzig.

SCHONECKEN, a town of France, in the department of the Sarre; 2 miles N. of Treves.

SCHONEFELD, a town of the Ucker Mark of Brandenburg; 8 miles E. of Prenzlow.

SCHONEMOR, a town of Germany, in the county of Delmenhorſt; 4 miles N.N.W. of Delmenhorſt.

SCHONEN, SCONEN, or *Skania*, a province of Sweden, bounded on the N. by Halland and Smaland, on the E. by Blekingen and the Baltic, on the S. by the Baltic, and on the W. by the Sound, which ſeparates it from Denmark; about 65 miles from N. to S., and 48 from E. to W.; formerly governed by its own kings and laws. This province is the moſt level, fertile, and agreeable diſtrict of Sweden; producing plenty of rye, barley, oats, peaſe, buck-wheat, cummin-ſeed, and honey; and affording pit-coal, chalk, tiles, and pot-aſhes. It furniſhes alſo alum, ſulphur, and amber. It carries on a conſiderable trade in oak-timber, mill-ſtones, cordage, fiſh, horſes, ſheep, and horned cattle. The animals are larger than thoſe of the northern parts of Sweden, but leſs vigorous and hardy, in which reſpects they improve by being removed northwards. Near the Sound and Baltic Schonen is deſtitute of wood, with which the part contiguous to Blekingen, Smaland, and Halland, abounds. In the former part the fuel is turf and ſtraw. With regard to many advantages, this province may be conſidered as the ſtore-houſe and granary of Sweden. It is diſtinguiſhed by fine ſeats and noblemen's eſtates, and by well-built towns, above all the other provinces of Sweden. The number of inhabitants is eſtimated at above 600,000 ſouls. Its rivers and lakes, which are numerous, are well ſtored with fiſh. The principal towns are Malmo, Lund, Landſcron, Helſingborg, and Chriſtianſtadt.

SCHONER, JOHN, in *Biography*, a German mathematician, was born at Carlſtadt, in Franconia, in 1477. He ſtudied at Nuremberg and Erfurt, where he applied himſelf to philoſophy, and other branches of general ſcience. He was ſettled ſome time as a clergyman at Bamberg, but, on the recommendation of the celebrated Melanchthon, he was, in 1528, made profeſſor of the mathematics in the gymnaſium of Nuremberg, where he publiſhed his aſtronomical tables, called, on account of their clearneſs, "Reſolutæ," dedicated to the magiſtrates of that city, in the year 1536. Schoner, like many of his contemporaries, was much addicted to judicial aſtrology. He was, however, of conſiderable benefit to ſcience by his labours. He died at Nuremberg, in the year 1547. After his death, his ſon publiſhed his works in 1551, under the title "Opera Mathematica Joannis Schoneri Caroloſtadii, in unum Volumen congeſta et publicæ Utilitati Studioſorum omnium ac celebri Famæ Norici Nominis dicata. Denuo ab authoris filio correcta et locupletata." The ſon, who was editor of this work, publiſhed a work on dialling, which has been ſometimes, though erroneouſly, aſcribed to the father. It is entitled "Gnomonice Andreæ Schoneri."

SCHONEWALT, in *Geography*, a town of the duchy of Holſtein; 8 miles E.N.E. of Eutyn.

SCHONEWERDA, a town of Brandenburg, in the Middle Mark; 16 miles S. of Potzdam.

SCHONEWERT, a town of Switzerland, in the canton of Soleure; 3 miles E. of Olten.

SCHONFELD, a town of Bohemia, in the circle of Saatz; 18 miles E. of Egra. N. lat. 50° 5′. E. long. 12° 48′.—Alſo, a town of Germany, in the biſhopric of Munſter; 8 miles N. of Munſter.

SCHONFELS, a town of Saxony, in the circle of Erzgebirg; 6 miles S.W. of Zwickau.

SCHONFELT, a town of the duchy of Holſtein; 10 miles W. of Pinnenberg.

SCHONFLIES, or SCHOWENFLIET, a town of the New Mark of Brandenburg; 22 miles N. of Cuſtrin.

SCHONFORST, a town of France, in the department of the Roer; 2 miles S. of Aix-la-Chapelle.

SCHONFURT, a town of Pruſſia, in the province of Oberland; 3 miles E.N.E. of Eylaw.

SCHONGAU, a town of Bavaria, ſituated on a declivity, having at its foot the river Lech, and containing about 600 houſes. Its great ſquare, which is handſome, has three fountains of marble, that is yielded by the country; and it has eight churches, one of which is diſtinguiſhed particularly by the dome-form of its ſteeple, and the covering and gilding of its high altar; 8 miles S. of Weilhaim. N. lat. 48° 45′. E. long. 10° 53′.

SCHONGRABEN, a town of Auſtria; 3 miles N. of Sonneberg.

SCHONHAUSEN, a town of Brandenburg, in the Old Mark; 6 miles N.E. of Stendal.—Alſo, a town of Brandenburg, in the Middle Mark; 6 miles N. of Berlin.

SCHONHEYDA, a town of Saxony, in the circle of Erzgebirg; 8 miles W.S.W. of Schwarzenberg.

SCHONHEYDE, a town of Sileſia, in the principality of Grotkau; 7 miles S.S.W. of Grotkau.

SCHONITZ, a town of Germany, in the county of Sayn; 2 miles N.W. of Hachenburg.

SCHONKERKE, a town of the duchy of Holſtein; 12 miles W. of Lutkenborg.

SCHONLINDEN, a town of Pruſſia, in the province of Natangen; 22 miles S.S.W. of Brandenburg.

SCHONNA, a town of Pruſſia, in Oberland; 8 miles S.S.E. of Holland.

SCHONNING, or, as it is more generally ſpelt, SCHONING, GERRARD, in *Biography*, a learned Norwegian, was born at Skatnæs, in Nordland, in 1722. He received the early part of his education at the ſchool of Drontheim; and after having completed his ſtudies at other ſeminaries, where he was diſtinguiſhed by his great talents, he was, in 1751, elected a member of the Royal Society for improving the Daniſh language and hiſtory. In 1758 he became a member of the Academy of Sciences at Copenhagen, and was, a few years after, chiefly inſtrumental in forming the Drontheim ſociety, which obtained the title of the Royal Norwegian Society. In 1764 he was appointed profeſſor of eloquence and hiſtory in the academy of Soroe; in 1772 he was choſen a member of the hiſtorical inſtitute of Gottingen; and in 1774 appointed a counſellor of juſtice. In the years 1773, 1774, 1775, he went on a tour, at the king's expence, through various parts of Norway, to examine the different remains of antiquity, and collect information in reſpect to the phyſical and economical ſtate of the country. After this he became private keeper of the records to the king, and an active member of the ſociety formed for the purpoſe of publiſhing Icelandic works from the collection of Arnas Magnæus. He died in 1780, bequeathing his library, which contained a large number of books, to the Royal Norwegian Society. His works are very numerous, of which the titles are given in the General Biography, and among which the following may be mentioned as the more important: "An Eſſay towards the ancient Geography of the Northern Countries, particularly Norway;" "Obſervations on the old Northern Marriages and Weddings;" "De Anni Ratione apud veteres Septentrionales;" "Hiſtory of Norway from the Foundation of the Kingdom till the Time of Harold Haarfager;" "Travels through Norway," &c. Among the papers which this author cauſed to be inſerted in the Tranſactions of the Norwegian Society, and of the Academy of Sciences at Copenhagen, were the following: "On the Northern Lights;" "On the Knowledge which the ancient Greeks and Romans had of the northern Countries, and particularly of Scandinavia;" "On the Expedition of Darius Hyſtaſpis into Scythia," and many others. Gen. Biog.

SCHONPUHL, in *Geography*, a town of Auſtria; 9 miles W. of St. Polten.

SCHONSEE, a town of Bavaria, in the county of Sternſtein; 33 miles N.N.E. of Ratiſbon.

SCHONSEE, or *Kowalewo*, a town of Pruſſia, in the diſtrict of Culm; 20 miles S.E. of Culm.

SCHONSEE, a town of the palatinate of Culm; 16 miles N.E. of Thorn.

SCHONSTEIN, a town of the duchy of Stiria; 6 miles S.S.W. of Windiſch Gratz.

SCHONTHAL, a town of Bohemia, in the circle of Pilſen; 4 miles N.W. of Teuſing.

SCHONVIESSE, a town of Pruſſia, in Pomerelia; 4 miles E. of Marienburg.

SCHONWALD, a town of Germany, in the principality of Culmbach; 5 miles E. of Kirch Lamitz.—Alſo, a town of Bohemia, in the circle of Boleſlaw; 10 miles N.E. of Krottau.—Alſo, a town of Bohemia, in the circle of Leitmeritz; 10 miles N.E. of Auſſig.

SCHONWALDE, a town of Saxony; 8 miles S.W. of Dahme.

SCHONWALDT, a town of Pruſſia, in the province of Natangen; 18 miles S.S.W. of Brandenburg.—Alſo, a town of Pruſſia, in Natangen; 28 miles S. of Königſberg.

SCHOOCKIUS, MARTIN, in *Biography*, a critic and miſcellaneous writer, was born at Utrecht in 1614. He was ſucceſſively profeſſor of languages, eloquence, hiſtory, &c. at Utrecht, Deventer, Groningen, and laſtly at Frankfort on the Oder, where he died in 1669. He was author of a great number of works in Latin, and many of them on very ſingular ſubjects. Among the more important were the following: "De Statu Reipublicæ Fæderati Belgii;" "De Imperio Maritimo;" "De Lingua Helleniſtica;" and "Exercitationes Variæ."

SCHOODIAK, in *Geography*. See SCOODIAK.

SCHOOL, SCHOLA, a public place, wherein the languages, humanities, or other arts and ſciences, are taught.

The word is formed from the Latin *ſchola*, which, according to Du-Cange, ſignifies diſcipline and correction. He adds, that it was anciently uſed, in the general, for all places where ſeveral perſons met together, either to ſtudy, to converſe, or do any other matter. Accordingly, there were *ſcholæ palatinæ*, being the ſeveral poſts wherein the emperor's guards were placed; *ſchola ſcutariorum*, *ſchola gentilium*, &c. At length the term paſſed alſo to civil magiſtrates; and, accordingly, in the code we meet with *ſchola chartulariorum*, *ſchola agentium*, &c.; and even to eccleſiaſtics, as *ſchola cantorum*, *ſchola ſacerdotum*, &c.

Thus we ſay a grammar-ſchool, a writing-ſchool, a ſchool of natural philoſophy, &c.

SCHOOLS. In the articles MORAL and PHYSICAL *Education*, references were made to a comparative view of the advantages and diſadvantages of a public and private education. On this ſubject we ſhall now endeavour to bring together ſome obſervations, which perhaps may be uſeful to parents in forming plans for the future conduct of their offspring, without, however, pretending to draw a general concluſion that ſhall apply in all, or even in a majority of caſes. Different circumſtances, different diſpoſitions, and different talents, muſt lead the judicious, even with reſpect to children of the ſame family, to a different courſe of conduct. The writer of the ſeveral articles on education in the New Cyclopædia, and who meant to have undertaken this alſo, wiſhes it to be diſtinctly announced that his avocations are too preſſing to allow him to perform what he ſtood engaged to perform, and that of courſe he is anſwerable for no ſentiment that will be found in the preſent article.

From the time of Quinctilian to the preſent day, it has remained a queſtion, Whether a private or a public education is more conducive to valuable improvement? Quinctilian, without heſitation, approved of public education, but then he had only a ſingle object in view, *viz.* that of forming a public orator, whereas the objects of modern education are numerous, and hence the queſtion becomes more intricate, and difficult of ſolution.

We ſhall in the firſt place ſtate briefly the arguments in favour of a private education, as they have been enumerated by authors who have written on the ſubject. It has been thought that ſecluſion is particularly favourable for acquiring uſeful knowledge and virtuous habits. Perſons who are attached to a private method of education obſerve, that though the young reap many advantages from mingling in ſocial life, yet in ſociety they are liable to be tainted with vices to which they would have been ſtrangers in ſolitary life. At whatever period the young begin to mix with the world, they find that they have not more ſtrength than what is ſufficient to reſiſt the temptations with which they may be aſſailed: but if they are thus liable to faulter in the courſe of virtue when more advanced in life, there ſeems wanting no other argument to ſhew the propriety of reſtricting children from thoſe dangerous ſcenes in which the infection is widely ſpread, and eaſily caught. It is alſo aſſumed, that whoever ſurveys the ſtate of morals in a public ſchool with careful and candid attention, even though it be under the management of the moſt virtuous and aſſiduous teachers, will find reaſon to acknowledge that the empire of vice is there, though in a ſmaller degree, eſtabliſhed as it is in the world at large. Hence it is inferred, that nothing can be more negligent or inhuman, than for parents to expoſe their children to thoſe temptations which a great ſchool preſents, at a time when they are ſtrongly diſpoſed to imitate any example ſet before them, and have not yet learned to diſtinguiſh between ſuch examples as are worthy of imitation, and thoſe which ought to be held in abhorrence. Even under a parent's ſuperintendance, by an almoſt unavoidable intercourſe with ſervants, with workmen and viſitors, their native innocence is likely to ſuffer conſiderably. Yet a parent's care will be more likely to preſerve the manners of his child uncorrupted under his own roof, than any aſſiduity and watchfulneſs that can poſſibly be given by teachers in a ſchool.

It will be admitted that the morals and diſpoſitions of a child ought to be the firſt objects of our concern in conducting his education: but to initiate him in the principles of uſeful knowledge is alſo an important object, and the probability is, that in a private education virtue will not only be better ſecured, but knowledge more readily acquired. When a very few, as from one or two to ſix or eight boys are committed to the care of a judicious preceptor, he can watch the moſt favourable opportunities for communicating inſtruction; he can awaken curioſity and command attention by the gentle arts of inſinuation, without endeavouring to inflame their breaſts with emulation, which too frequently leads to envy and inveterate hatred; and he will probably ſucceed in rendering learning pleaſing by other means leſs likely to produce unfavourable effects on the temper and diſpoſitions of his pupils. As the attention of the tutor is not divided among a number, he can pay more regard to the particular diſpoſitions and turn of mind of each of his pupils: he can encourage thoſe that are modeſt and ſlow, and repreſs the quickneſs and volatility of the others. He can, by a kind of Socratic method, aid the dull, without encouraging indolence, and thus call forth and improve their powers, and excite talents which did not appear to exiſt, by leading the young, at one time to view the ſcenes of nature, and the changes which ſhe ſucceſſively undergoes through the varying ſeaſons; at another to attend to ſome of the more entertaining experiments of natural philoſophy; and then again allure them to literary exertions of one kind or another; and he may occaſionally mix with them in their games, and thus, without the appearance, watch over them, their tempers and diſpoſitions, even in their moſt relaxed moments, and when they are likely to exhibit themſelves in their trueſt light. Theſe circumſtances are unqueſtionably favourable both to the happineſs and literary improvement of youth, and they are attainable only where the number of pupils is limited to about half a dozen. Moreover, in a private education, as children ſpend more of their time with people farther advanced in life, they ſooner acquire their manner of thinking, of expreſſing themſelves, and of behaving in their ordinary intercourſe with one another; hence thoſe boys who receive what may be called a family education, that is, who aſſociate with all the company that from time to time are introduced into the houſe, preciſely as branches of the family circle, will begin ſooner to think and act as men than thoſe who paſs their earlier days in a public ſeminary. And though a youth be educated entirely at home, there is no reaſon why he ſhould be more accuſtomed to domineer over, and take liberties with, his inferiors, or to indulge a capricious diſpoſition, than if he were educated with a large number of boys of his own age and rank. He may alſo, in a private education, exerciſe his limbs with nearly as much activity as in a public one. He cannot, indeed, engage in all the ſports for which a larger party of companions is neceſſary, yet there are other objects that may call forth his activity. In private life, alſo, he will have an opportunity of ſeeing the various operations of mechanics and others, which he will be diſpoſed to imitate, and which will produce the moſt favourable effects, both with reſpect to the body and mind.

To theſe obſervations in favour of private education, we may quote the following paragraph from a work very lately publiſhed, entitled "Syſtematic Education." "Is it not," ſay the authors of that work, "moſt clearly the height of abſurdity to think of committing a youth, feeble in body and mind, to the diſcipline of our public ſchools. The ſyſtem neceſſarily adopted in thoſe ſeminaries does not admit of thoſe relaxations and indulgences, and of that minuteneſs of attention, which are requiſite to mitigate the effects of corporeal or mental infirmity. In ſo rude a climate, a ſickly plant will ſpeedily wither and die. What an affecting picture does the biographer of Cowper delineate of the ſubject of his memoir juſt emerging from an infancy of peculiar delicacy, and ſent to encounter, without protection, the contentions and buffettings of a public ſeminary of education. The little Cowper was ſent to his firſt ſchool in the year of his mother's death, and how ill ſuited the ſcene was to his peculiar character, muſt be evident to all who have heard him deſcribe his ſenſations in that ſeaſon of life, which is often very erroneouſly extolled as the happieſt period of human exiſtence. He has frequently been heard to lament the perſecution which he ſuſtained in his childiſh years, from the cruelty of his ſchool-fellows, in the two ſcenes of his education. His own forcible expreſſion repreſented him at Weſtminſter as not daring to raiſe his eye above the ſhoe-buckle of the elder boys, who were too apt to tyrannize over his gentle ſpirit. The acuteneſs of his feelings in his childhood rendered thoſe important years, which might have produced, under tender cultivation, a ſeries of lively enjoyments, miſerable years of increaſing timidity and depreſſion, which, in the moſt cheerful hours of advanced life, he could hardly deſcribe to an intimate friend, without ſhuddering at the recollection of his early wretchedneſs. It is true, that at Weſtminſter ſchool, Cowper acquired a conſiderable ſtore of learning, and imbibed the principles of that juſt taſte which characterizes all his writings. But at what a price were theſe accompliſhments purchaſed? What was the effect of the proceſs to which he was there obliged to ſubmit, upon the happineſs of his future exiſtence? His health was impaired—his ſpirits broken. He withdrew from the active ſcenes of ſociety into a comparatively uſeleſs retirement, and he finally became a prey to that morbid ſenſibility, which, for the long and dreary ſpace of thirteen years, rendered his life a blank in the records of intellectual exiſtence."

One of the chief arguments in favour of a public education is, that it is much more favourable than a private one to the pupil's improvement in knowledge, and much more likely to inſpire him with an ardour for learning. When a number of boys, of or about the ſame age, meet together in the ſame ſchool, each ſoon begins to feel the impulſe of a principle which enables the maſter to command their attention without much difficulty, and prompts them to apply with cheerful ardour to taſks which would otherwiſe be extremely irkſome. This principle is a generous emulation, which animates the breaſt with the deſire of ſuperior excellence, without inſpiring the youth with the envy or hatred of a competitor. When children are prudently managed in a great ſchool, it is impoſſible for them not to feel its impulſe. It renders their taſks ſcarcely leſs agreeable than their amuſements, and directs their activity and curioſity to proper objects. View, ſays a writer on this ſide of the queſtion, the ſcholar at a public ſchool, compoſing his theme, or turning over his dictionary; how alert! how cheerful! how indefatigable! He applies with all the eagerneſs and all the perſeverance of a candidate for one of the moſt honourable places in the temple of fame. Beſides, in a ſchool there is ſomething more than emulation to render learning leſs diſagreeable than it naturally is to children; when a number of boys in a great ſchool are all buſied on the ſame or ſimilar taſks, a ſpirit of induſtry and perſeverance is communicated from one to another through the whole circle, each of them inſenſibly acquires new ardour and vigour; even though he do not feel the ſpur of emulation, yet, while all are buſy around him, he cannot remain idle.

Neither are public ſchools ſo unfavourable to the virtue of their members, as they have been repreſented. If the maſters are men of virtue and prudence; careful to ſet a good example before their pupils; attentive to the particular character and behaviour of each individual among them; firm to puniſh obſtinate depravity, and even to expel thoſe who are more likely to injure the morals of others than to be reclaimed themſelves, and, at the ſame time, eager to applaud and to encourage amiable and virtuous diſpoſitions wherever they appear;—under ſuch preceptors a public ſchool will not fail to be a ſchool of virtue. Again, at a public ſchool young people enjoy much greater advantages for preparing them to enter the world, than they can poſſibly be favoured with, if brought up in a private and ſolitary manner. A large ſchool is a miniature repreſentation of the world. The objects which engage the attention of boys at ſchool are different from thoſe which occupy their parents; the views of the boys are leſs extenſive, and they are not capable of proſecuting them by ſo many baſe and mean arts; but in other reſpects, the two ſcenes, and the actors upon them, nearly reſemble each other. He, therefore, who has performed his part on the miniature ſcene, has rehearſed, as it were, for the greater: if he has acquitted himſelf well on the one, he may alſo be expected to diſtinguiſh himſelf on the other; and even he who has not diſtinguiſhed himſelf at ſchool, at leaſt enters the world with ſuperior advantages, when viewed in compariſon with one who has ſpent his earlier days in the ſolitude of domeſtic education. Beſides, when a number of boys meet in a public ſeminary of education, engaged in ſimilar ſtudies, and fond of the ſame amuſements, they naturally contract friendſhips with one another which are more or leſs cordial and ſincere than any that take place between perſons farther advanced in life. Friendſhips, it has been urged, are often formed between boys at ſchool, which continue through life, and are productive of the happieſt conſequences to the parties concerned.

One of the ableſt writers in defence of a public ſyſtem of education is Dr. Barrow, who informs us, that he has given to the public the reſult of his own experience and obſervations without diſguiſe. He is aware that the moſt formidable objections to this ſyſtem of education conſiſt wholly in the danger, either that the morals of the pupil will be corrupted by the corruption of his fellows; or that his improvement will be neglected in the confuſion naturally incident to numbers.

“Were the former of theſe objections,” ſays he, “well founded, it ought certainly to be deciſive. The purity of morals muſt not be ſacrificed to the acquiſition of learning. But, fortunately, this dreaded corruption is far from certain. The danger of it is not greater, perhaps, than in other ſituations; and at leaſt, if public ſchools furniſh the bane of morals, in them too are to be found the moſt powerful antidotes.”

The common notion that boys corrupt each other is not, ſays Dr. Barrow, juſt to the extent generally ſuppoſed. Its riſe and continuance may be very reaſonably accounted for without admitting its truth. The partiality natural to a parent inclines him to believe, that his ſon is diſmiſſed from his own hands innocent and ſpotleſs; and to conclude, when the ſon is afterwards found to be vicious, that he has been ſeduced by others more vicious than himſelf. The ſon, to ſoften his own offences, imputes the guilt and blame to his companions; and the father, willing to give credit to his aſſertions, condemns the ſchool, rather than his child, and the conduct of the maſter, rather than his own. The truth is, that when boys of various diſpoſitions and habits meet promiſcuouſly in a ſchool, they uſually diſcover one another's inclinations, with a quickneſs and penetration reſembling the effects produced by the private ſignals of free-maſonry; and each aſſociates with thoſe whoſe temper and purſuits the neareſt correſpond with his own. The corrupt attach themſelves to the corrupt, with the rapidity natural to thoſe who are careleſs of the characters of their friends; and leave the diligent and virtuous to form their intimacies among themſelves without any ſort of interruption. The former, indeed, do not frequently ſucceed in their endeavours to ſeduce the latter, and uſually reſpect them too much to make the attempt. The mutual encouragement and aſſiſtance of numbers will undoubtedly ſometimes puſh them farther in culpable purſuits, than each ſingly would have ventured to proceed. But Dr. Barrow, whoſe experience was very large, ſays he has ſeldom known a youth deeply involved in depravity at ſchool, who did not bring the ſeeds of it along with him.

In a numerous ſchool, the noiſe and riot of the pupils have uſually more merriment than miſchief; and their miſchief has more frolic than malignity. Care, however, muſt be taken, that occaſional frolic do not proceed to cruelty; that repeated tranſgreſſions do not ſink into ſettled corruption. To prevent theſe evils, the care and vigilance of teachers are neceſſary, and theſe, if wiſely exerted, will ſeldom fail of producing their effect. It is an eaſy taſk to introduce every pupil to proper connections when he firſt enters the ſchool, and to caution him againſt ſuch as are diſtinguiſhed only by their vicious propenſities and ſeductive manners. It is eaſy to puniſh vice, and expoſe it to contempt and diſgrace; and it is a moſt pleaſant taſk to ſhew conſtant favour and encouragement to truth, integrity, and diligence;—to make it appear on all occaſions, that if a ſtudious and virtuous youth ſhould be expoſed to the ridicule or malice of his leſs meritorious ſchool-fellows, he will find himſelf abundantly compenſated by the eſteem of his maſter and his friends. Such a courſe of conduct in teachers ſeldom fails to be rewarded by the gratitude, as well as the progreſſive virtue, of thoſe entruſted to their care.

The exertion required in the ſtudents to perform the taſks appointed in every well-regulated ſchool, is itſelf highly favourable to the vigour and activity of the intellect; and eventually, therefore, to the intereſts of virtue. There are always among the pupils of a large ſchool, a ſort of public opinion, and certain laws of honour, which, though ſometimes founded on erroneous principles, generally tend to the prevention of mean or malignant vices: and ſuch manlineſs of ſentiment and ſpirit are thus generally acquired, as pave the way to the ſubſequent correction of any errors, into which the negligence or impetuoſity of youth may and will ſurpriſe them. “Let ſound learning,” ſays Dr. Barrow, “give a young man ſtrength of mind to conquer himſelf, and from any other moral enemy he will ſoon have little to fear.” If ſuch a ſchool be found the moſt favourable to the promotion of ſound learning and knowledge, it will not be much leſs favourable to the ſoundneſs of moral principle. Notwithſtanding ſome extraordinary exceptions, which by the wonder they excite are proved to be rare, it is commonly true, our author ſays, that as the mind is enlarged, the affections are rectified.

The next objection, that the youth's improvement may be neglected amidſt the confuſion incident to numbers, is, according to Dr. Barrow, founded wholly upon miſtaken notions of a large ſchool, or of human nature. Order and regularity in its buſineſs are eſſential to the government of a public ſchool, and muſt there be preſerved and enforced with a degree of ſteady uniformity, which cannot eaſily exiſt elſewhere. By ſyſtem only can application produce its proper effect: by ſyſtem only can any art or ſcience be ſucceſsfully taught. Nor, ſays Dr. Barrow, does a larger portion of his time beſtowed by the maſter produce a correſpondent benefit to the pupil. “His progreſs in literature does not depend ſo much upon what is done for him by others, as upon what he can be ſtimulated to do for himſelf. The teacher, indeed, will naturally exert the greater zeal and diligence where greater numbers are to profit by his inſtructions, and to judge and report his conduct; and the ſame circumſtance is every way favourable to the improvement of his ſcholar. The voice of the preceptor, to adopt the ſimilitudes of Quinctilian, is not like the food provided for an entertainment, where each man's ſhare muſt be diminiſhed in proportion as the numbers are increaſed. It ſhould rather be compared to the ſun, which diſpenſes the ſame degree of light and heat to each individual of a multitude, however numerous and extenſive. The attention of the ſtudent ſeldom fails to be rouſed and fixed by the attention of his teacher. The oppoſition of his rivals, the aſſiſtance of his friends, the praiſe or cenſure of his maſter and his ſchool-fellows; the hope of reward, and the fear or ſhame of puniſhment: all theſe motives united produce ſuch exertions, as no domeſtic teacher can hope to ſecure. By every exertion, too, his faculties naturally expand; confidence in his own powers increaſes by ſucceſs; and the pupil of a public ſchool often attains to an eminence in literature, which a youth differently circumſtanced would not attempt; and which himſelf, perhaps, had not preſumed to expect. Each, indeed, is aware, that a character eſtabliſhed among a numerous claſs of ſchool-fellows will be very widely diffuſed in the world, and promote his advantage, or his reputation, in all the ſubſequent tranſactions of his life. And he to whom the palm of merit is adjudged, after an examination, probably feels greater pride and pleaſure than can eaſily be deſcribed.

Dr. Barrow, in ſpeaking of private and domeſtic tuition, ſays, that the objections to it are at leaſt of equal weight with thoſe which are uſually urged againſt public education. Private tutors for individual pupils he conſiders the leaſt eligible mode of giving literary inſtruction, becauſe he thinks men of real talents cannot be found to undertake the taſk, or if they do, that they will not exert a proper portion of zeal and diligence for a ſolitary pupil; and the exertions of the pupil will not be more than proportionate to thoſe of his preceptor. "To prevent any ſeverity of diſcipline is generally one of the firſt principles of domeſtic tuition. Compulſion and correction, therefore, are in a great meaſure excluded. The youth has no rivals of his own age to ſtimulate his efforts, and no friends to aſſiſt or applaud them. Honour and ſhame, of the firſt importance in all other caſes, have hardly any place in the ſyſtem. Every thing, therefore, is languid and inefficient. Even the ſports of the private pupil, for want of aſſociates and competitors, have little animation and little pleaſure. He cannot compare his own acquiſitions with thoſe of others, and therefore eſtimates them rather by the meaſure of his own vanity, than the ſtandard of truth. His books will engage leſs of his attention, than thoſe amuſements in which he is too liberally indulged; and for the ſake of which, in ſome degree, the plan of domeſtic education was adopted; and he will value himſelf leſs upon his progreſs in literature and ſcience, than upon his taſte in dreſs, or his dexterity in the ſports of the field."

A ſchool with a ſmall and limited number of pupils he thinks liable to fewer objections, but not entitled to much greater praiſe. Every circumſtance which ſeems to recommend them, forms an objection to them as places of literary education. To conſult by every means the eaſe and comfort of boys, to ſupply them with a full ſhare of amuſements and luxuries, may conciliate the favour of the parents; but their natural tendency is to make pupils men of pleaſure, not men of learning. The maſter profeſſes to beſtow his whole time upon a ſmall number, and accordingly a larger portion of attention upon their improvement; a profeſſion which, if fulfilled, is ſeldom beneficial. Some of theſe ſchools profeſs to exclude all ſeverity; to have recourſe to as little reſtraint as poſſible; and to uſe every means to avoid the appearance of arbitrary power. After all, Dr. Barrow aſſumes that without the uſe or the fear of ſevere puniſhment not a ſingle ſcholar was ever made. "The acquiſition of learning muſt always be laborious; and by what motives but the fear of a greater evil, ſhall boys be induced to labour with regularity and perſeverance: they cannot, or they will not, underſtand the force of arguments drawn from diſtant and future advantage,—the policy of ſuſpending enjoyment for the preſent, in order to increaſe it hereafter. The forbearance and virtues of the ſtoic, indeed, ſuit their comprehenſion as little as their inclination. They are, when left to themſelves, the genuine diſciples of Epicurus; they graſp with avidity the pleaſures of the preſent hour, with little thought, and leſs apprehenſion, of what may happen to-morrow."

The great argument, however, for private in preference to a public education, is a regard to the morals of the youth. The ſtronger we form the habit of virtue, the better prepared will he be to encounter the corruptions of the world. If he has ſeen nothing but virtue, he will hear of vice with horror; and by keeping him perpetually under the eye of a virtuous and vigilant preceptor, the impreſſion becomes ſo ſtrong, that it will not be eaſy to efface it. "You have," ſays Mr. Gilpin, "in that caſe fixed the ſeal, and given the wax time to cool." This, indeed, depends on the choice of a proper inſtructor; but it is probably eaſier to find a good tutor than a ſchool free from vice. In anſwer to this it has been aſked, if we wiſhed to form a young ſoldier, ſhould we be ſatisfied with ſhewing him how to draw up an army on a paper,—how to fortify a camp, or beſiege a town, on a table? and could we expect, from this kind of inſtructions, that he could commence a maſter in tactics, and be qualified to command an army? Would it not be much better that he ſhould have experience under able and diſtinguiſhed commanders? Though the caſes are not exactly ſimilar, yet with reſpect to morals, as well as to actual military ſervice, a youth ſhould fight the good fight; ſhould put on the armour of God; ſhould grapple with principalities and powers: and accordingly, if the ſoldier ought to be formed in the field among the dangers of his profeſſion, ſo the young Chriſtian ſhould be educated amidſt the temptations of the world. For this purpoſe, the knowledge, not the practice of vice, ſeems to be as neceſſary a part of education as the knowledge of virtue; for unleſs the navigator point out the ſhoals and rocks upon the coaſt, as well as the commodious harbours, his chart will be very imperfect. So it is with regard to the moral culture of a youth; furniſh him, if you pleaſe, with every mode of knowledge which inſtruction can give; raiſe in his breaſt the moſt exalted ideas of virtue, and the nobleſt ſcorn of every thing mean and unmanly; but you may fully expect, that when he comes into the world, he will find himſelf deficient in one ſpecies of knowledge at leaſt—the knowledge of real life: and though he know vice is deteſtable, and might not be in danger of ſeduction, if he could always ſee it in its proper colours; yet, having never been initiated into the myſteries of life and manners, nor having had any opportunity of tracing the diſguiſes of the human heart, he will not be able, in many caſes that muſt neceſſarily occur, to diſtinguiſh truth from falſehood. Beſides, what will be the ſurpriſe of the youth educated under the domeſtic roof, and who has heard nothing of virtue and vice, but deſcriptions of the excellence of the one and the hideouſneſs of the other, when he comes into the world and finds the young man of faſhion, who is careſſed by all around him, and who is eſteemed perhaps the moſt agreeable man in all companies, but who, on a nearer inſpection, is found to be immerſed in every ſpecies of debauchery? Will he not naturally aſk, have I not been deceived; can the account of things which has been given to me been a fair and true account? Is vice ſo hideous and deteſtable in its nature as has been repreſented? “Depend upon it,” ſays an animated writer on the ſubject, “this is the language of nature, and a much more eloquent kind of language than the dead letter of a cloſet lecture. And though ſuch pleadings in favour of vice are too apt to find a paſſage into every youthful breaſt, yet I ſhould think they would faſten the moſt eaſily on the moſt inexperienced—on thoſe who have been the leaſt accuſtomed to develope the gloſſes of the human heart. Deprived of experience, what other criterion can the raw youth ſubſtitute in its room, to ſeparate appearances from realities? Wholly unverſed in the ways of men, he is continually miſtaking one thing for another—forming improper connections—or giving way in an unguarded hour—or gliding into undue compliances: and theſe falſe ſteps, which he may be led into through ignorance, may end at laſt in the total extinction of virtue. It is inconceivable how ſoon the inexperienced mind may ſlide into frail indulgences. The habit of virtue cannot be formed in a cloſet. Habits are formed by acts of reaſon, in a perſevering ſtruggle through temptation. The domeſtic youth has never been put to proof. His paſſions are not ſubdued; they are aſleep, and have never been awakened. Rouſe them by temptation, and you will ſee what hold your leſſons have obtained. Whereas, he who is early initiated into life, and manners, is naturalized to the ſoil by degrees, and is certainly better able to ſuſtain the varieties of the climate.” But it is ſaid, that in a private education it is not neceſſary that the knowledge of the world ſhould be entirely left out of the domeſtic courſe of inſtruction. We may take a thouſand opportunities to inſtruct the pupil, in the moſt retired ſituation, in the characters of men,—to inform him of the various deceits he muſt expect to find,—and to warn him that he muſt not ſuppoſe every thing is virtue which is careſſed, but look upon the world and its various actors with a jealous eye. This being admitted, ſtill we all know, that after the moſt laborious efforts, we may have omitted in our deſcriptions thoſe very characters, which the pupil ſecluded from the world may firſt meet with when he enters into its active ſcenes, and thus with the utmoſt preparation he will at the onſet be unprepared for the conteſt, in which he will neceſſarily be called to engage. For the colours of men are ſo various and ſo changeable, that we might with equal eaſe fix the preciſe tinge of each drop in the ſhower that floats by in the ſunbeam, as characteriſe, by deſcription, the various arts and ſubterfuges and gloſſes of mankind. They can only be known by experience. And he muſt ſtand the beſt chance to obtain a proficiency, who has been early introduced to the world in miniature—has made his own obſervations—and from his own experience, and little errors, has formed within himſelf that watchful temper, which is the beſt ſecurity of morals. Human nature is ever the ſame. The boy ſees at ſchool what he afterwards finds practiſed in the world. The ſcale is only more enlarged; and the mode of refinement ſomewhat more delicate; and though it cannot be ſuppoſed that his knowledge of mankind can be at all matured; yet he has gotten, at leaſt, the grammar of the world by heart; and will be able to apply very many of his rules, when he comes to read its living authors at large. Again, though in the beſt ſchools, and in ſpite of every attention, there be too little of what are denominated the delicacies of moral feeling, yet it is aſſumed by the friends to ſchool-education, that in a certain degree the knowledge of vice may be uſeful. The education of a ſchool, conſtituted as the world is, would be imperfect without it. “Here,” ſays Mr. Gilpin, in his excellent dialogue on the ſubject, “we ſee, and learn to avoid thoſe evils which will ſoon infallibly ſurround us. Nay, vice itſelf, when properly corrected, is an excellent preacher. The infliction of ſhame and puniſhment to others, enforces the virtuous habit more ſtrongly, perhaps, than a leſſon of virtue on ourſelves:

> ——“Teneros animos aliena opprobria ſæpe,
> Abſterrent vitiis.”

By living examples the maſter points out the inſtruction; and, in a manner, realizes morality. Precept and example are joined together. The former, without the latter, wants life and ſpirit.”

Horace, ſpeaking of his own education, ſays, his father ſent him to one of the beſt ſchools in Rome, and preſided himſelf over his education, inſtructing him in morals by pointing out to him the good or bad qualities of his companions, and ſhewing him the conſequences of their actions. Whereas a private education muſt need want that variety of examples, which a more public one is able to furniſh; at leaſt it wants an intimate acquaintance with that variety of circumſtances, on which every character is formed, and from which almoſt every action receives its denomination.

The advocates for a public, in preference to a private education, affirm that the temper of a lad is not more improved by a ſchool education than his activity and ſpirit. What, ſay they, would become of Old England's glory, if all her ſons ſhould be nurſed in the effeminacies of a parlour? Where would be that hardineſs—that undaunted ſpirit—that love of enterprize—that fearleſſneſs of danger—and, in ſhort, that manlineſs which is fit for all the offices of ſociety, and which is early acquired by buſtling in a crowd? Theſe alſo aſſume, that high principles of honour are better inculcated in public. The friendſhips, quarrels, and various intercourſe among boys, afford a thouſand opportunities of exhibiting and improving ſuch principles, which cannot be had in private. The emulation of glorious deeds inſpires them more ſtrongly in a crowd of ſpectators; and the pulſe of honour of courſe beats higher.

It is farther aſked, if it be not a matter of great importance to inculcate ideas of ſociety; and to imbue the mind with early notions of ſubmiſſion to authority and government. Moreover, at ſchool a boy gets ſome idea of that dependence, which the ſeveral parts of a community have on each other. He ſees the beauty of order, the utility of law, and the neceſſity of good government. School hours, and ſchool privileges, have a favourable tendency alſo to impreſs upon him a love of liberty, of the value of which a youth brought up at home cannot form an idea. He may have leſſons on all theſe ſubjects, but ſuch leſſons muſt ever be inferior to a real intercourſe with life, ſeeing with his own eyes, and obtaining knowledge by experience.

Such ſeem to be the chief arguments in favour of the different modes of education; but it is impoſſible, as we obſerved in the outſet, to come to any general concluſions. It is admitted on all hands, that there are many caſes in which a youth cannot be truſted to a large ſchool; there is, however, a conſiderable diſcordance of opinion as to the particular ſubjects which may, and which may not, be ſent to ſchool. Dr. Knox and Dr. Barrow enumerate among the number not to be entruſted to a large ſchool, thoſe whoſe diſpoſitions are meek, who have a natural weakneſs of underſtanding, bodily infirmity, or who, unfortunately, have any natural defects. Boys, ſay the learned doctors, in theſe circumſtances ſhould be treated like thoſe tender plants which, unable to bear the weather, are placed under glaſſes, and in the ſhelter of a greenhouſe. The oak will flouriſh beſt in open expoſure. But Dr. Paley, on the ſame ſubject, ſays; "With a view to the particular frame and tendency of the pupil's character, I would make choice of a public or private education. The reſerved, timid, and indolent, will have their faculties called forth, and their nerves exerted and invigorated by a public education. Youth of ſtrong ſpirits and paſſions will be ſafer in a private education."—"At our public ſchools," he adds, "as far as I have obſerved, more literature is acquired, and more vice; under private tuition, a moderate proficiency in juvenile learning is ſeldom exceeded, but oftener attained."

In Mr. Gilpin's dialogue on education, ſir Nathanael Digby, having heard the chief arguments on the ſubject advanced by lord Somers and archbiſhop Tenniſon, is made to ſay, "That there was too much argument on both ſides of the queſtion to give up either. My lord preſident, (ſaid he,) has ſhewn ſo ſtrongly the neceſſity of an early introduction to the world, that I think it cannot be overlooked in education. At the ſame time, turning to me, you have pointed out ſo many groſs corruptions in the general management of ſchools, that I think we muſt be very wary how we truſt our children in any of them. Let me then propoſe a compromiſe. Chuſe the moſt virtuous ſchool you can, where the head is not neglected; but where the heart is more attended to, and where religion is made more an object than learning. Here let your boy continue till he be twelve or thirteen; in five or ſix years he will have ſhaken off the ideas of the nurſery; and have gained ſome knowledge both of the world and of himſelf. About that time, ſooner or later, his paſſions begin to riſe, and that is the critical period when I conſider the vices of ſchools both in the way of knavery and ſenſuality to be moſt miſchievous. Hitherto they have made little impreſſion. This is the time then, (applying himſelf to Dr. Tenniſon,) when your ſcheme ſhould take place. If you can find a good tutor, you will certainly, by placing your ſon under him, I think, reap the advantage in point of morals, and in my opinion in point of learning alſo. I know not, (added he,) what you claſſical gentlemen may think, but it appears to me a very great waſte of time, to lay it out on acquiring the proprieties and elegancies of a dead language, which is nearly all that our public ſchools profeſs. For myſelf, I own, freely, I loſt much time in thoſe purſuits, which I have ſince found of little or no advantage to me. In my time I could have made Latin verſes with any boy of my ſtanding, and could have compoſed, at leaſt as I then thought, in pure Ciceronian ſtyle. At preſent, for want of uſing faculties which I never had any uſe for, I ſhould be aſhamed of ſhewing either ſuch verſes, or ſuch Latin, as I could now write, to the lads of any of the upper forms of our great ſchools. If a youth can read and underſtand a dead language, it ſeems to me all that is neceſſary. At the age of thirteen or fourteen, his mind ſhould therefore be opened by knowledge, and this will certainly be effected better by the application of a tutor than the beſt grammar-ſchool." See Locke, Barrow, and Knox, on Education, and Gilpin's Dialogues. To Barrow and Gilpin the foregoing article is much indebted.

Schools, *Charity*, are thoſe ſchools which are ſet apart by public contributions, or private donations, for the inſtruction of poor children, who could not otherwiſe enjoy the benefits of education. In no country are theſe more numerous than in our own; nevertheleſs, from a report made to parliament a few years ſince by Mr. Roſe, it ſhould ſeem that only a ſmall part of the children who actually ſtand in need of gratuitous education, can enjoy its benefits. By the returns made under Mr. Roſe's act in the year 1803, compriſing very nearly the whole of England and Wales, it appeared that the number of children out of the workhouſe, between five and fourteen years of age, who have been the ſubjects of pariſh relief, was 188,794; whereas the number of thoſe who had enjoyed the benefit of ſchools of induſtry, receiving education, amounted only to 20,336, being leſs than the ninth part of the number actually receiving parochial relief.

The deſign of ſetting up ſchools for the inſtruction of children of the meaneſt and pooreſt of the people, was begun in the year 1698. What now has diffuſed itſelf through the whole nation, ſprung from a very ſmall ſeed, which was firſt planted in London, and which, by the bleſſing of heaven, has, in a wonderful manner, increaſed. This charitable deſign, which originated in the kindneſs of individuals, was, in London, taken up on a more extenſive ſcale; a great number of pariſhes aſſociated together; truſtees were choſen in each diſtrict to overlook the management of the maſters and miſtreſſes, and to preſcribe rules and orders for the government of each ſchool; treaſurers were alſo appointed, to whom all contributions might be paid, and who were, under the direction of auditors, to make up accounts of all money received and diſburſed. The children, beſides being inſtructed in the elementary branches of education, and in the fundamental principles of religion, are all clothed at the expence of the truſtees and ſubſcribers, and when they have been taught to read, write, and caſt accounts, they are either put out to ſervice or to ſome handicraft trade. The girls are likewiſe inſtructed in ſuch duties as may fit them for ſervice. Theſe ſchools almoſt immediately became favourites with the public, and in the year 1700 it was thought neceſſary that the truſtees ſhould be formed into a voluntary ſociety, and that a chairman ſhould be elected to preſide at the meetings of the truſtees as often as occaſion ſhould render it neceſſary. Theſe meetings have regularly been continued till this time, where orders from time to time have been by the majority of votes agreed upon, and in 1729 rules and orders for the better regulation of the ſchools were recommended by ſeveral truſtees of the ſchools in the country, which being laid before the archbiſhops and biſhops of the ſeveral dioceſes in the kingdom, they were approved and eſtabliſhed by their ſignatures. "If theſe orders," which are pretty generally known, "be candidly conſidered, there is no room for the objections that are commonly made againſt the charity-ſchools; and it muſt be a great ſatisfaction to thoſe who have engaged in this uſeful deſign, that out of ſo great a number of children as have been thus educated, there is but one inſtance that any of them have been convicted of any crime; and this perſon, being tranſported, was ſo far influenced by the early principles of his education, as to be ſo completely reclaimed, that he became a very induſtrious and ſober man, and was ſo ſenſible of the benefit of his education, that being in good circumſtances, he was an annual contributor to the ſchool in which he was educated." In ſome ſchools, both in London and the country, where the benefactions will allow it, the children are fed and clothed; and in theſe the children of both ſexes are inured to labour, and the profit of their work applied towards their maintenance; in moſt of the country-ſchools, the

the children in the time of harveſt may be abſent from ſchool for a certain period, either for the purpoſes of gleaning, or for aſſiſting in the labours of the field.

Theſe ſchools are ſupported by voluntary contributions in every pariſh and ward; they have no obligatory ſupport from the laws, nor from the government, and therefore they may be ſaid to exhibit a pleaſing repreſentation of the Britiſh character, which feels the neceſſity of educating and clothing the children of poor neighbours, while it enjoys the important benefit of inſtruction and comfort for its own.

The numbers who are taught in theſe ſchools of London, Weſtminſter, Southwark, &c. are not leſs than 5000. The combination of all theſe ſchools in one view was an extraordinary effort of mind endowed with benevolence, and a foreknowledge of the probable effects: this may be traced back more than a century. In 1713, out of 2250 youths who had been placed as apprentices and ſervants from theſe ſchools, more than 1400 aſſembled at St. Bride's church, in which a ſermon was preached before them from the words "When my father and mother forſake me, the Lord will take me up." In the year 1716, about 4800 children attended on the anniverſary of the charity-ſchools at St. Sepulchre's church. From the ſalutary effects of theſe meetings, the moſt affecting ſpectacle of modern times has become a part of the plan of this ſociety: the truſtees are denominated the "Patrons of the Anniverſary of the Charity-ſchools." They are ſanctioned by the dean and chapter of St. Paul's, and are allowed the uſe of that church annually in the month of May, where ſeats are erected under the dome for the reception of ſeven thouſand children, with their maſters, matrons, guardians, &c. A temporary deſk and pulpit are alſo erected, in which the ſervice is performed; the children join by ſinging appropriate pſalms, with the Gloria Patri: theſe numerous voices, led by the muſic maſter, on whom all their eyes are fixed, while he beats time, aſcend the dome, and vibrate through

"The long-drawn aiſles and fretted vaults,"

while the

"Pealing organ ſwells the note of praiſe."

"No language," ſays Mr. Malcolm, in the Anecdotes of London, "is adequate to convey the idea of this almoſt celeſtial choir. The vaſt crowd of ſpectators which aſſemble in the church by tickets on this occaſion from year to year, and the collections made at the doors, prove the ſenſation which this juvenile aſſembly has upon the public mind." It is, however, to be regretted, that out of the ſum collected, ſo ſmall a part can be appropriated to the charity; ſeven-eighths of the whole are expended in erecting and clearing away the ſcaffold, and other neceſſary expences; in the year 1808 the receipts amounted to 972*l.* 13*s.* 10*d.*, and the whole expenditure to 824*l.* 11*s.* 4*d.*, leaving a balance of only 148*l.* 2*s.* 6*d.* for the uſe of the ſchools.

Beſides theſe aſſociated charity ſchools, there are, no doubt, in the united kingdom ſeveral hundred others which are ſeparate and independent inſtitutions; in the year 1793 a ſummary view of the number of charity-ſchools in Great Britain and Ireland was publiſhed, by which it appeared, from the beſt information that could be obtained, that there were, at that period

	Schools.		Boys.		Girls.
In London - - -	182	affording education, &c. to	4442	and	2870
In other parts of South Britain	1329	- - - - - -	19506		3915
In North Britain - -	135	- - - - - -	5187		2618
In Ireland, for teaching to read and write only - -	168	- - - -	2406		600
In Ireland, erected by charter, for inſtructing, employing, and maintaining the children, excluſive of the Dublin workhouſe ſchool - -	42	- - - - - -	1935		
Total of ſchools	1856	Total of children	33476		10003

Schools, *Sunday*, are another ſpecies of charity-ſchools, inſtituted about thirty-five years ago, and which are now very common in almoſt every town and village in Great Britain. That this inſtitution is of very great importance to the intereſts of a country, will not be denied by thoſe who admit of a cloſe connection between morals and education. The original founder of theſe ſchools was Robert Raikes, eſq. of Painſwic, in Glouceſterſhire, who ſaw with regret that the inſtitution of Sunday, as a day of reſt, intended for the moſt benevolent purpoſes, had in many caſes a very unfavourable effect on the morals of people: he therefore concluded, that the day might be made truly beneficial, if its hours, or a part of them, could be devoted to the inſtruction of children in reading and other elementary principles of education. This plan would, at leaſt, preſerve the children of the poor from ſpending the day in idleneſs, and of conſequence in diſſipation and vice; and at the ſame time enable them to lay in, for the comfort of a future life, a ſtock of uſeful knowledge and virtuous principles, which, if neglected in early life, will perhaps never be ſought after amidſt the hurry of buſineſs, and the cares and temptations of the world. The ſcheme, firſt attempted at Painſwic, was ſoon carried into execution in the city of Glouceſter, and from thence very quickly extended itſelf to every part of the kingdom. The plan recommended itſelf from its cheapneſs as well as utility: a ſeparate building, in moſt caſes, is not neceſſary; the church, or chapel, or meeting, affording accommodation for the purpoſe; and young perſons of from fifteen to twenty, who themſelves had enjoyed the advantages of a good education, found employment for the exertion of their faculties, in becoming, without fee or reward, the inſtructors of the poor, who ſtood in need of their help. It is not poſſible to aſcertain the numbers of children who have received, in this way, the elements of inſtruction. In many caſes we have known that from Sunday ſchools have ariſen ſchools on an enlarged and more beneficial plan, which have been intended to receive, into a houſe for maintenance, a certain number who have beſt improved by their weekly leſſons. In favour of the inſtitution of Sunday ſchools, it may be obſerved that

Mr. Raikes, the founder, has left on record, that during a period of twenty years, ſince the firſt eſtabliſhment of Sunday ſchools at Glouceſter, about 3000 children had received education there; and, though he had regularly viſited the city and county gaols, he had only met, during that period, with one inſtance of criminality, in any of the 3000 perſons.

It has been obſerved, that ſchools of this kind were ſoon ſpread over almoſt the whole kingdom, and their utility and importance excited a ready liberality towards their ſupport: but many were eſtabliſhed in very ſmall and remote diſtricts; and after a ſtruggle for want of patronage, and that kind of notice which always acts as a ſtimulus, even in caſes where, in fact, a ſtimulus ſhould not be neceſſary, they ſeemed to be on the decline. A foſtering hand was neceſſary to uphold and ſupport the declining cauſe. The benevolence of the capital, which is ever active, was therefore ſolicited for their encouragement and preſervation, and for the ſupply of ſuch books as were neceſſary towards their progreſs. This led to the inſtitution, in the year 1785, of the Sunday-ſchool ſociety, the object of which was to promote, by correſpondence, and effectual communication and pecuniary aſſiſtance, the eſtabliſhment of Sunday ſchools in all parts of the country; to induce the opulent, and thoſe who are in eaſy circumſtances, to viſit and ſuperintend the education of the young, and to ſuggeſt ſuch improvements as may occur to them; to provide ſpelling books, teſtaments, bibles, &c. for the uſe of the ſcholars; to direct that all the ſcholars attend ſome place of worſhip every Sunday, ſuch as their parents approve; that they be clean in their dreſs, and decent in their behaviour; and during the intervals of the day, that they be taught to read the bible, &c. The ſucceſs of this inſtitution has extended its benefits to every part of the united kingdom.

The objects of this charity are poor children of each ſex; and during the firſt fourteen years in which the ſociety exiſted, nearly 3000 ſchools were eſtabliſhed, and 246,724 ſcholars inſtructed in them: the books diſtributed were 249,896 ſpelling-books, 55,881 teſtaments, and 7,423 bibles; and to ſchools that ſtood in need of pecuniary aſſiſtance, the ſum of 4165*l.* 12*s.* 4*d.* had been advanced.

Schools *for the Poor, on the Plan of Lancaſter and Dr. Bell.* In the year 1789, Dr. Bell, then a chaplain to the Eaſt India Company, undertook the management of a charity ſchool eſtabliſhed at Madras under the name of the Male Aſylum. Beſides himſelf, he had aſſiſtants or under-maſters to aſſiſt him. The number educated in the ſchool, at the time in which he left the Eaſt Indies, in 1796, was on the average 200. Previouſly to the commencement of his ſuperintendance, Dr. Bell had frequently obſerved the vaſt advantages attending the mode of teaching by writing in ſand, practiſed from time immemorial in all the native ſchools of Malabar. He therefore reſolved to adopt the practice in the aſylum; but he met with many difficulties from the confirmed habits of his teachers, who were grown up men, and on that account he had recourſe to the plan of teaching by the elder boys, whoſe habits and prejudices were eaſily overcome, and whom he was enabled, with little difficulty, to qualify as inſtructors to the reſt. In adopting this expedient, he, in fact, only did ſyſtematically what is more or leſs done in almoſt all ſchools in Europe, and in ſome very regularly. It will, however, be readily admitted, that Dr. Bell's method was more entire and ſyſtematic, and that he made uſe of the boys, inſtead of adult teachers, with a view to overcome a ſpecific difficulty, *viz.* the prejudices of the latter againſt the writing in ſand, and their unfitneſs to introduce it. Hence, it is quite evident, that we owe a great improvement in education to Dr. Bell. In the year 1797, this gentleman gave the firſt publication on the ſubject to the world, under the title of "An Experiment in Education, made at the Male Aſylum of Madras, ſuggeſting a ſyſtem, by which a ſchool or a family may teach itſelf, under the ſuperintendance of the maſter or parent." This being the foundation of the plan, of which the ſand-writing may now be ſaid merely to conſtitute one of the additional details, or partial improvements, one other improvement of a ſimilar deſcription was added by Dr. Bell. He introduced a mode of reading and pronouncing by ſyllables, inſtead of the common way—thus teaching the art of ſpelling with additional eaſe and accuracy. Having inſtructed the elder and more intelligent lads in this art as well as that of ſand-writing, they were found perfectly capable of communicating it to the reſt. All other branches of knowledge were taught in the common way. In 1797 Dr. Bell returned to England, publiſhed the pamphlet above alluded to, and then retired into the country upon an obſcure living at Swanage, in the county of Dorſet.

In the year 1798, Mr. Joſeph Lancaſter brought into practice the plan which had been ſuggeſted by Dr. Bell. We mean to avoid, as much as poſſible, entering into the controverſy which has ſubſiſted between the adherents of Dr. Bell and Mr. Lancaſter, as to the praiſe of invention. Our chief object is to explain the principles on which both ſchemes are conducted. The ſyſtem itſelf, to whomſoever the merit of invention, or of bringing it into practice belongs, is calculated to promote a cheap, rapid, and eaſy diffuſion of knowledge in an unprecedented degree. By ſtating, as we ſhall now ſtate, the methods adopted by J. Lancaſter, we give our readers a competent idea of the new ſyſtem. What appears to us the radical difference between the practice of the ſchools conducted by the followers of Lancaſter and thoſe of Dr. Bell, is, that the former teach the bible, and allow the children of all ſects the benefits of education, obliging them to attend on the Sunday in ſome place of worſhip, but no particular place is preſcribed: whereas at the ſchools under the ſuperintendance of Dr. Bell, the church catechiſm muſt be learnt by each ſcholar, and each ſcholar is obliged to attend the ſervice, as performed at the church eſtabliſhed by law. The one aims at making the young, Chriſtians; the other offers protection and inſtruction to none but thoſe who are willing to enliſt themſelves in a particular claſs of Chriſtians.

By the mode of inſtruction now to be explained, children of the firſt or loweſt claſs are taught to write the printed alphabet, and to name the letters when they ſee them. The ſame is done with the figures uſed in arithmetic. One day the boy traces the form of the letter, or figure, the next day he tells the name, when he ſees the letter. Theſe two methods aſſiſt each other. In the ſame manner he learns ſyllables and words, writing them one day and reading them the next. This progreſs being made, the claſs, perhaps of 20 or 30, go up to read: while one boy is reading, ſome word is given out by the monitor, which is to be written down, ſyllable by ſyllable, by all the other boys of the claſs, which writing being examined by the monitor, another word is given out for the ſame purpoſe. So that when one boy is reading, all the others in the ſame claſs are, at the ſame time, writing and ſpelling; but by the old method, only one was employed and the others were idle.

Boys of the firſt and ſecond claſs write in ſand; the next, having made a certain progreſs, are allowed the uſe of ſlates; and the upper boys are entruſted with paper and ink. This is a great ſaving in point of expence; but in books the ſaving is ſtill greater. Twenty or thirty boys ſtand round a card ſuſpended to a nail; and on this card are printed the letters in a very large character: theſe letters the boys are to name, at the requeſt of the monitor. When boys of one ſpelling claſs have ſaid their leſſons in this manner, they are diſpatched to ſome other occupation, and thoſe of another ſpelling claſs ſucceed. In this manner one book or one card may ſerve 200 boys, who would, according to the common method, have had a book each. In the ſame way, ſyllables and reading leſſons are printed on cards, and uſed with the ſame beneficial economy. A ſimilar method is adopted with regard to arithmetic; ſo that in a ſchool of a thouſand children, few books are wanting.

In a ſchool of this ſort nothing can be done without a moſt preciſe attention to order, and in this part of his plan, which ſeems to be entirely his own, Mr. Lancaſter has been eminently ſucceſsful, by contriving to make the method and arrangement (ſo neceſſary to his inſtitution) a ſource of amuſement to the children. In coming to, and going out of ſchool, and in moving in their claſſes from one part of the ſchool to another, the children move in a kind of meaſured pace, and to known places, according to their *number*, of which every boy has one. Upon the firſt inſtitution of the ſchool, there were a great loſs and confuſion of hats: now, when every boy has taken his proper and known place, they all ſtand up, expecting the word of command "fling your hats;" upon which they immediately ſuſpend their hats round their necks, by a ſtring provided for that purpoſe. When the young children write in ſand, they all look attentively to their monitor, waiting for the word, and inſtantly fall to work, with the utmoſt preciſion. All theſe little inventions keep children in a conſtant ſtate of activity, prevent the liſtleſsneſs ſo obſervable in all other inſtitutions for education, and evince an original and obſerving mind in him who invented them.

The children aſſembled round their reading or arithmetical cards *take places* as in common ſchools. The boy who is at the head of the claſs wears a ticket with a ſuitable inſcription. The ticket-bearer is obliged to yield his badge of honour to any one who can excel him; and the deſire of obtaining, and the fear of loſing the mark of diſtinction, create, as may eaſily be conceived, no common degree of enterprize and exertion. The children have a prize when they are moved from one claſs to another. Thoſe that are appointed to teach others are called monitors: they are in the proportion of one to about ten; ſo that 1000 children may be managed by one ſuperintendant; the reſt of the teaching is all done by the boys themſelves. Beſides monitors for inſtruction, there are other monitors for general purpoſes, ſuch as inſpectors of ſlates, inſpectors of abſentees, &c.

The improvements, then, of this new ſyſtem of education over the old, conſiſts in the cheapneſs of the ſchools, the activity of the boys, and alſo their order, and their emulation. The reading, cyphering, and ſpelling cards, ſuſpended for the uſe of two or three hundred boys; the employment of ſand and ſlates, inſtead of pens and ink; and particularly of monitors, inſtead of uſhers; muſt, in large ſeminaries, conſtitute an immenſe ſaving. "The introduction of monitors," ſays a writer on the ſubject, "an extremely important part of the whole ſcheme, is as great an improvement in ſchools, as the introduction of non-commiſſioned officers would be in an army, which had before been governed only by captains, majors, and colonels: they give that conſtant and minute attention to the operations of the maſs, without which the general and occaſional ſuperintendance of ſuperiors is wholly uſeleſs. An uſher hates his taſk, and is often aſhamed of it; a monitor is honoured by it, and therefore loves it: he is placed over thoſe, who, if their exertions had been ſuperior to his own, would have been placed over him; his office is the proof of his excellence. Power is new to him, and truſt makes him truſt-worthy; a very common effect of confidence, and exemplified in the moſt ſtriking manner in Mr. Lancaſter's ſchool. Nor is the monitor at all detained, by teaching to others what he has already learnt; at leaſt, not unprofitably detained; for if a boy be at the head of the firſt ſpelling claſs, it is clear that a delay of ſix or eight weeks, in teaching others what he has already learnt, will perfect him in his new acquirements, and rivet them in his memory. The extraordinary diſcipline, progreſs, and economy of this ſchool are, therefore, in a great meaſure, produced by an extraordinary number of non-commiſſioned officers, ſerving without pay, and learning while they teach."

Another recommendation of ſuch ſchools as we are deſcribing is, that every child is every moment employed. In the claſs aſſembled round the ſuſpended card for reading and ſpelling, the wand of the monitor pointing to a particular letter, the taking of places, the hope of obtaining an honorary ticket, muſt keep the children conſtantly on the alert. When they read, ſpell, and write, at the ſame time; or when the monitor dictates ſums, it is impoſſible for any individual to be inattentive. Such are the improvements in this mode of educating the poor; and they have been ſo completely carried into execution, that it is quite certain a thouſand boys may now be educated in reading, writing, and the firſt rules in arithmetic, by one perſon, at an expence not exceeding 300*l.* *per annum.* A more beautiful, a more orderly, and a more affecting ſcene than ſuch a ſchool, it is not poſſible to behold. The progreſs of the children is rapid beyond belief; and it evinces, in the moſt gratifying manner, the extraordinary effects which are produced upon the human mind by the art of cultivation.

We ſhall conclude with an extract from the "Account of the Female Eſtabliſhment of the Britiſh and Foreign School Society," publiſhed and diſtributed within theſe few days. The Britiſh and Foreign School Society is eſtabliſhed, to promote the education of the labouring and manufacturing claſſes of ſociety of every religious perſuaſion. It maintains ſchools on an extenſive ſcale for the education of children, according to the Britiſh ſyſtem. It alſo trains up young perſons of both ſexes to be teachers in ſchools, eſtabliſhed upon the Britiſh ſyſtem, both at home and abroad. The children are taught reading, writing, and arithmetic, and the girls uſeful needle-work, and the mode of cutting out garments. The leſſons for reading are taken from the holy Scriptures; the children are enjoined to a proper obſervance of the Sabbath, and they attend the places of worſhip to which their parents belong.

The management of the affairs belonging to the female department is entruſted to a committee of ladies, whoſe object in undertaking this duty is to endeavour to excite a general intereſt in the minds of the ſex, in behalf of the lower claſs of females. The benefits which may reaſonably be expected to ariſe from theſe efforts, if effectually ſupported, are incalculable.

The tendency of the Britiſh ſyſtem is to ſubject children to habits of order and obedience; it prepares the youthful mind to preſerve inviolate that ſubordination among the different ranks of ſociety, which forms the happineſs of each. Induſtry, diligence, punctuality, and attention, are neceſſary to the operations of the ſchool; and theſe qualities, ſo eſſential to the right diſcharge of all domeſtic duties, are interwoven in the diſcipline of education. The children are taught to obſerve all the relative and ſocial duties, and are prepared to obtain their livelihood by the

exerciſe

exerciſe of their talents in honeſt labour and uſeful employment.

Female ſchools have been organized on the Britiſh ſyſtem, (now, in the year 1815,) at

Birmingham,
Blandford,
Borough Road,
Bury St. Edmunds,
Briſtol,
Camberwell,
Chelſea,
Chertſey,
Cheſterfield,
Chicheſter,
Clewer,
Dudley,
Edinburgh,
Exeter,
Farnham,
Godalming,
Halifax,
Harlow,
Hitchin,
Ipſwich,
Launceſton,
Lewes,
Maidſtone,
Margate,
Mary-le-bone,
Middleton,
Newcaſtle,
Norwich,
Peckham,
Plymouth,
Renniſhaw,
Roſs,
Rotherham,
Sherborne,
Shrewſbury,
Swanſea,
Weymouth,
Whitby,
and
York.

Theſe ſchools collectively contain ſeveral thouſand female children, and it is truly gratifying to ſee mingled together, in unity as one family, the children born of parents of every religious denomination; who are taught alike to love and fear God, and reverence his holy word: they thus learn their duty to Him, to their neighbour, and to themſelves.

To judge with reaſon and candour concerning the reſult of this inſtitution, we are led to anticipate the general reformation of the female world. During the laſt few years, mankind have witneſſed with aſtoniſhment the wonderful rapidity with which education has been ſpread among the poor. Upon the ruins of neglect and ignorance, knowledge and virtue have erected their habitations. Many hearts, which would probably have been hardened in vice, are ſoftened and ameliorated by inſtruction; and inſtead of becoming burthens to themſelves, and aiding the growth of profligate habits in others, are made happy in their own feelings, and bleſſings to the public.

While contemplating theſe means for inſtructing the ignorant, it is with feelings of gratitude and thankfulneſs that it may be recorded, that of the many thouſand children of both ſexes, who have been educated during the laſt fifteen years in the Royal Free Schools in the Borough-road, no inſtance is known of even one having been charged with a criminal offence in any court of juſtice.

This fact ſpeaks more than volumes, and ought to animate every philanthropic mind in the benevolent employ of communicating inſtruction. At no period has the progreſs of knowledge been ſo accelerated by the higher orders of ſociety. The pious wiſh that firſt emanated from the heart of George III., that every poor child ſhould be taught to read the bible; after inſpiring the royal offspring, after reſting upon the next in rank, and inclining all to preſs eagerly forward with the precious boon of inſtruction, ſtill continues its animating influence.

Surely, many words cannot be neceſſary to recommend the education of girls. The moſt certain means of ſecuring the morals of a country is to poſſeſs a race of virtuous females. On the conduct of this ſex, of whatever rank, depends much of the harmony and happineſs of civilized life. Could all be made to love virtue, (and the ſteps now taking are the only methods likely to produce ſo deſirable an end,) vice, and miſery its inſeparable attendant, would flee abaſhed. Many of the lower claſs of females are vicious, *only* through ignorance and bad example. Much might be ſaid on the ſubject, to arouſe the feelings of the ſex of every claſs into an endeavour to reſcue the youthful part of it from degradation and guilt; but it is not neceſſary: for the dire train of evils aſſailing all ranks from ſuch a cauſe are unhappily too well known.

SCHOOLS *for Adults*. This being one of the laſt attempts at improvement among the poor, the account of it has been reſerved to the concluſion of the article on charity-ſchools. Dr. Pole, the hiſtorian of this inſtitution, obſerves, that "a few years ſince, it would have been deemed a whimſical and chimerical project to have collected a ſchool of perſons from twenty to eighty years of age, under the expectation of being able to teach them to read; and the man who ſhould have undertaken to effect this object, would have ſubjected himſelf to the ridicule of his neighbours. But happy will it be for tens of thouſands, I truſt I may ſay, that there are men whoſe benevolence has induced them to diſregard the ſneers of the ſcornful and incredulous, and make that experiment, which has been crowned with ſucceſs far exceeding their moſt ſanguine expectations, and opened a moſt cheering proſpect to our view, in the animating contemplation of the moral and religious benefits capable of reſulting from it." The inſtitution of ſchools for the education of adults was generally believed to have had, in this country, its origin at Briſtol; but it is now aſcertained that the firſt adult ſchools were eſtabliſhed in North Wales.

In a letter from B. Morgans, vicar of Trelech, near Monmouth, dated March 14, 1754, is the following certificate: "This is to certify, that I. T. kept a Welſh charity ſchool, in my pariſh, for three months paſt, with great ſucceſs. The ſcholars in all were about one hundred; ſeveral of them, before the expiration of the quarter, could ſpell and read pretty well; though they knew not the letters before. In a ſhort time after the ſchool was opened, I went to viſit it, and was agreeably ſurpriſed to ſee there an old man, ſeventy-one years of age, with five other people far advanced in years, who came there, with their little children, to be taught to read the word of God. Some of them were beginning their A, B, C; others could read a little. I examined the ſcholars ſeveral times. Some of their parents, when we had done, came to me with tears in their eyes, deeply concerned for their own ignorance, and with viſible joy for the improvement of their little children. They ſaid, their children uſed to aſk them queſtions, when they came from ſchool, which they could not anſwer till their children taught them."

It is alſo proved that the firſt ſchool, excluſively for the inſtruction of adults, was opened in North Wales, by the benevolent efforts of Thomas Charles, A.B., Epiſcopal miniſter of Bala, Merionethſhire. This commenced "in the ſummer of 1811." He obſerves, "We had no particular ſchool for their inſtruction *excluſively* till then, though many attended the Sunday ſchools with the children, in different parts of the country, previous to that time. What induced me firſt to think of eſtabliſhing ſuch an inſtitution, was the averſion I found in the adults to aſſociate with the children in their ſchools." This truly philanthropic man, by way of experiment, eſtabliſhed one excluſively for adults; and he ſays, "the firſt attempt ſucceeded wonderfully, and far beyond my moſt ſanguine expectation, and ſtill continues in a proſperous ſtate."

The report of the ſucceſs of this ſchool ſoon ſpread over the country, and, in many places, the illiterate adults began to inquire, and even call for inſtruction. The adults and children are ſometimes in the ſame room, but placed in different parts of it. When their attention is gained and fixed, they ſoon learn; their age ſeems to make but little difference, if they are able, by the help of glaſſes, to ſee the letters. In putting the plan into practice, ſays Mr. Charles, "as the adults have no time to loſe, we endeavour, before they can read, to inſtruct them without delay in the firſt principles of Chriſtianity. We ſelect a ſhort portion of Scripture, compriſing in plain terms the leading doctrines, and repeat them to the learners, till they retain them in their memories, and which they are to repeat the next time we meet."

To give a clear account of the commencement of adult ſchools in England, it is neceſſary to go back to the year 1804, when the Britiſh and Foreign Bible Society was founded in London. (See Society.) Subſequently to the formation of this inſtitution, auxiliary ſocieties were eſtabliſhed, the more effectually to carry into effect the beneficial purpoſes of the original inſtitution. One of theſe was formed in the city of Briſtol; and as the minds of its members were now employed in deviſing the beſt means of diſcovering thoſe individuals among the poor, who were not in poſſeſſion of the ſacred Scriptures, in order to ſupply them, it was found requiſite to eſtabliſh a ſubordinate inſtitution, chiefly compoſed of ſerious and well-inclined young men, of whom a committee divided the city in fifteen diſtricts, and appointed ſub-committees, whoſe buſineſs was to explore the ſtreets, the lanes, and the courts—to enter the habitations of the poor, the cottages of miſery, and the chambers of wretchedneſs. Among the almoſt unnumbered objects who excited their ſympathy and Chriſtian commiſeration, they met with many who could not read the bible. On the 13th of February 1812, at the anniverſary of the Briſtol Auxiliary Bible Society, a letter was read, in which a liſt was made out, containing the names of perſons who did not poſſeſs the holy Scriptures. This letter contained the following ſentence: "We have been neceſſarily obliged to omit a great number of poor inhabitants who could not read, and are therefore not likely to be benefited by the poſſeſſion of the bible." This attracted the attention, and awakened the commiſeration of Mr. William Smith, who from that moment ſet his heart to remedy the evil; and the next day he entered upon this new field of exertion. Having ſelected two friends, they went round among the poor of one of the out-pariſhes of Briſtol, to take down the names of thoſe who were willing to ſubſcribe ſmall weekly ſums, for purchaſing the bible at very reduced prices; rightly judging, that thoſe who purchaſe a book are more likely to take pains in reading it, than thoſe to whom it is given. Many individuals, to whom the application was made, replied, "I ſhould be very glad to have a bible, but it will be of no uſe to me; I cannot read." This led to the opportunity of aſking if they would like to learn to read, provided a ſchool were opened for the purpoſe. Almoſt all of them embraced the offer with expreſſions of pleaſure. Their names were immediately taken down, and the firſt man who entered his name on the liſts of learners was aged ſixty-three, and the firſt woman forty. Two rooms free of expence were obtained, and two perſons, who had been formerly employed in teaching in charity-ſchools for children, were applied to, and undertook to conduct the two ſchools, one for men, and one for women. Notice was now given among the poor of the ſame pariſh, that it was intended to open the propoſed ſchools on the eighth of the following month. On that day, that is, within three weeks of the time when the idea came into the founder's mind, the ſchools were opened with eleven men and ten women. The numbers quickly increaſed, until the rooms were filled. "The learners," ſays Dr. Pole, "ſoon evinced not only a deſire, but a capability, of learning; their progreſs was encouraging to themſelves and to the teachers; their conduct was orderly and becoming; their perſonal cleanlineſs beyond what might have been expected of people in very humble ſtations in life; they likewiſe demonſtrated no ſmall ſhare of gratitude for the friendly and benevolent exertions made for their benefit; and that too by individuals, to whom they could not have looked up with a hope of their becoming the benefactors of the poor. The ſucceſsful exertions of William Smith have proved him to be a well-wiſher to his country, and to mankind at large; and ſtrikingly evince to us, that neither an humble ſtation in life, nor the want of an extended education, preclude the ſincere Chriſtian from important uſefulneſs to his fellow-creatures. This eſtimable man, who, through Divine Providence, has been made ſo great a bleſſing to the indigent in ſociety, occupies a rank in life no higher than that of a door-keeper of a diſſenting chapel in this city, for a ſalary of eighteen ſhillings *per* week; out of which he pays three ſhillings, to have a part of his work done by another perſon, for the purpoſe of ſetting himſelf more at liberty to perform the duties dictated by that Chriſtian philanthropy which animates his heart, and guides his footſteps to the haunts of ſorrow, the abodes of ſickneſs and of want. This is the perſon who collected the learners, engaged the teachers, and opened the two firſt ſchools in England for inſtructing adults excluſively, in borrowed rooms, and with borrowed books. The ſucceſs attending this new undertaking was, unqueſtionably, moſt gratifying to the mind of Smith, and of thoſe humble individuals whom he inliſted in the ſervice: this encouraged him to look out for other apartments in the ſame neighbourhood, for the reception and inſtruction of thoſe who were daily coming forward with ſolicitations to be admitted as learners; as the deſire of learning to read the Scriptures was now ſpreading from ſtreet to ſtreet, and from pariſh to pariſh. Thus commenced the ſchools for adults in Briſtol, in the benevolent exertions of a poor, humble, and almoſt unlettered individual, whoſe example ſoon excited ſimilar feelings of Chriſtian philanthropy in the minds of many others, diſpoſed to patronize a deſign that affords a bright proſpect of advantage to the poor, as well as to the moral, political, and religious ſtate of the community at large; and which promiſes, under the direction of the Supreme Controller of events, to become a very important means of inculcating the great truths of Chriſtianity amongſt thoſe claſſes of our fellow-creatures, who have been hitherto unhappily neglected, and ſuffered to remain in a ſtate of lamentable degradation and moral turpitude."

In the courſe of a few weeks after the eſtabliſhment of the two firſt ſchools, a ſociety was formed by Mr. Smith, and other patriotic perſons, under the title of "An Inſtitution for inſtructing Adult Perſons to read the Holy Scriptures;" and within fourteen months from the commencement, there were nine ſchools opened for men, and the ſame number for women; during which, 601 men and women had been benefited by gratuitous inſtruction. The efforts of this ſociety having been attended with conſiderable ſucceſs, in reſpect to the progreſs made by learners, as well as, in many inſtances, in the evident improvement of their moral character, afforded no ſmall degree of encouragement to thoſe who had been employed in this new field of uſeful labour, and to the occaſional, but numerous, viſitors who came to the ſchools, either out of curioſity, or to gain the requiſite information as to their plans of proceeding, for the purpoſe of eſtabliſhing ſimilar inſtitutions in other parts of the country.

At the commencement of the year 1814, the ſchools in Briſtol were increaſed to twenty-one for men, and twenty-three for women, beſides two others out of the city; and the number of adults who had been admitted into them was more than 1500. There were likewiſe, in the ſame city, four other adult ſchools, not under the juriſdiction of the Briſtol Adult School Society, into which more than 300 perſons had been admitted.

“ From information received,” ſays Dr. Pole, “ it appears that adult ſchools are now opened in various parts of the nation; and according to accounts tranſmitted by perſons who have taken an intereſt therein, they are uniformly attended with the ſame ſucceſs as in this city. In moſt of the places where ſchools are eſtabliſhed, many perſons of opulence and influence have patronized the undertakings. In the town of Plymouth, in the county of Devon, a public meeting was convened, on the 14th of the 12th month laſt (1813), in the Town-hall, at which the mayor preſided: a conſiderable number of the moſt reſpectable inhabitants attended, which reſulted in a concluſion to eſtabliſh ‘ A Society for teaching the adult poor within the borough of Plymouth; and that the inſtitution ſhall alſo embrace thoſe of the riſing generation, who may have been apprenticed, or placed out, without being able to read.’ The requiſite ſteps for that purpoſe were reſolved upon, and a ſubſcription entered into. One ſchool is alſo opened at Bradnich, in the ſame county. Schools of this kind are likewiſe eſtabliſhed in London; Uxbridge, in Middleſex; Saliſbury; Sheffield, in Yorkſhire; Norwich and Yarmouth, in the county of Norfolk; Ipſwich, Bury, and Bungay, in Suffolk; in ſeveral parts of North Wales; at Swanſea, in Glamorganſhire, and ſome other places in South Wales.”

The conductors of the adult ſchools, who have had experience of their efficacy, are decidedly of opinion, that thoſe inſtitutions are not likely to laſt, in which the adults are mixed with children. Perſons of mature age will feel it particularly unpleaſant to expoſe their ignorance and awkwardneſs before the young, and will not long aſſociate in a place where there is a mixture of both claſſes. In the inſtruction of adults there are required, in an eſpecial manner, a ſoftneſs of manners, a patient forbearance with the weakneſs of ſome of their capacities, or the occaſional ſlowneſs of their comprehenſion. Zealous and perſevering endeavours to explain what they cannot at once underſtand, will gain their regard, and at the ſame time encourage their efforts to overcome difficulties; but an auſtere deportment, the uſe of authoritative language, or impatient rebuke, will have a diſcouraging tendency, and fruſtrate their laudable deſires, and the object of their own labours.

In the courſe of application for learners in Briſtol, ſome perſons have been found among the untaught poor, who evince a great averſion from attending the *public* ſchools open for their inſtruction; and hence it has been ſuggeſted by the poet Montgomery, that *private* ſchools might be formed in the dwellings of the poor, where ſmall companies of neighbours acquainted with each other might be collected, for the purpoſe of receiving inſtruction in a more private way, from teachers of ſuitable ages, and who may be agreeable to the learners. The plan has been tried, and proved ſucceſsful in Sheffield.

Such is the account of adult ſchools, chiefly extracted from Dr. Pole's “ Hiſtory of the Origin and Progreſs of Adult Schools,” which we earneſtly recommend to the notice of ſuch of our readers, as may require more ample information upon a ſubject, that cannot but be generally intereſting to thoſe who are anxious for the welfare and happineſs of their ſpecies. From private information we learn, that great attention is paid to the ſubject in America, and in divers parts of Germany; and a deſcendant of the celebrated Bayle is about to introduce ſchools for the adults in Picardy.

SCHOOL is alſo uſed for a whole faculty, univerſity, or ſect, as Plato's ſchool or *Academy* (which ſee), ſchool of the Cynics (ſee CYNICS and CYNOSARGES), the ſchool of Epicurus (ſee his biographical article), the ſchool of Ariſtotle (ſee ARISTOTLE and LYCEUM), the ſchool of Zeno, or porch of the Stoics (ſee STOICS and ZENO), &c. &c.

SCHOOL, in *Painting*, is uſed as a term to diſtinguiſh the different manners of places and perſons.

Thus we ſay, the Roman ſchool, the Venetian ſchool, the Flemiſh ſchool, &c. Raphael's ſchool, Titian's ſchool, Da Vinci's ſchool, &c. meaning their diſciples, pupils, &c.

SCHOOL *of Athens*, is the name of a celebrated piece of Raphael, now in the Vatican. It contains a great number of figures, repreſenting philoſophers, mathematicians, and other perſons engaged in the arts and ſciences.

Several authors have written of this painting, and given different explications of it. Vaſari will have it to be the agreement of philoſophy and aſtronomy with theology.

The engravers, by the inſcription they add at the bottom of the print of it, ſhew, that they take it for a painting of St. Paul preaching at Athens. And Auguſtine of Venice takes the philoſopher, who is writing, for St. Mark; and him at his knees, for the angel Gabriel. M. de Piles rejects all theſe explications of the ſchool of Athens, and eſpecially the laſt: his opinion is, that it is nothing more than an image of philoſophy, which Raphael here repreſents under all the philoſophers he has painted.

In behalf of the Venetian engravers it may be ſaid, that they do not pretend to explain the painting, but have only copied ſuch of the figures as they thought proper to repreſent, St. Mark, Gabriel, &c.

SCHOOL *Philoſophy* and *Theology*, &c. See SCHOLASTICS.

SCHOOLS, *Charity*. See CHARITY, and the preceding article *Charity* SCHOOLS.

SCHOOLS *of the Jews*. See JAMNIA, MASSORA, and TIBERIAS.

SCHOOLS *of the Prophets*. See *Sons of the* PROPHETS.

SCHOOLS *of the Saracens*. See SARACENS.

SCHOOL, or *College of Singers*, eſtabliſhed at Rome by St. Gregory. See COLLEGE, and *St.* GREGORY.

SCHOOLS *of Singing*, eſtabliſhed in England. See BEDE.

SCHOOLS *of Eccleſiaſtical Singing*, after the Roman manner, were eſtabliſhed by Charlemagne at Metz and Soiſſons; having obtained of pope Adrian, Theodore and Benedict, two chanters of great learning and abilities, who had been inſtructed by Gregory himſelf, to ſuperintend theſe ſchools. He likewiſe granted to them *Antiphonaria*, or choral books of that ſaint, which he had written himſelf in Roman notes.

At Canterbury, the ſucceſſors of St. Gregory, and of Auſtin his miſſionary, having eſtabliſhed a ſchool for eccleſiaſtical muſic after the Roman manner, the reſt of the iſland was furniſhed with maſters from that ſeminary. Indeed, Roman muſic and ſinging were as much in favour here, during the middle ages, when there were no operas, or artificial voices to captivate our countrymen, as Italian compoſition and performance are at preſent.

SCHOOL, or *Schooling*, in the *Manege*, is uſed to ſignify the leſſon and labour both of the horſe and horſeman.

A *ſchool pace*, or *gait*, denotes the ſame with *ecouté*.

SCHOOLMASTER. No perſon ſhall keep a ſchoolmaſter, who does not conſtantly go to church, or is not allowed by the ordinary, on pain of 10*l.* a month; and the ſchoolmaſter ſhall be diſabled, and ſuffer a year's impriſonment. Stat. 23 Eliz. cap. 1.

Recuſants are not to be ſchoolmaſters in any public grammar ſchool, nor any other, unleſs the perſons be licenſed by the biſhop, under the penalty of forfeiting 40*s.* a-day. B. Jac. I. c. 4.

By 17 Car. II. c. 2. no perſon ſhall be ſchoolmaſter, or take any boarders to be inſtructed by himſelf, or by any other, without taking an oath of allegiance therein mentioned, on pain of 40*l.*

Every ſchoolmaſter keeping any public or private ſchool, and every tutor in any private family, ſhall ſubſcribe the declaration, that he will conform to the liturgy of the church of England, as by law eſtabliſhed, and be licenſed by the ordinary, or he ſhall, for the firſt offence, ſuffer three months' impriſonment; for the ſecond and every other offence, be impriſoned three months, and forfeit 5*l.*, &c. 13 & 14 Car. II. c. 4.

For the exemption relating to Popiſh ſchoolmaſters, provided by ſtatute, ſee PAPIST and TOLERATION.

By 19 Geo. III. c. 44. no diſſenting miniſter, nor any other Proteſtant diſſenting from the church of England, who ſhall take the oaths, and ſubſcribe the declaration againſt Popery, and the other declaration enjoined by that act (ſee TOLERATION), ſhall be proſecuted in any court whatſoever, for teaching and inſtructing youth as a tutor or ſchoolmaſter: provided, that this ſhall not extend to the enabling any perſon, diſſenting from the church of England, to hold the maſterſhip of any college, or ſchool of royal foundation, or of any other endowed college or ſchool for the education of youth, unleſs the ſame ſhall have been founded ſince the firſt year of king William and queen Mary, for the immediate uſe and benefit of Proteſtant diſſenters.

SCHOONER, in *Sea Language*, a ſmall veſſel with two maſts and a bowſprit. The maſts rake aft, but the bowſprit lies nearly horizontal. On the bowſprit are ſet two or three jibs; on the foremaſt a ſquare foreſail; and abaft the foremaſt a gaff or boomſail; and above thoſe a topſail: abaft the mainmaſt ſet a boomſail, and above it a topſail. The main-ſtay leads through a block, at the head of the foremaſt, and ſets up upon the deck by a tackle. By theſe means the ſail abaft the foremaſt is not obſtructed, when the veſſel goes about, as the peak paſſes under the ſtay. Schooners ſail very near the wind, and require few hands to work them. Their rigging is light, ſimilar to that of a ketch, and the topmaſts fix in iron rings, abaft the lower maſt-heads.

SCHOONHOVEN, in *Geography*, a town of Holland, ſituated on the N. ſide of the river Leek; deriving its name either from its good gardens or good harbour. It holds a fourth rank among the ſmall cities which had a voice in the ſtates of Holland. Its magiſtracy conſiſts of three burgomaſters and ſeven echevins, the term of whoſe ſervices cannot be longer than three years. It is remarkable for its large quantity of ſalmon, and ſtill more diſtinguiſhed by the conduct of its commander in 1424, whoſe name was Albert Beyling, who being obliged to ſurrender, on condition that all the lives of fifty men that defended it ſhould be ſaved, that of the commander excepted; this brave man, deſiring ſome reſpite, was allowed a month for ſettling his affairs; and having done this, he returned and ſubmitted to his ſentence, in order to vindicate his honour, and ſo reflecting everlaſting diſgrace on his enemies.

SCHOOTEN, FRANCIS, in *Biography*, an eminent Dutch mathematician, flouriſhed between the years 1627 and 1659. He was profeſſor of mathematics at Leyden, and was one of the firſt who adopted the geometry of Deſcartes, upon which he wrote a commentary. He firſt tranſlated the work into the Latin language, and then publiſhed it with comments. This was in the year 1649. Ten years afterwards he prepared a new edition, to which were added many intereſting pieces; *viz.* the notes of M. de Baune; two letters of Hudde on the reduction of equations, and the maxima and minima; one by Van Heuraet on the rectification of curves; two poſthumous letters of M. de Baune on the nature and limits of equations; and the elements of curves, by De Wit. To the whole is ſubjoined a poſthumous work of his own, entitled "De concinnandis Demonſtrationibus Geometricis ex calculo Algebraico." According to Montucla, this work was generally approved, as containing every thing neceſſary for underſtanding the Geometry of Deſcartes, without that prolixity which is too frequent among commentators. Schooten was the author of a treatiſe, "De Organica Sectionum Conicarum in Plano Deſcriptione," in which he teaches the various methods of deſcribing conic ſections by one continued motion. Schooten publiſhed alſo "Exercitationum Mathematicarum Libri quinque," containing among other things, a hundred arithmetical and geometrical propoſitions; the conſtruction of ſimple geometrical problems: "Sectiones Miſcellaneæ triginta, quibus accedit Chriſtiani Hugenii Tractatus de Ratiociniis in Aleæ Ludo."

SCHOOUBIAH, a ſect among the Muſſulmen, whoſe diſtinguiſhing tenet it is, that the Sonnites are not at all preferable to the Shiites, or Rafadhites, *i. e.* the orthodox to the heterodox, but that both the one and the other are equally true believers.

The Schooubiah, therefore, ſhould be, properly, the latitudinarians in Mahometaniſm; yet are they not regarded by either party as much better than gentiles or heathens, as their name in that language imports.

There are many among the Muſſulmen, who give into this ſect, only ſecretly; Mahometaniſm, like all other falſe religions, being an avowed enemy to toleration.

SCHOP, JOHN, in *Biography*, one of the firſt great players on the violin in Germany, who, in 1640 and 1644, publiſhed Paduanas, Galliards, Allemands, and thirty Concertos for violins; that is, according to the acceptation of the word. *Concerto*, at that time, implied vocal compoſitions *concertale*, or accompanied by violins and other inſtruments.

SCHOPFHIM, or SCHOPFEN, in *Geography*, a town of Baden, on the Vieſe; 14 miles N.E. of Bâle.

SCHOPKA, a river of Bohemia, which runs into the Elbe, near Melnik.

SCHOPLENREITH, a town of Auſtria, at the conflux of the Marſch with the Danube; 16 miles E. of Entzerdorff.

SCHOPP, in *Commerce*, a liquid meaſure at Francfort. See STUCK.

SCHOPPACH, in *Geography*, a river which runs into the Kintzig, near Wolffach.

SCHOPPERNAU, a town of the county of Bregentz; 27 miles S.E. of Bregentz.

SCHOPPINGEN, a town of Germany, in the biſhopric of Munſter; 4 miles W. of Horſtmar.

SCHORGAST, LUDWIG, a town of Bavaria, in the biſhopric of Bamberg; 28 miles N.E. of Bamberg. N. lat. 50° 8′. E. long. 11° 39′.

SCHORGAST, *Markt*, a town of Bavaria, in the biſhopric of Bamberg; 34 miles E.N.E. of Bamberg. N. lat. 50° 5′. E. long. 11° 45′.

SCHORIMENTHOF, a river of Sileſia, in the province of Oppau, which riſes about two miles W. from Weigſtedtel, and runs S. into the Oder.

SCHORL, in *Mineralogy*, a mineral which is ſaid to have derived its name from Schorlaw, in Saxony, where it was firſt obſerved. No word has been uſed by mineralogiſts with more latitude than ſchorl: according to Cronſtedt it denotes any ſtone of a columnar form, with great hardneſs, and a ſpecific gravity from 3 to 3.4. Werner firſt defined the word ſchorl preciſely, and reſtricted it to one ſpecies of ſtones. It occurs commonly in granite, gneiſs, and ſimilar rocks. The colour of common ſchorl is velvet-black; it is found both in maſſes and cryſtallized. The cryſtals are three-ſided priſms, having their lateral edges truncated, and are moſtly long and ſlender, and are either aggregated in parallel or diverging concretions. The fracture is imperfectly conchoidal; it is opaque, and fuſible into a black glaſs. The hardneſs is ſomewhat inferior to quartz. Haüy claſſes common ſchorl as a variety of tourmaline, (ſee TOURMALINE,) owing to the preſence of iron. Schorl does not always acquire electricity by being heated, which is the caſe with tourmaline.

The conſtituent parts of ſchorl, as given by Gerhard, are,

Silex - - - - - -	38
Alumine - - - - -	20
Lime - - - - - -	20
Oxyd of iron and manganeſe -	19
Loſs - - - - - -	3
	100

SCHORLACEOUS BERYL. See PYCNITE.

SCHORNDORF, in *Geography*, a town of Wurtemberg, on the Rems; 28 miles N.N.W. of Ulm. N. lat. 48° 45′. E. long. 9° 37′.

SCHORNFELD, a town of Bavaria, in the principality of Aichſtatt; 4 miles W.N.W. of Aichſtatt.

SCHORN-PENY. See SCHAR-PENY.

SCHOROGALSKOI, in *Geography*, a town of Ruſſia, in the government of Irkutſk, on the borders of China; 60 miles S. of Selenginſk.

SCHOSBERG, a town of Hungary; 17 miles N. of Preſburg.

SCHOTANUS, CHRISTIAN, in *Biography*, an hiſtorical writer, was born in 1603, at Scheng, a village in Friſeland. He was choſen profeſſor of Greek and eccleſiaſtical hiſtory at Franeker, as well as one of the miniſters of that place. He died in 1671. His principal works were, "A Deſcription of Friſeland," with plates; "A Hiſtory of Friſeland," to the year 1558: theſe are both in the Dutch language: "Continuatio Hiſtoriæ Sacræ Sulpitii Severi;" "Bibliotheca Hiſtoriæ Sacræ Veteris Teſtamenti, ſive Exercitationes in hiſtoriam ſacram Sulpitii Severi et Joſephi," in 2 vols. folio.

SCHOTIA, in *Botany*, named in commemoration of the botanical zeal and acuteneſs of Mr. Richard van der Schot, formerly curator of the royal Schönbrun gardens at Vienna, and the companion of Jacquin in his travels through America.—Jacq. Collect. v. 1. 93. Schreb. 279. Willd. Sp. Pl. v. 2. 537. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 3. 33. Juſſ. Gen. 347. Lamarck Illuſtr. t. 331. (Theodora; Medic. Monogr. 1786.)—Claſs and order, *Decandria Monogynia*. Nat. Ord. *Lomentaceæ*, Linn. *Leguminoſæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, coloured, permanent; tube turbinate, rather compreſſed, fleſhy; limb cloven half way down into five, ovate, concave, obtuſe, erect, equal ſegments. *Cor.* Petals five, inſerted into the tube of the calyx, oblong, concave, obtuſe, erect, equal, lying laterally over each other, ſeſſile, twice as long as the ſegments of the calyx. *Stam.* Filaments ten, awl-ſhaped, erect, a little longer than the petals, placed circularly in the tube of the calyx; anthers oblong, incumbent. *Piſt.* Germen ſuperior, oblong, compreſſed, ſtalked; ſtyle thread-ſhaped, the length of the ſtamens; ſtigma ſimple, obtuſe. *Peric.* Legume ſtalked. *Seeds* two.

Eſſ. Ch. Calyx tubular, five-cleft. Petals five, inſerted into the calyx, lying over each other at their edges, converging. Legume ſtalked.

1. S. *ſpecioſa*. Maſtick-leaved Schotia. Willd. n. 1. Ait. n. 1. Jacq. Ic. Rar. v. 1. t. 75. Andr. Bot. Repoſ. t. 348. (Guiacum afrum; Linn. Sp. Pl. 547.)—Leaves pinnate, compoſed of from ſeven to ten pair of oval-lanceolate, pointed leaflets. Stipulas awl-ſhaped.—Native of Senegal; and the Cape of Good Hope, near Moſſel-bay. It flowers at Kew from July to December. A tufted, evergreen *ſhrub* about three feet high, of very handſome growth, with round, rigid, diffuſe *branches*; a grey or browniſh *bark*; and firm white *wood*. *Leaves* alternate, equally pinnate; leaflets ſometimes alternate, ſometimes oppoſite, entire, pointed, ſhining. *Stipulas* ſmall, deciduous; a very ſmall, purple one is attached to the baſe of each leaflet. *Flowers* forming a rich cluſter, of a bright pink or ſcarlet colour, like the calyx and flower-ſtalk. The *fruit* does not ripen here.

2. S. *tamarindifolia*. Tamarind-leaved Schotia. Ait. n. 2. Sims in Curt. Mag. t. 1153.—Leaves pinnate, compoſed of from eight to ten pair of oval, rather obtuſe, leaflets, either with or without points, rather gibbous at the baſe on the upper ſide.—Introduced at Kew in 1795, from the Cape of Good Hope, by Mr. Francis Maſſon. It flowers in June and July.—In habit, this ſpecies greatly reſembles the laſt; from which however it is made diſtinct on the authority of Mr. Afzelius. The *leaflets* of this are conſiderably broader, more obtuſe, not ſo conſtantly pointed, their internal margin hollowed ſo as to render them ſlightly kidney-ſhaped. *Legume* large, broad, extremely flattened, much arched, with a remarkably thick margin at both ſutures, veined on the ſides with an elegant net-work. The *flowers* are ſomewhat darker, but equally beautiful with the *ſpecioſa*.

3. S. *ſtipulata*. Large-ſtipulated Schotia. Ait. n. 3.—Leaves pinnate, compoſed of five pair of oval, acute, pointed leaflets. Stipulas deeply divided into two, oval, ſickle-ſhaped, pointed ſegments. Introduced at Kew, in 1794, by Mr. F. Maſſon, from the Cape of Good Hope. It flowers from June to Auguſt.

We know nothing of this laſt ſpecies but from the *Hortus Kewenſis*, as quoted above. In the Botanical Magazine, under t. 1153, another ſpecies is mentioned as being in the Bankſian Herbarium, "with four pair of obcordate leaflets, and a legume much leſs curved than that of *S. tamarindifolia*."

SCHOTIA, in *Gardening*, affords a plant of the evergreen ſhrubby greenhouſe kind, of which the ſpecies cultivated is the lentiſcus-leaved ſchotia (S. ſpecioſa).

Method of Culture.—This is a plant which is moſt commonly increaſed by laying down the young branches during the ſummer ſeaſon, which may be taken off in the following ſpring after they have ſtricken full root, and be then planted out into ſeparate pots of light earth, and placed in a moderate hot-bed or ſtove until well rooted again; after which the pots of young plants may be put under the ſhelter of a greenhouſe for the winter ſeaſon, and ſet out with others of ſimilar kinds in the ſummer months. In this way they afford variety and ornament.

SCHOTT, ANDREW, in *Biography*, a learned Jeſuit, was born at Antwerp in 1552. He ſtudied at Louvain, and was for ſome time in the family of the famous Buſbequius at Paris, where he formed connections with ſome of the moſt eminent literary characters. He afterwards viſited Spain, and reſided ſome years with the archbiſhop of Tarragona, from whoſe houſe he entered into the order of the Jeſuits in 1586. He taught Greek at ſeveral of their colleges, and was at length made profeſſor of eloquence at Rome. Returning to Antwerp, he paſſed his remaining years in learned labours, and died in 1629. As a man, he poſſeſſed an open and liberal diſpoſition, taking pleaſure at all times in obliging men of letters, without any reſpect to their country or opinions. He was diſtinguiſhed for his deep knowledge of the Greek, and publiſhed ſeveral works of the philological claſs. He gave an edition of Photius, with a Latin verſion and notes; likewiſe editions of ſeveral of the fathers, enriched with notes and commentaries on a number of ancient writers. He wrote biographical accounts of St. Francis of Borgia; Ferdinand Nunez; James Laynez; and Peter Ciaconius; and was author of a work entitled "Hiſpania illuſtrata," 4 vols. fol.

SCHOTT, GASPARD, a Jeſuit, famous for his diſcoveries in natural and experimental philoſophy, was born in 1608, in the dioceſe of Wurtzburg. He paſſed ſeveral years at Palermo, whence he removed to Rome, where he contracted an intimacy with the celebrated Kircher, who communicated to him ſeveral of his obſervations on the arts and ſciences. Schott was author of ſeveral works, of which the moſt remarkable are, 1. "Phyſica curioſa; ſive Mirabilia Naturæ et Artis;" 2. "Magia naturalis et artificialis," four vols. 4to.; 3. "Technica curioſa;" in this work is found the firſt idea of the air-pump; 4. "Anatomia Phyſico-hydroſtatica Fontium et Fluminum;" 5. "Organum Mathematicum." In the various writings of this Jeſuit are to be met with the germs of the greater part of modern experiments in phyſics. His name was, neverthelefs, entirely forgotten, till it was brought to notice in 1785 by the abbé Mercier, in his *Notice Raiſonée*.

SCHOTT, in *Geography*, a town of Pruſſia, in Oberland; 9 miles N.N.E. of Soldau.

SCHOTTEN, a town of Heſſe; 16 miles E.S.E. of Gieſſen.

SCHOTZOU, a town of Sileſia, in the duchy of Teſchen; 12 miles S.E. of Teſchen.

SCHOUG, one of the Carolina or New Philippine iſlands.

SCHOUNBERG, a town of Weſtphalia, in the Harz foreſt, near which is a ſilver-mine.

SCHOUNG, a town of the duchy of Wurzburg; 4 miles E. of Schweinfurt.

SCHOUSBOEA, in *Botany*, ſo denominated by Willdenow, in honour of Mr. Schouſboe, a celebrated botaniſt, who has made many botanical diſcoveries in his travels, between the years 1790 and 1793, through the kingdom of Morocco, where he reſided as Daniſh conſul. An account of theſe diſcoveries, with a few plates, has appeared at Copenhagen and Leipſic, in 1801.—Willd. Sp. Pl. v. 2. 578. (Cacoucia; Aubl. Guian. v. 1. 450. Juſſ. 320. Lamarck Illuſtr. t. 359.)—Claſs and order, *Decandria Monogynia*. Nat. Ord. *Calycanthemæ*, Linn. *Onagræ*, Juſſ.

Gen. Ch. *Cal.* Perianth ſuperior, of one leaf, bell-ſhaped, five-toothed, coloured, deciduous. *Cor.* Petals five, elliptic-lanceolate, acute, equal, inſerted between the teeth of the calyx. *Stam.* Filaments ten, thread-ſhaped, twice the length of the calyx, and inſerted into its lower part; anthers ovate, of two cells. *Piſt.* Germen inferior, oval, furrowed; ſtyle thread-ſhaped, the length of the ſtamens; ſtigma acute. *Peric.* Berry oval, with five angles, of one cell. *Seed* ſolitary, with a membranous tunic.

Eſſ. Ch. Calyx ſuperior, bell-ſhaped, five-cleft, bearing the corolla. Petals five. Berry with five angles. Seed ſolitary, tunicated.

1. S. *coccinea*. Willd. n. 1. (Cacoucia coccinea; Aubl. t. 179.)—Gathered by Aublet, on the banks of the Sinemari river, in Guiana, twenty leagues from its mouth. The *ſtem* is ſhrubby, ſix or ſeven inches in diameter at the bottom, climbing, by long twining branches, to the tops of lofty trees, from whence the extremities of thoſe branches, laden with leaves and flowers, are pendulous. *Leaves* alternate, on ſhort ſtalks, ſmooth, firm, rigid, oval, pointed, entire, four or five inches long, with one rib, and many tranſverſe veins. *Spikes* terminal, ſolitary, long, many-flowered. *Bracteas* lanceolate, acute, green, nearly as long as the flowers. *Calyx* green at the baſe; of a coral red in the upper part. *Petals* veiny, red as well as the *ſtamens*. *Berry* an inch and half long, pointed, yellow, pulpy.

The Galibis are accuſtomed to rub the noſes of their dogs with this fruit, when they go to hunt, thinking it renders their ſenſe of ſmelling more acute. The genus is akin to *Fuchſia*. The flowers and fruit are both to be found in October.

SCHOUTEN'S ISLAND, in *Geography*, an iſland in the Eaſt Indian ſea, diſcovered by a Dutchman of that name; 120 miles in circumference. S. lat. 0° 50′. E. long. 136° 20′.

SCHOUTEN'S *Iſlands*, an archipelago of iſlands, near the E. coaſt of New Holland, about 50 miles in circumference. S. lat. 43° 12′. E. long. 148° 9′.

SCHOUWEN, or SCHOWEN, an iſland belonging to Holland, at the mouth of the Scheldt, N.E. of the iſland of Walcheren; 14 miles from E. to W. and 5 from N. to S. The chief town is Ziricſee.

SCHOWENFLIET. See SCHONFLIES.

SCHRADERA, in *Botany*, was dedicated by Vahl to the honour of profeſſor Henry Adolphus Schrader of Gottingen, author of a *Flora Germanica*, and many learned works, eſpecially relating to cryptogamic productions; nor was ever any ſuch honour more richly deſerved.—Vahl. Ecl. v. 1. 35. Willd. Sp. Pl. v. 2. 238. Mart. Mill. Dict. v. 4. —Claſs and order, *Hexandria Monogynia*. Nat. Ord. *Aggregatæ*, Linn. *Caprifolia*, Juſſ.

Gen. Ch. *Cal.* General Involucrum of one leaf, coriaceous, containing ſeveral flowers. Perianth ſuperior, of one leaf, cup-ſhaped, permanent. *Cor.* of one petal, ſucculent, tubular; tube much longer than the calyx, cylindrical, ſcarcely curved; limb in from five to eight, or ten, lanceolate, fleſhy ſegments, ſomewhat reflexed, compreſſed and triangular at the extremity, with a tooth on each ſide; throat hairy. *Stam.* Filaments ſcarcely any; anthers linear, as many as the ſegments of the corolla, one-third their length, and inſerted between them. *Piſt.* Germen inferior, oblong, quadrangular at the baſe; abrupt; ſtyle ſhorter than the tube of the corolla; ſtigma in four deep, erect, converging ſegments. *Peric.* Berry oblong, crowned with the perianth, of four cells. *Seeds* numerous, angular, minute.

Eſſ. Ch. General involucrum many-flowered. Perianth ſuperior, cup-ſhaped. Corolla tubular, hairy in the throat;

limb in ſeveral ſegments. Anthers nearly ſeſſile, between the ſegments. Berry with many ſeeds.

1. S. *capitata*. Willd. n. 1. Vahl. Ecl. t. 5.—"Involucrum toothed. Calyx entire. Leaves obtuſe."—Native of the iſland of Montſerrat. A climbing paraſitical *ſhrub*; with ſquare greyiſh *branches*. *Leaves* oppoſite, ſtalked, elliptical or roundiſh, entire, bluntiſh, coriaceous. *Flower-ſtalks* terminal, ſolitary, an inch and half long. *Flowers* capitate, about fifteen, their *involucrum* coriaceous, with five roundiſh obtuſe ſegments. Margin of the partial *calyx* abrupt and entire. The number of *ſtamens*, as well as of the ſegments of the *corolla*, varies from five to ſix. Vahl confounded this with the following, but Willdenow, at the ſuggeſtion of Swartz, has juſtly diſtinguiſhed them.

2. S. *cephalotes*. Willd. n. 2. (Fuchſia involucrata; Swartz Ind. Occ. v. 2. 674.)—"Involucrum entire. Calyx toothed. Leaves pointed."—Native of woody hills, in the interior of Jamaica, flowering at all times of the year. This is alſo a *ſhrub* of a climbing and partly paraſitical nature. The *leaves* are thickiſh, pointed, ſmooth; paler beneath. *Flower-ſtalks* terminal, ſolitary, ſhort, thick, quadrangular. *Involucrum* abrupt, ſmooth, thick, quadrangular, containing from four to eight *flowers*. *Perianth* rather longer than the involucrum, undivided and ſomewhat abrupt, with eight very minute teeth. *Corolla* white, ſucculent, many times longer than the calyx, ſlightly curved; its limb uſually having eight ſegments, but varying from five to nine, or even ten. *Stamens* agreeing in number with the ſegments, and half as long; *anthers* burſting lengthwiſe towards the *ſtigma*. *Berry* ſoft, ſweetiſh, inſipid, with brown *ſeeds*.

The *branches*, when broken, and the *flowers* in fading, exhale a nauſeous ſmell, like fermenting cabbage. *Swartz*.

SCHRAETSER, in *Ichthyology*, the name of a fiſh very common in the Danube, and in many things reſembling our ruff, or ſmall gilded pearch.

Its common ſize is about three inches in length; its tail is forked, and its back-fin is ſupported by thirty rays or nerves, eighteen of which are rigid and prickly, and thoſe which ſtand behind them ſoft and flexile. The upper jaw has a membrane ſomewhat like a lip, which hangs from it, and the coverings of the gills terminate in a ſpine or prickle. The membrane of the back-fin is variegated with black ſpots, and its general colour is ſomewhat paler than that of the pearch. It is a very well-taſted fiſh. It is a ſpecies of the *Perca*; which ſee.

SCHRALENBURG, in *Geography*, a town of New Jerſey; 4 miles N.N.E. of Hackinſack.

SCHRAMBERG, a town of Germany, in the county of Hohenberg, on the Schiltach; 10 miles N.W. of Rothwell. N. lat. 48° 11′. E. long. 8° 22′.

SCHRANKIA, in *Botany*, was named by Willdenow in honour of Francis von Paula Schrank, Profeſſor of Œconomy and Botany at Ingolſtad, author of Primitiæ Floræ Saliſburgenſis, and various other botanical, as well as zoological tracts.—Willd. Sp. Pl. v. 4. 1041. Ait. Hort. Kew. v. 5. 456. Purſh 305.—Claſs and order, *Polygamia Monoecia*; or rather *Decandria Monogynia*. Nat. Ord. *Lomentaceæ*, Linn. *Leguminoſæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, minute, tubular, with five erect teeth, deciduous. *Cor.* Petals five, erect, lanceolate, inſerted into the tube of the calyx, alternate with its teeth. *Stam.* Filaments ten, capillary, flaccid, inſerted into the tube of the calyx, twice as long as the corolla, ſomewhat unequal; anthers verſatile, roundiſh, incumbent. *Piſt.* Germen ſuperior, oval, ſlightly compreſſed; ſtyle thread-ſhaped; ſtigma obtuſe. *Peric.* Legume oblong, quadrangular, of one cell and four valves, the two oppoſite ones rather the ſhorteſt. *Seeds* numerous, quadrangular, compreſſed, in a ſingle row.

Some flowers are four-cleft; others are male only, on the ſame tree.

Eſſ. Ch. Calyx inferior, with five teeth. Petals five, inſerted into the calyx. Legume of four valves, with many ſeeds. Some flowers male.

Authors who have undertaken to divide the great Linnæan genus of *Mimoſa*, have formed this out of it, with ſeveral others, of which the moſt ill-characterized are *Deſmanthus* and *Acacia* of Willdenow. The preſent may perhaps be admitted, as well as *Inga* of the ſame author, both being well diſtinguiſhed by their fruit. Three ſpecies of *Schrankia* are deſcribed, all ſaid to be ſenſitive in their ſoliage, like the original *Mimoſæ*, which Willdenow obſerves not to be the caſe with any *Inga* or *Acacia*, though in ſome *Deſmanthi*. See MIMOSA.

1. S. *aculeata*. Vera Cruz Schrankia. Willd. n. 1. Ait. n. 1. (Mimoſa quadrivalvis; Linn. Sp. Pl. 1508. Mill. Ic. t. 182. f. 1. Banks Rel. Houſt. 11. t. 25.)—General leaflets two or three pair. Stem with four angles. Very frequent in all the ſandy ground about Vera Cruz, according to Houſtoun, who ſent ſeeds to England, which, Miller ſays, ſucceeded in ſeveral gardens. The plant is herbaceous and perennial, requiring to be kept in a ſtove, where it bloſſoms in the ſummer months. The *root* is tuberous, as in the whole genus. *Stems* weak and trailing, but little branched, ſquare, zigzag, leafy, armed with numerous, compreſſed, hooked prickles, as are all the *ſtalks* and *ſeed-veſſels*. *Leaves* abruptly doubly pinnate; their primary *leaflets* two or three pair, each of numerous pairs of crowded, imbricated, ſimple, elliptic-oblong, entire *leaflets*, each half an inch long. *Flowers* very numerous, in globoſe, axillary, ſolitary, rather long-ſtalked heads, of a beautiful red, with yellow *anthers*. Each head perfects but two or three acute, ſtraight, ſpreading *legumes*, (as they are by analogy called,) about two inches long.

2. S. *hamata*. Beaked Schrankia. Willd. n. 2.—General leaflets four pair. Legume with a pointed beak. Stem with five angles. Flower-ſtalks very ſhort.—Gathered by Humboldt and Bonpland in South America. Herbaceous, covered with hooked prickles. Heads of *flowers* on very ſhort ſtalks. Each valve of the *legume* is armed with a triple row of denſely crowded prickles. The ultimate *leaflets* are linear, not elliptical.

3. S. *uncinata*. Hooked Schrankia. Willd. n. 3. Ait. n. 2. Purſh n. 1. (Mimoſa horridula; Michaux Boreali-Amer. v. 2. 254. Venten. Choix de Plantes, t. 28. M. microphylla; Sm. Inſ. of Georgia, v. 2. 123. t. 62. M. *Intſia*; Walt. Carol. 252.)—General leaflets five to ſeven pair. Legume pointed. Stem with five angles. Flower-ſtalks longer than the footſtalks.—In old fields and meadows, from Virginia to Florida, flowering in June and July. It is known by the name of Senſitive Briar. *Purſh*. This ſpecies reſembles the two former in habit, but the primary diviſions of the *leaves* are much more numerous. The *flowers* are of a fine roſe-colour, with yellow *anthers*, and ſtand on long prickly *ſtalks*, ſometimes two together. *Legume* beſet with denſe rows of prominent prickles.

SCHRANNEN, in *Geography*, a town of Pruſſia, in the palatinate of Culm; 8 miles N.E. of Straſburg.

SCHRAPLAU, a town of Weſtphalia, in the county of Mansfeld; 6 miles S.E. of Eiſzleben.

SCHRATCHELL'S BAY, a bay at the W. extremity of the Iſle of Wight.

SCHRATTENTHAL, a town of Auſtria; 15 miles W. of Laab. N. lat. 48° 40′. E. long. 15° 51′.

SCHREBERA, in *Botany*, ſo named in commemoration of the very eminent John Chriſtian Daniel von Schreber, Profeſſor of Medicine, Botany, Natural Hiſtory and Rural Economy in the univerſity of Erlang, and Preſident of the Imperial Academy Naturæ Curioſorum. His Spicilegium Floræ Lipſicæ; diſſertation de Phaſco; deſcriptions of Graſſes in German, with excellent plates; edition of the Genera Plantarum of Linnæus; and various other works, rank him among the moſt acute, as well as moſt learned, botanical writers. He was one of the conſtant friends and correſpondents of Linnæus; a man of no leſs candour than information; and died univerſally reſpected, a very few years ſince, at an advanced age, having been born in 1739. The original *Schrebera*, Linn. Gen. 124, was founded on one of the moſt curious miſtakes ever made by a naturaliſt, the authentic ſpecimen proving nothing more than a *Cuſcuta*, growing on *Myrica æthiopica*. See its figure and deſcription in Nov. Act. Upſ. v. 1. 91. t. 5. f. 1. This genus had puzzled many a botaniſt, and ſeveral different things had been referred to it. On the diſcovery of the above error, Retzius attempted to eſtabliſh a new *Schrebera*, in his Obſ. faſc. 6. 25. t. 3; and this is adopted by Willdenow, in Sp. Pl. v. 1. 1092. But it proves a ſpecies of a genus previouſly eſtabliſhed, *Elæodendron*. Such being the caſe, the late Mr. Dryander has conferred the name of *Schrebera* on an undoubtedly new, and very fine Eaſt Indian genus, with which we truſt it will permanently remain.—Roxb. Coromand. v. 2. 1. Mart. Mill. Dict. v. 4.—Claſs and order, *Diandria Monogynia*. Nat. Ord. *Jaſmineæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, tubular, its orifice with about five unequal, upright teeth. *Cor.* of one petal, ſalver-ſhaped; tube cylindrical, pervious, thrice the length of the calyx; limb flat, in five, occaſionally ſix or ſeven, deep, wedge-ſhaped, abrupt, equal ſegments. *Stam.* Filaments two, very ſhort, inſerted about the middle of the tube of the corolla; anthers erect, heart-ſhaped, concealed within the tube. *Piſt.* Germen ſuperior, ovate; ſtyle thread-ſhaped, ſomewhat longer than the tube; ſtigma cloven. *Peric.* Capſule large, obovate, woody, of two cells and two valves; the partitions from the centre of each valve. *Seeds* four in each cell, in two rows, oval, oblique, compreſſed, with a large, lateral, ovate, membranous wing.

Eſſ. Ch. Corolla ſalver-ſhaped; with abrupt ſegments. Capſule woody, of two cells and two valves. Seeds four in each cell, winged.

1. S. *Swietenioides*. Roxb. Coromand. t. 101.—Native of vallies in the mountainous parts of the Rajahmundry Circar, in Hindooſtan, flowering about the beginning of the hot ſeaſon. A large, upright, timber *tree*, with rough *bark*; the *wood* grey, very cloſe-grained, heavy and durable. This *wood*, being reckoned leſs ſubject to crack, or warp, than any other, is employed by weavers in India, for many parts of their looms, particularly the beam. It ſerves alſo for a great variety of other uſes; and Dr. Roxburgh was inclined to think it would anſwer well for ſcales to mathematical inſtruments; for though not ſo handſome as box, it is not ſubject to warp. The *branches* of this tree are numerous, ſpreading in every direction, ſo as to form a large, handſome, umbrageous head. *Leaves* nearly oppoſite, ſtalked, pinnate, about a foot long, compoſed of three or four pair, with an odd one, of ſtalked, ovate, pointed, entire, ſmooth *leaflets*, which are individually not unlike the leaves of lilac, *Syringa vulgaris*, in ſize, form, and appearance; the upper ones gradually ſmaller, and rather narrower. *Panicles* terminal, three-forked, ſpreading, much ſhorter than the leaves; their ſtalks round, ſmooth, with ſmall, awl-ſhaped, deciduous *bracteas* under each ſubdiviſion. *Flowers* not very numerous, highly fragrant during the night, about the ſize of common Jaſmine; whitiſh externally; the upper ſide of the limb variegated with brown. *Capſule* the ſize of a pullet's egg, rough, thick, and very hard, ſplitting open when ripe and dry, and bearing ſome reſemblance, eſpecially with its winged *ſeeds*, to the fruit of *Swietenia*, the Mahogany, whence originated the ſpecific name, a barbarous compound, which, with all deference to its learned and lamented author, we cannot approve.

SCHRECKENBERG, in *Geography*, a mountain of Germany, in the territory of Erzgebirg, celebrated for its ſilver-mines, near Annaberg.

SCHRECKHORN, or *Peak of Terror*, a mountain of Switzerland, in the S.E. part of the canton of Berne; 11 miles S.S.E. of Interlacken. This peak riſes between the two glaciers of Grindelwald, concealed by its baſe, the Mettenberg: it is not far from the valley of Grindelwald, and the rugged paths which lead acroſs the ſuperior glacier to its foot are extremely difficult and dangerous: part of it is obſerved from that glacier. The tops of the Mettenberg are of granite, and the lower parts of lamellated rock, blended with mica and quartz. The piked ſummits of the Schreckhorn, which riſe to an enormous height, *viz.* 13,397 feet, appear to be of pure granite and other primitive ſtones.

SCHREIDER of London, in *Biography*, organ-builder to his majeſty at the beginning of the laſt century.

SCHREKENSTEIN, in *Geography*, a town of Bohemia, in the circle of Leitmeritz, on the Elbe; 7 miles N.W. of Leitmeritz.

SCHRETI, a ſmall iſland in the Grecian Archipelago; 12 miles S.E. of Stamphalia.

SCHREVELIUS, Cornelius, in *Biography*, a native of Holland, was one of the principal compilers of the notes to the Variorum editions of the claſſics, in the exerciſe of which taſk he is thought to have diſplayed more induſtry than taſte or judgment. His name, however, is familiar to every ſtudent in the Greek language, by a lexicon in Greek and Latin, which has been frequently reprinted in almoſt every part of Europe. To many editions of this uſeful lexicon are added divers pieces, well calculated to aid the young in their claſſical ſtudies: ſuch as "Breves Sententiæ Græcæ," with a Latin tranſlation; "Tabellæ Dialectorum;" "Tractatus de reſolutione Verborum," &c.

SCHREVENHORN, in *Geography*, a town of the duchy of Holſtein; 13 miles W. of Lutkenborg.

SCHRIEBERSHAU, a village of Sileſia, in the principality of Jauer, famous for its glaſs-houſes, and manufacture of vitriol; 7 miles S.W. of Hiſchberg.

SCHRIESHEIM, a town of the duchy of Baden; 4 miles N. of Heidelberg.

SCHROBENHAUSEN, a town of Bavaria; 21 miles N.E. of Augſburg. N. lat. 48° 31′. E. long. 11° 3′.

SCHRODE, a river which runs into the Elbe at Magdeburg.

SCHROETER, John Samuel, in *Biography*, born at Warſaw in 1750, of German parents. At fifteen he went with his father and ſiſter to Leipſic, where he ſung at the great concert with uncommon applauſe. When his voice broke, he applied cloſely to the piano-forte, and became one of the neateſt and moſt expreſſive players of his time. In 1767 he came to England with his father and ſiſter, but was not much noticed till after the deceaſe of Bach, in 1782, when he publiſhed his natural and pleaſing concertos. His ſtyle of compoſition, highly poliſhed, reſembled that of Abel more than any other. It was graceful and in good taſte; but ſo chaſte as ſometimes to ſeem deficient in fire and invention. But his manner of playing was ſo quiet, that when the hand ſeemed doing nothing, he ſurpaſſed all other great players in rapidity. The piano-forte was a new inſtrument in this country: when he firſt arrived the hammer inſtruments of a large ſize were bad, and harpſichord players produced no great effects upon them; but Schroeter may be ſaid to have been the firſt who brought into England the true art of treating that inſtrument. We were unwilling to give up the harpſichord, and thought the tone of the piano-forte ſpiritleſs and inſipid, till experience and better inſtruments vanquiſhed our prejudices; and the expreſſion and the *chiar' oſcuro* in performing muſic expreſsly compoſed for that inſtrument, made us amends for the want of brilliancy in the tone ſo much, that we ſoon found the ſcratching of the quill in the harpſichord intolerable, compared with the tone produced by the hammer.

The accompliſhed muſician Schroeter, whoſe neat and exquiſite performance on the piano-forte will be long remembered with regret, died of a conſumption, Nov. 1788. He married a young lady of conſiderable fortune, who was his ſcholar, and was in eaſy circumſtances; but there was a languor diſcoverable in his looks, while diſeaſe was preying upon him, ſeveral years before his deceaſe.

SCHROPPEN, in *Geography*, a town of Pruſſia, in the province of Pomerelia; 5 miles E. of Marienburg.

SCHROTTENEGG, a town of the duchy of Carinthia; 6 miles S.E. of Pleyburg.

SCHRUERNICK, a town of Pruſſia, in the palatinate of Culm; 15 miles N.E. of Thorn.

SCHRUNDEN, a town of the duchy of Courland; 16 miles S. of Goldingen.

SCHUDI, BURKAT, in *Biography*, harpſichord-maker to his royal highneſs Frederic prince of Wales, and the royal family. He was a German, and had been one of Tabel's principal finiſhers. His work was extremely neat, and his tone and touch refined and delicate, while his inſtruments were new; but neither ſo full nor ſo durable as thoſe of Kirkman. Snetzler, who added horizontal organs to many of his harpſichords, uſed to account for his inſtruments ſoon loſing their perfection, by his working in a very hot room, and keeping them there, in order to give the tone the brilliancy of old inſtruments; but as ſoon as they were removed to a cold or damp room, the wood ſwelled ſo much, as to warp, crack the bellies, and diſorder all the movements; accidents which we never remember to have happened to the excellent inſtruments of his worthy ſon-in-law and ſucceſſor, Broadwood.

SCHUIA, in *Geography*, a river of Ruſſia, which runs into the Onezkoe lake, near Petrozavodſk.—Alſo, a town of Ruſſia, in the government of Olonetz; 4 miles N. of Petrozavodſk.—Alſo, a town of Ruſſia, in the government of Vladimir; 60 miles N.E. of Vladimir. N. lat. 56° 42'. E. long. 41° 34'.

SCHVINSKI, a town of the duchy of Warſaw; 48 miles N. of Warſaw.

SCHUIT, in *Commerce*, a ſilver ingot, uſed as money in Japan. It weighs 4 oz. 18 dwts. 16 grs. Engliſh troy, and is 11 oz. fine, which gives its value 1*l.* 5*s.* 3*d.* ſterling. The word ſchuit, denoting a boat, is of Dutch origin, and probably refers to the ſhape of the piece. Moſt payments are made here in ſilver ingots of different ſizes, the value of which are determined by their weight: the largeſt is about 7 ounces, and the ſmalleſt 84 grains Engliſh troy, and the fineneſs is $\frac{11}{12}$. There is alſo a little globular piece of ſilver, called “Kodama,” bearing the figure of a Japaneſe deity, with ſeveral letters. It varies in ſize and value from five to fifteen condorines, 100 condorines being equal to a tale or tayel, which is reckoned by the Dutch at 3½ florins, or about 6*s.* 2*d.* ſterling. Kelly's Cambiſt.

SCHULEN, in *Geography*, a town of Pruſſia, in the province of Ermeland; 10 miles E.S.E. of Heilſberg.

SCHULIPAR ISLANDS, two of the Laccadive iſlands, in the Eaſt Indian ſea. N. lat. 10° to 10° 10'. E. long. 71° 50' to 72°.

SCHULPE, or SCHULPENSIEL, a ſea-port town of the duchy of Holſtein, on the left bank of the Eyder, near its mouth. N. lat. 54° 20'. E. long. 9°.

SCHULTENS, ALBERT, in *Biography*, an eminent orientaliſt, was born at Groningen about the year 1680. He ſtudied at Leyden, and afterwards at Utrecht, under the celebrated Reland. Upon his entering the miniſtry, he was choſen paſtor of Waſſenaar, from which place he removed to Franeker, as profeſſor of the Oriental languages. After this he was invited to fill the ſame office at Leyden, which he held with high reputation till his death, in 1750. He was a man of profound learning, accurate taſte, and great judgment. The moſt conſiderable of his works are as follow: “A Commentary on the Book of Job,” in 2 vols. 4to.; “A Commentary on Proverbs,” 4to.; “Vetus et Regia Via Hebraizandi;” “Origines Hebraicæ;” “Animadverſiones Philologicæ et criticæ ad varia Loca Vet. Teſt.;” “Grammatica Hebraica.” He alſo tranſlated from the Arabic “The Life of Saladin.”

SCHULTET, ABRAHAM, an eminent Proteſtant divine, was born at Grunberg, in Sileſia, in 1566. He was ſtudying at Breſlau at the age of 16, when his father, who had loſt all his property by a fire, and was unable to maintain him at the univerſity, recalled him, with the intention of putting him to a trade. The ſon, unwilling to renounce his literary purſuits, reſolved upon joining at the ſame time the character of teacher and ſcholar, and attended in different ſeminaries of learning as a private tutor, while he was himſelf an aſſiduous ſtudent at public lectures. He acted in both theſe capacities at Wittenberg, and afterwards at Heidelberg, till his reception as a miniſter in 1594. He ſoon attained to conſiderable conſequence in his profeſſion, and was nominated by the elector palatine one of his preachers. In 1660 he was elected to the eccleſiaſtical ſenate, and was frequently employed to viſit the churches in the palatinate. In 1610 he accompanied the prince of Anhalt to the war of Juliers, and in 1612 he attended the prince Frederic to England, where he formed an acquaintance with the moſt diſtinguiſhed men of learning. On his return he was appointed to the office of court-preacher, and in 1618 to the profeſſorſhip of theology in the univerſity of Heidelberg. He was one of the deputies to the ſynod of Dordrecht, and eſpouſed the cauſe of the contra-remonſtrants. When the elector accepted the crown of Bohemia, Schultet attended him to that country, but after the famous battle of Prague, he returned to Heidelberg, which, however, he was obliged to quit, with the reſt of the profeſſors, on the approach of the enemy. He now went to Embden, having been choſen miniſter, and died while exerciſing the office, in 1625. He was greatly diſtinguiſhed for his eloquence as a preacher, and was author of various works, theological, moral, and hiſtorical. Among his pieces was a treatiſe on Ethics, in two books, one “On a Virtuous Life,” and the other “On a Happy Life.” He had projected a hiſtory of the Reformation, of which he publiſhed only two decades; the remainder was deſtroyed in the pillage of the Prague. He was charged with having inſtigated the elector palatine to accept the crown of Bohemia, and was accordingly held reſponſible for all the misfortunes conſequent on that ſtep. To this our divine replied, that he had no ſhare whatever in the deliberation concerning the acceptance of that crown; nevertheleſs he admitted that he compoſed a ſermon, in which he congratulated the elector on having acceded to the wiſhes of the Bohemians, and encouraged him from the word of God to conduct himſelf valiantly in the enterprize.

SCHULZ, John-Albrecht-Peter, an elegant, refined, and fertile muſician, chapel-maſter to the king of Denmark at Copenhagen, was born at Luneburg in 1740. He ſtudied under the profound Kirnberger, and afterwards travelled with a Poliſh prince, which gave him an opportunity of viſiting France and Italy, of hearing the great performers, and becoming familiar with the ſtyle of both nations. In 1774 he returned to Germany, and ſettled at Berlin, where he became not only reſpectable as a compoſer, but a theoriſt and a critic. He furniſhed the ſecond article in Sulzer's theory; reviewed ſeveral books in an able manner; and had the direction of the orcheſtra of the French theatre at Berlin. In 1780 he was appointed chapel-maſter to prince Henry at Reinſberg. In this ſtation he continued ſeven years, during which time he produced many of his beſt works.

In 1787 he was called again to Copenhagen by the reigning prince, and placed at the head of an academy, or muſical ſeminary; but the drawing up a code of laws for regulating this eſtabliſhment did not occupy his mind ſo entirely, as to check his imagination, or blunt his critical acumen. Senſe and intellect ſeem to have been equally employed. He produced ſeveral theatrical and critical works that did him much credit; and a liſt is given in Gerber's Continuation of Walther's Dictionary of nineteen different works in compoſition; operas, ſerious and comic, oratorios, and inſtrumental muſic. We have ſeen but few of his works; but thoſe few convince us that his taſte was too refined, and his imagination too fertile, to allow him ever to be vulgar or dull in the reſt.

SCHUMBERG, in *Geography*, a town of Pruſſia, in the province of Pomerelia; 12 miles N.W. of Marienburg.

SCHUNDA-PANA, in *Botany*, Rheede Hort. Malab. v. 1. 15. t. 11. is *Caryota urens* of Linnæus. See Caryota.

SCHUNGA, in *Geography*, a town of Ruſſia, in the government of Olonetz, on the Onezſkoe lake; 20 miles S. of Povenetz.

SCHUNTER, a river of Germany, which riſes near Helmſtadt, in Wolfenbuttel, and runs into the Ocker, 7 miles below Brunſwick.

SCHUPFEN, a town of Switzerland, in the canton of Lucerne; 11 miles S.S.W. of Lucerne.

SCHURGAST, a town of Sileſia, in the principality of Oppeln; 11 miles N.N.W. of Oppeln. N. lat. 50° 40′. E. long. 17° 40′.

SCHURMAN, Anna-Maria, in *Biography*, a very celebrated female, was born of a good family at Cologne, in 1607. Her father removed with his family to Utrecht, being of the Proteſtant religion, and afterwards to Franeker, for the education of his ſons; but on his death, his widow returned to Utrecht, which place was from this time the chief reſidence of the ſubject of this article. From a very early age Anna-Maria manifeſted extraordinary talents for ingenious works and ornamental accompliſhments. As ſoon as ſhe could uſe a pair of ſciſſors, ſhe employed herſelf in cutting out all ſorts of figures in paper, without a pattern. She then acquired the arts of drawing, painting, embroidery, ſculpture, engraving, and muſic. She wrote a moſt beautiful hand, modelled in wax with great perfection, and drew portraits on glaſs with the diamond. She applied herſelf very ſucceſsfully to different branches of literature, and became a perfect miſtreſs of the Latin, Greek, and Hebrew languages: ſhe acquired a knowledge of ſeveral modern, as well as the ancient tongues. She was extremely well verſed in aſtronomy, geography, and ſeveral of the other branches of experimental philoſophy. She made theology and the holy ſcriptures objects of her particular attention. "All this wonderful extent of knowledge did not render her in the leaſt vain, or diſqualify her for the uſual occupations of her ſex; and her ſingular merit might have remained unknown to the world, had not Voſſius, Spanheim, and other illuſtrious men, almoſt forcibly dragged her from obſcurity. Her reputation ſoon ſpread through Europe, and the moſt diſtinguiſhed literary characters became her correſpondents." The celebrated poet and penſionary Catz offered her his hand, but ſhe preferred the freedom of a ſingle life. She was viſited by almoſt all the perſons of rank and eminence who paſſed through Utrecht, and enjoyed the eſteem of the illuſtrious Elizabeth, princeſs palatine. She firſt appeared as a writer in a copy of Latin verſes on the founding of the univerſity of Utrecht, in 1636. Some of her letters were publiſhed, and in 1641 was printed part of her Latin Diſſertation, "Whether the Study of Literature was ſuitable to a Chriſtian Woman." After this ſhe publiſhed her "Opuſcula," conſiſting of pieces in proſe and verſe in different languages. She now became a zealous follower of the myſtic and enthuſiaſt Labadie; whom ſhe accompanied in his various migrations, and it was in her arms that he breathed his laſt at Altona. After his death ſhe ſold her property, and took up her abode with an aſſociation of religioniſts of the ſame connection, at Wywert, near Leuwarden. Here ſhe died in 1678. Her "Opuſcula" have been frequently reprinted.

SCHURNDORF, in *Geography*, a town of Germany, in the principality of Culmbach; 8 miles S.W. of Culmbach.

SCHURTZFLEISCH, Conrad-Samuel, in *Biography*, a man of letters, was born in 1641, at Corbach, in the county of Waldeck. He ſtudied at his native place, at Gieſſen, and Wittenberg, and for ſome time taught in a ſchool at Corbach, in the room of his father, after which he went to Leipſic, and engaged in private tuition; and in 1671 he obtained the profeſſorſhip extraordinary of hiſtory at Wittenberg. In 1678 he was promoted to the ordinary profeſſorſhip of hiſtory in that place, to which was afterwards added that of Greek. He paſſed ſome time in foreign travel, and in 1700 he was appointed profeſſor of eloquence at Wittenberg. He was alſo librarian to the duke of Saxe-Weimar, with the title of counſellor. He died in 1708. This learned man was author of a great number of works, of which the following may be mentioned; "Diſputationes Hiſtoricæ civiles," 3 vols. 4to.; "Epiſtolæ arcanæ," 3 vols. 8vo.; and a continuation of Sleidan's work, "De Quatuor Imperiis." A ſatirical piece, which he wrote when he was young, entitled "Judicium de noviſſimis Prudentiæ civilis Scriptoribus," occaſioned conſiderable commotion among the learned, and in the end cauſed his name to be ſtruck out from the liſt of the members of the univerſity of Wittenberg. In 1744, a collection of his Diſſertations on eccleſiaſtical hiſtory was publiſhed at Wittenberg.

SCHUSPE, in *Geography*, a river of Germany, which runs into the Weſer, near Corvey.

SCHUSS, a river of Germany, which runs into the lake of Conſtance, 2 miles E. of Buchorn.

SCHUSTER, Joseph, in *Biography*, maeſtro di cappella to the king of Sardinia and the elector of Saxony, a famous German compoſer, was born in 1748. His father, a baſſoon player in the king of Poland's famous band, had him well educated, placed with Nauman for counterpoint, and in 1765 ſent him to Italy. At Venice he purſued the ſtudy of harmony with Girolamo Pera; and before he left Italy, he compoſed operas for ſeveral theatres, which were crowned with ſucceſs. On his return to his own country, in 1772, he was appointed chamber compoſer to the elector of Saxony. In 1774 he made a ſecond journey into Italy, in order to place himſelf under the learned contrapuntiſt, Padre Martini; and after compoſing ſeveral operas for Naples and Venice, he returned in 1776 to Germany. It was during this ſecond tour to Italy that he had the honour of being appointed maeſtro di cappella to his Sicilian majeſty.

Upon a new call to Italy, he undertook, with the conſent of his patron, the elector of Saxony, a third journey to Venice and Naples, in 1778, and was equally fortunate in the reception of his works in theſe capitals as he had been in his former viſits, in whatever Italian cities he had been employed as a dramatic compoſer. The learned converſations which he now enjoyed with the great and venerable Haſſe at Venice, whither he had retired with his wife, the Fauſtina, and daughters, to end his days, were extremely gratifying to Schuſter, whom Haſſe remembered at the brighteſt period of his life at Dreſden, for which court he always ſeemed penetrated with the moſt profound reſpect and gratitude.

In 1781 Schuſter quitted Venice, and on his return to Dreſden became, for the firſt time, an eccleſiaſtical compoſer, and produced a maſs for the chapel of his ſerene highneſs the elector, which pleaſed ſo much, that he was appointed joint maeſtro di cappella with Nauman and Seydelmann, who were to compoſe and be in waiting alternately.

After this, the fertile maeſtro Schuſter compoſed ſeveral comic operas, which pleaſed very much, and in which he diſcovered a vein of humour which he was never before ſuppoſed to poſſeſs.

There is an ample liſt of his works in Gerber's Lexicon, up to 1792, from which this article has been chiefly drawn. We only know the name of Schuſter in England from ſome capital bravura airs, which he compoſed expreſsly to diſplay the Mara's extraordinary powers of execution.

SCHUSTIS, in *Geography*, a river of Samogitia, which joins the Minia near its mouth.

SCHUT, CORNELIUS, in *Biography*, was born at Antwerp in 1600, and being poſſeſſed of a lively and inventive genius, was educated as a painter. He was placed as a diſciple with Rubens, and became one of the principal ornaments of the ſchool of that celebrated maſter. When he had acquired ſufficient power to practiſe by himſelf, he was employed for the altars of ſeveral churches; and by the works he produced, obtained very conſiderable reputation: ſufficient, unfortunately, to render him vain and preſumptuous. To ſuch a degree did his vanity urge him, that he offered himſelf as a rival to his great inſtructor; criticiſing his works with contumacious illiberality, and accuſing him of want of invention and genius! His raſhneſs was reproved by the gentleneſs of Rubens, who returned his railings with acts of kindneſs and liberality, applauding his pictures, and recommending him to employment.

The qualities of Schut as an artiſt were conſiderable, at leaſt as far as the executive part of the art is concerned. He had a fertile and vivid imagination, which, however, he did not always exerciſe with diſcretion; being evidently much more intent upon producing a pleaſing arrangement of light and colour, than intereſting the mind, or engaging the heart: following, indeed, too cloſely the moſt prominent features of the ſchool in which he had been educated. His talents had moſt ample field for employment, which he uſed with conſiderable ſucceſs in the freſcoes he painted in the cupola of the cathedral at Antwerp, and other large works of that nature, in this, his native city. Beſides abundance of altar-pieces, he painted many hiſtorical ſubjects, his repreſentations of which are ſcattered about in various collections, and doubtleſs not unfrequently offered to ſale as the work of Rubens. He died at Antwerp in 1660, at the age of 60.

This artiſt etched a conſiderable number of plates from his own deſigns, which are ſkilfully executed, with great clearneſs and preciſion.

SCHUTOVSKAIA, in *Geography*, a town of Ruſſia, in the government of Tobolſk, on the Vagai; 40 miles S. of Tobolſk.

SCHUTT, or SCHIT, an iſland of Hungary, formed by the Danube, 30 miles in length, and 10 in medial breadth; abounding in herbage and fruits, and alſo in wood, game, and fiſh. There is another iſland of the ſame name, and ſeparated from the former by a branch of the Danube, 20 miles long, and 5 broad. On theſe iſlands there are ſeveral towns and villages: the N.W. extremity of Schutt is a little below Preſburg.

SCHUTTEBA, a town of Arabia, in the province of Yemen; 36 miles E. of Chamir.

SCHUTTENHOFEN, SUSCE, or *Sutchutz*, a town of Bohemia, in the circle of Prachatitz; 20 miles W.S.W. of Prachatitz. N. lat. 49° 12′. E. long. 13° 28′.

SCHUTTER, a river of Baden, which runs into the Rhine, near Kehl.

SCHUTTORF, a town of Germany, in the county of Bentheim, on the Vechte; 3 miles N.E. of Bentheim.

SCHUTZENDORF, a town of Sileſia, in the principality of Grotkau; 9 miles N.E. of Patſchkau.

SCHUYLER, a townſhip of America, in the ſtate of New York, and county of Herkemer, between Mohawk river and Canada creek, 6 miles N.N.E. of Utica and 86 from Albany; incorporated in 1792, and containing, in 1810, 324 families, 124 electors, and 2107 inhabitants.

SCHUYLER'S *Lake*, a lake of New York, nine miles long, and between four and five broad; 10 miles W. of lake Otſego.

SCHUYLKILL, a river of Pennſylvania, which riſes N.W. of the Kittatinny mountains, through which it paſſes into a fine champaign country, and runs from its ſource upwards of 120 miles in a S.E. direction, and paſſing through the limits of Philadelphia, falls into the Delaware oppoſite to Mud iſland, ſix or ſeven miles below the city. By means of the Norriton canal, it is navigable from above Reading, 85 or 90 miles to its mouth. Acroſs it are three floating bridges, made of logs faſtened together, in the vicinity of Philadelphia. Another wooden bridge, reſting on two ſtone pieces, has been a work of great expence, and a valuable improvement. Little Schuylkill river falls into this river from the N. at Reading. On the head-waters of Schuylkill are great quantities of coal.

SCHUYTEN'S BAY, a bay on the E. coaſt of Cochinchina. N. lat. 12° 36′. E. long. 109° 10′.

SCHWABACH, a town of Germany, in the principality of Anſpach, on a river of the ſame name, which divides it into two parts, and runs into the Rednitz at Erlang. The town, though not large, is very populous, and contains three churches, one of which is Proteſtant. Here are a letter-foundry, and manufactures of ſtockings and tapeſtry; 11 miles E. of Anſpach.

SCHWABACH, a lordſhip of Germany, united with

Mindelheim, and eight miles N.E. of it ; taking its name from a caſtle.

SCHWABEGG, a town of the duchy of Carinthia ; 5 miles W.S.W. of Lavamund.

SCHWABEN, a town of Bavaria ; 14 miles W.N.W. of Waſſerburg.—Alſo, a town of Pruſſia, in the province of Samland ; 12 miles E. of Tilſit.

SCHWABMUNCHEN, a town of Bavaria, on the Sinckel ; 11 miles S. of Augſburg.

SCHWABSTEDT, a town of Denmark, in the duchy of Sleſwick ; 14 miles W.S.W. of Sleſwick.

SCHWADORFF, a town of Auſtria, at the conflux of the Pietingpach and the Reiſenpach ; 9 miles S.E. of Vienna.

SCHWAIGERN, a town of Wurtemberg ; 6 miles W.N.W. of Heilbron. N. lat. 49° 6′. E. long. 9° 0′.

SCHWALBACH, or *Burg-Schwalbach*, a town of Germany, in the principality of Naſſau Saarbruck Uſingen ; 8 miles N.W. of Idſtein.

SCHWALBACH, *Little*, a town of Germany, in the principality of Solms Braunfels, with a medicinal ſpring ; 5 miles S.S.E. of Braunfels.

SCHWALBEA, in *Botany*, a Linnæan genus, named after Chriſtian George Schwalbe, a phyſician and botaniſt, author of ſome tracts on the Materia Medica, one of which was entitled "De China Officinarum," which De Theis miſtakes for *Quina*, or Peruvian bark.—Linn. Gen. 306. Gronov. Virg. 92. Walth. Carol. 167. Schreb. 402. Willd. Sp. Pl. v. 3. 201. Mart. Mill. Dict. v. 4. Juſſ. Gen. 123. Michaux Boreal-Amer. v. 2. 19. Purſh v. 2. 428. Lamarck Illuſtr. t. 520. Gærtn. t. 55.—Claſs and order, *Didynamia Angioſpermia*. Nat. Ord. *Perſonatæ*, Linn. *Scrophulariæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, tubular, ventricoſe, ſtriated, obliquely four-cleft at its mouth ; the upper ſegment very ſhort ; the lateral ones longer ; the loweſt ſtill longer, broader, emarginate. *Cor.* of one petal, ringent ; tube the length of the calyx ; limb erect ; upper lip erect, concave, undivided ; lower of equal length, obtuſe, cloven into three equal ſegments. *Stam.* Filaments four, two of them ſhorter, thread-ſhaped, about as long as the corolla ; anthers incumbent. *Piſt.* Germen ſuperior, roundiſh ; ſtyle in appearance like a ſtamen ; ſtigma thickiſh, recurved. *Peric.* Capſule ovate, compreſſed, of two cells and two valves, with a folded partition. *Seeds* (according to Gærtner) numerous, chaffy, lanceolate, ſmall.

Eſſ. Ch. Calyx four-cleft ; the upper diviſion very ſmall ; the lower one large, emarginate.

1. S. *americana*. Linn. Sp. Pl. 844. (Euphraſia major mariana, floribus ſpicatis amplis : tubis longioribus : ſummis oris profundè inciſis ; Pluk. Mant. 73. t. 348. f. 2.)—Native of North America, in barren ſandy ground, flowering in June and July.—*Root* biennial. *Stem* quite ſimple, quadrangular, downy. *Leaves* alternate, ſeſſile, lanceolate, fringed with hairs. *Bracteas* ovate, pointed. *Flowers* ſtalked, ſolitary, alternate, forming a ſpike, of a dark browniſh-red, or yellowiſh-brown.

SCHWALE, in *Geography*, a river of Holſtein, which runs into the Stoer.

SCHWALENBURG, or SWALENBERG, a town of Weſtphalia, in the county of Lippe, formerly the capital of a county of the ſame name ; 19 miles S.E. of Detmold.

SCHWALM, a river of Heſſe, which joins the Eder near Felſberg.—Alſo, a river which riſes in the county of Mark, and runs into the Wipper, 2 miles E.S.E of Barmen, in the duchy of Berg.

SCHWALMERN, a mountain of Switzerland, being one of the group of mountains in the canton of Berne, which on one ſide borders the valley of Lauterbrunnm, and on the other towers oppoſite to the Nieſs, at the commencement of the valley of Frutingen. The mountains of this group ſtand on a baſe of argillaceous ſchiſtus, containing a few petrifactions, which is rarely viſible but at certain elevations.

SCHWALUNGEN, a town of Germany, in the county of Henneberg ; 2 miles N. of Waſungen.

SCHWAMELWITZ, a town of Sileſia, in the principality of Grotkau ; 4 miles S.W. of Ottmuchau.

SCHWAN, a town of the duchy of Mecklenburg, on the Warnow ; 8 miles S. of Roſtock. N. lat. 53° 58′. E. long. 12° 14′.

SCHWANBERG, a town of the duchy of Stiria ; 11 miles S. of Voitſberg.—Alſo, a town of Germany, in the county of Wertheim ; 11 miles S. of Wertheim.

SCHWANBERGER, JOHN, in *Biography*, chapel-maſter to the duke of Brunſwick, was born at Wolfenbuttle in 1737. He ſtudied under Graun, went to Italy, and at Venice became the pupil of Latilla. We met and converſed together at Hambro, and found him an enthuſiaſt for Italian muſic. He had then (1772) compoſed ſeveral ſerious operas, of which the vocal parts were in a very refined taſte ; his melodies are graceful and natural, his accompaniments ingenious and judicious ; and the clearneſs and facility with which he writes, manifeſt great experience, and a happy ſelection. His harpſichord pieces, as well as thoſe written for violins, are full of pleaſing effects, produced by fair and warrantable means.

SCHWANBERGER *Alben, Ober*, in *Geography*, a mountain of Stiria, 4 miles W. of Landſperg ; and *Unter Schwanberger Alben*, is a mountain of the ſame duchy ; ſix miles S.S.W. of Landſperg.

SCHWAND, a town of Saxony, in the Vogtland ; 6 miles S.W. of Plauen.

SCHWANDEN, a town of Switzerland, in the canton of Glarus, at the union of the Linth and the Scernſt ; 5 miles S. of Glarus.

SCHWANDING, a town of Germany, in the principality of Culmbach ; 9 miles E. of Culmbach.

SCHWANDORF, a town of Bavaria, in the principality of Neuburg ; 20 miles N. of Ratiſbon.

SCHWANEBECK, a town of Weſtphalia, in the principality of Halberſtadt ; 5 miles N.E. of Halberſtadt.

SCHWANNASTADT, a town of Auſtria, on the river Ager ; 48 miles W. of Bavarian Waidhoven. N. lat. 48° 3′. E. long. 13° 43′.

SCHWANSEE, a town of Germany, in the principality of Eiſenach, near a lake of the ſame name ; 5 miles E. of Erfurt.

SCHWARA, in *Commerce*. See SWARA.

SCHWARBRUCK, in *Biography*, a German organ-builder, who erected the firſt organ in the church of St. Martin's-in-the-Fields, with which it was furniſhed after the building (which was one of queen Anne's 50 churches) was finiſhed.

St. Martin's being the king's pariſh, George I., ſoon after his majeſty's arrival in his new dominions, was choſen (probably by ſome ſpiteful jacobitical veſtry-men) churchwarden of his own pariſh, and in order to get rid of ſo troubleſome and inglorious an office, his majeſty made the pariſh a preſent of the inſtrument, which was ſtanding in the church till within theſe few years ; and the loyal part of the pariſh, probably as a mark of duty and reſpect, appointed Weldon, organiſt of his majeſty's own chapel, to play upon it ;

who at his deceaſe was ſucceeded by Kelway, Kelway by Dr. Cook, and Dr. Cook by his ſon.

SCHWARSFELDT, in *Geography*, a town of Pruſſia, in the province of Bartenland; 10 miles S.E. of Bartenſtein.

SCHWARSTHAL, a town of Bohemia, in the circle of Konigingratz, near which is a gold mine; 9 miles N.W. of Trautenau.

SCHWARTAU, a town of Germany, in the biſhopric of Lubeck; 6 miles N. of Lubeck.

SCHWARTSTEIN, a town of Pruſſia, in Bartenland; 4 miles E. of Bartenſtein.

SCHWARTZ, BERTHOLD, in *Biography*, a native of Friburg, in Germany, and a monk by profeſſion, lived in the thirteenth century. Being attached to the ſtudy of chemiſtry, an accident revealed to him the compoſition of that mixture of nitre with ſulphur and charcoal, which forms *gunpowder;* which ſee. The invention was very ſoon perfected, and its uſe in the art of deſtruction ſo quickly ſuggeſted itſelf, that the Venetians, the French, and the Engliſh made uſe of it in the art of war very early in the 14th century. It has often and warmly been debated whether this diſcovery has been uſeful or pernicious to the human race. The queſtion may be ſtated in ſhort: "there can be no doubt that the immediate operation of gunpowder is more terrific and deſtructive than that of any of the former inſtruments of war, and that it has added greatly to the means of offence. But as hoſtilities between nations are rarely terminated till the mutual miſchief produced has riſen to a degree which cauſes the evil to be ſeverely felt, or till one of the parties is reduced to a neceſſity of ſubmiſſion, it is perhaps of ſmall importance by what means this ſtate of things is brought about. Battles are apparently not more bloody than formerly, and towns are not more frequently laid in aſhes, or countries made deſolate. One of its effects can ſcarcely be denied to be advantageous to ſociety, namely, that it has given a decided ſuperiority to civilized over barbarous nations, by intimately connecting the progreſs of ſcience with improvements in the art of war." Gen. Biog.

Schwartz *See*, in *Geography*, a lake in the duchy of Carinthia; 10 miles S. of Feltkirchen.

Schwartz *Waſſer*, a river of Sileſia, which runs W. into the Oder, one mile E. of Maltſch.—Alſo, a river of Sileſia, which runs S.E. into the Katzbach.—Alſo, a river of Sileſia, which runs S.W. into the Stober, near Bielitz.—Alſo, a river of Sileſia, which runs into the Oder, one mile S.E. of Breſlau.—Alſo, a river of Saxony, which runs into a lake near Torgau.

Schwartz *Graben*, a river of Sileſia, which runs into the Oder, 3 miles N.N.E. of Wartenberg.

SCHWARTZA, a town of Germany, in the county of Henneberg; 4 miles N.E. of Meinungen.

Schwartza, *Schwarzawa*, or *Swarta*, a river of Moravia, which riſes eight miles W. of Ingrowitz, paſſes by Brunn, &c. and runs into the Iglau, before its union with the Teya.

SCHWARTZACH, a river of Germany, which runs into the Rhine, near Waldſhut.—Alſo, a town of Germany, in the principality of Culmbach; 9 miles S.E. of Bayreuth.—Alſo, a town of Germany, in the principality of Culmbach; 4 miles W.N.W. of Culmbach.

SCHWARTZBACH, a river of Germany, which riſes near Darmſtadt, and runs into the Rhine two miles above its union with the Main.—Alſo, a river of Carinthia, which flows from the lake Schwartz See into the river Muehr, 5 miles W. of Muehra.—Alſo, a river of Saxony, which runs into the Mulda, near Duben.—Alſo, a town of Saxony, in the circle of Neuſtadt; 5 miles N.N.E. of Neuſtadt.—Alſo, a river of Sileſia, which runs N. into the river Quies, 1 mile N. of Briedberg.

SCHWARTZBERG, one of the group of mountains mentioned under *Schwalmern;* which ſee.

SCHWARTZENA, a town of Pruſſia, in the palatinate of Culm; 18 miles N. of Straſburg.

SCHWARTZENBACH, a town of Auſtria; 16 miles S.E. of Ebenfurth.—Alſo, a town of Switzerland, in the county of Tockenburg.

SCHWARTZENBECK, a town of the duchy of Lauenburg; 11 miles N. of Lauenburg.

SCHWARTZENBERG, a mountain of Auſtria; 24 miles S. of Steyr.

SCHWARTZENBORN, a town of Germany, in the county of Ziegenhayn; 7 miles E. of Ziegenhayn.

SCHWARTZENBURG, a town of Switzerland, in the canton of Berne, and capital of a bailiwick, ſituated between the cantons of Berne and Friburg. The inhabitants ſpeak the German language, and are all Proteſtants; 17 miles S.S.W. of Berne.

SCHWARTZENFELS, a town of Germany, in the principality of Hanau Munzenburg; 14 miles S. of Fulda.

SCHWARTZENITZ, a town of Bohemia, in the circle of Leitmeritz; 20 miles N. of Prague.

SCHWARTZENPACH, a town of Carinthia; 7 miles S. of Pleyburg.

SCHWARTZORTZ, a town of Pruſſia, in the province of Smaland, on the Curiſch Nerung; 12 miles S. of Memel.

SCHWARTZWASSER, or STRUMIEN, a town of Sileſia, in the principality of Teſchen; 11 miles N.N.E. of Teſchen.

SCHWARZA, a river which riſes in the principality of Schwartzburg, and runs into the Saal, three miles below Saalfeld.

SCHWARZACH, a river of Bavaria, which runs into the Danube, ſix miles below Deckendorf.—Alſo, a river of Swabia, which runs into the Danube, three miles below Scheer.—Alſo, a river of Bavaria, which runs into the Altmuhl, ſix miles S.W. of Berngries.—Alſo, a river of Bavaria, which runs into the Nab, four miles S. of Nabburg.—Alſo, a town and abbey of the duchy of Baden; 8 miles W.S.W. of Baden.

SCHWARZAU, a river of Germany, which runs into the Rednitz, 10 miles S. of Nuremberg.

SCHWARZBACH, a town of the duchy of Wurzburg, on the Maine; 11 miles E. of Wurzburg.

Schwarzbach, *Ober*, a town of the duchy of Wurzburg, on the left bank of the Maine; 5 miles S. of Geroltzhofen. N. lat. 49° 50′. E. long. 10° 15′.

SCHWARZBURG, a principality of Saxony, in Thuringia, the ſouthern or upper part being ſeparated from the northern or lower part by a ſpace of more than 20 miles. The former is ſurrounded by the principalities of Coburg, Altenburg, and Eiſenach, and the territory of Erfurt; the latter by the circle of Thuringia, the electorate of Saxony, the counties of Stolberg, Hohenſtein, Eichsfelde, and the territory of the imperial town of Muhlhauſen. The whole principality contains 12 boroughs, with the half of two others, 10 market-towns, 15 caſtles, and about 100,000 inhabitants. The princes and their ſubjects are Lutherans. The preſent princes of Schwarzburg are divided into two principal branches, *viz.* Schwarzburg-Sonderſhauſen and Schwarzburg-Rudolſtadt.—Alſo, a town and caſtle of

Germany, in the county of Schwarzburg-Rudolſtadt; near which are mines of ſilver and copper; 8 miles S.W. of Rudolſtadt.

SCHWARZENAU, a town of Germany, in the county of Witgenſtein, on the Eder; 5 miles E. of Berleburg.—Alſo, a town of the duchy of Wurzburg, on the right bank of the Maine, oppoſite to Schwarzbach.

SCHWARZENBACH *ſur la Saale*, a town of Germany, in the environs of which are quarries of grey marble, ſtained with yellow; 6 miles S. of Hof.

SCHWARZENBERG, a town and caſtle of Germany, in the county of Schwarzenberg; 26 miles N. of Anſpach.—Alſo, a lordſhip ſituated between the biſhoprics of Wurzburg and Bamberg, and the marggravate of Anſpach, about 18 miles long and 3 broad.—Alſo, a town of Saxony, in the circle of Erzgebirg, near which are ſeveral iron forges, and mines that yield both tin and lead; 48 miles S.W. of Dreſden. N. lat. 50° 34′. E. long. 12° 38′.

SCHWARZENFELD, a town of Bavaria, in the Upper Palatinate; 5 miles S. of Nabburg.

SCHWARZENSTEIN, a town of the duchy of Stiria; 8 miles N.W. of Cilley.

SCHWARZHOFEN, a town of Bavaria; 15 miles S.E. of Amberg.

SCHWATZ, a town of Bohemia, in the circle of Leitmeritz; 12 miles W. of Leitmeritz.—Alſo, a town of the county of Tyrol, ſituated on the Inn, near which is a mine of ſilver and copper, that employs 1000 men. It was diſcovered in 1448, and was formerly very productive. Here is likewiſe a good glaſs-houſe; 14 miles E.N.E. of Inſpruck. N. lat. 47° 21′. E. long. 11° 46′.

SCHWEDT, a town of Brandenburg, in the Ucker Mark, on the Oder, which here divides it into two parts; 46 miles N.E. of Berlin. N. lat. 53° 5′. E. long. 14° 28′.

SCHWEDTZ, a town of Pruſſia, in Pomerelia, on the Viſtula; 5 miles N. of Culm.

SCHWEIDNITZ, a city of Sileſia, and capital of the principality to which it gives name. It roſe from the aſhes to which a fire reduced the greateſt part of it in 1716 with new beauty, and was built of ſtone. The new town-houſe is an elegant ſtructure. In 1788 the number of inhabitants was 8983. Its chief buſineſs is the manufacture of leather; 26 miles S.W. of Breſlau. N. lat. 50° 49′. E. long. 16° 25′.—Alſo, one of the largeſt and moſt populous principalities of Sileſia, and united with Jauer, equal to one-eighth of the duchy. This country is furniſhed with wood, legumes, and fruit, abounds with game and ſheep, and has in ſeveral parts of it coal. The linen and woollen manufactures flouriſh. The whole principality contains fourteen towns.

SCHWEINBURG, or SCHWINSBURG, a town of the principality of Heſſe, on the Ohm; 9 miles S.E. of Marburg.

SCHWEINBURG, a town of Auſtria; 2 miles S. of Pirrawurth.

SCHWEINFURT, or SUIRFORD, a town of Bavaria, on the Maine, over which is a ſtone bridge. It contains two churches, an hoſpital, and a college, founded by Guſtavus Adolphus, king of Sweden. Its territory, which is not extenſive, produces excellent wine, and the chief articles of its trade are cloth, linen, and feathers. The town was imperial until the year 1802, when it was given to the elector of Bavaria; 28 miles N.N.E. of Bamberg. N. lat. 50° 5′. E. long. 10° 25′.

SCHWEINITZ, a town of Saxony, on the Schwartz Elſter; 12 miles E. of Wittenberg. N. lat. 51° 47′. E. long. 13° 8′.—Alſo, a town of Bohemia, in the circle of Bechin; 12 miles S.S.E. of Budweiſs.

SCHWEINSBACH, a town of Germany, in the principality of Culm; 2 miles S. of Munchberg.

SCHWEINSHAUPTEN, a town of the duchy of Wurzburg, on the Baunach; 5 miles S.S.E. of Konigſhofen in der Grabfeld.

SCHWEIRA, a town of Germany, in the county of Henneberg; 4 miles N.N.W. of Smalkalden.

SCHWEIRBACH, a river of Germany, which runs into the Fils, oppoſite to Salach.

SCHWEITZ, or SCHWITZ, a canton of Switzerland, and one of the three to which the name of Schweitzerland, or Switzerland, originally extended; the other two being Uri and Underwalden. It is bounded on the N. by the canton of Zurich; on the E. by the bailiwick of Gaſter, and the canton of Glarus; on the S. by the canton of Uri; and on the W. by the cantons of Lucerne Zug and Zurich; about 24 miles long and 18 broad. Schweitz comprehends 326 ſquare miles, and 23,000 inhabitants. The balliages ſubject to Schweitz and Glarus, are Gaſter, Uznach, and Gambs, including 149 ſquare miles, and a population of 9000 perſons. This canton is mountainous, interſected with fertile vallies. The air is pure and ſalubrious: the inhabitants are brave, hardy, warlike, and jealous of their liberty: the chief article of commerce is cattle: the population is eſtimated at 32,000 perſons, including about one-third of ſuch as belong to territories, purchaſed and acquired, and now ſubject to the canton. The religion is the Roman Catholic, and its eccleſiaſtical concerns are ſubject to the direction of the biſhop of Conſtance. The inhabitants trace their origin to the Cimbrians, who, defeated by Marius the Roman general, about 100 years before the Chriſtian era, fled into Helvetia. After ſome reſolute ſtruggles in defence of their privileges, which the inhabitants of this canton, in common with thoſe of Uri and Underwalden enjoyed, when the greater part of Helvetia was ſubject to the empire, Albert, the ſon of Rhodolph, being elected emperor, refuſed to ratify the rights which they had poſſeſſed, and, in order totally to ſubdue the people, placed over them two governors, who committed many flagitious acts of tyranny and oppreſſion. Under theſe circumſtances, Werner de Staffach of Schweitz, Walther Furſt of Uri, and Arnold de Melchthal of Underwalden, planned the famous revolution, which took place January 13, 1308, and reſtored liberty to the three cantons; and Albert, as he was preparing to attack them, was aſſaſſinated by his nephew, John of Hapſburg. In 1315, Leopold, duke of Auſtria, marched againſt the confederate cantons, at the head of 20,000 troops, and, endeavouring to force his way into Schweitz, at the paſs of Morgarten, received a total defeat from 1300 Swiſs poſted upon the mountains. In the ſame year, the three cantons contracted a perpetual alliance, which was ratified at Brunnen, and is the grand foundation of the Helvetic confederacy.

The government of Uri and Schweitz is entirely democratical, and nearly the ſame. The ſupreme power reſides in the people at large, who are divided into ſeveral communities, from which are choſen the councils of regency. In the "Lands-gemeind," or general aſſembly, the Landamman, and the principal magiſtrates, are elected; and every burgher, at the age of fourteen in the cantons of Uri and Underwalden, and of fifteen in Schweitz, has a right to vote. The councils of regency in Uri and Schweitz conſiſt each of ſixty members, and reſide at the capital burghs: in theſe councils the executive power is veſted, and from their bodies the principal magiſtrates are choſen.

In the year 1798, an aſſembly of deputies from the cantons of Uri, Schweitz, Underwalden, and Glarus, determined to maintain their independence, and to reſiſt the innovations of the French. Even after the ſubjugation of the other parts of Switzerland, theſe intrepid mountaineers defended themſelves with ſuch ſpirit, and made ſuch havoc among the French forces, that general Schwembourg engaged by treaty to reſpect their territory, and accepted their promiſe to accept the new Helvetic conſtitution. When the French, in proceſs of time, continued to diſunite the ſmall cantons, and ſeparately to complete their ſubjugation, and obtained from the diet of Arau a decree for impoſing a civic oath of allegiance to the new conſtitution, the cantons of Uri, Schweitz, Underwalden, and Zug, refuſed compliance. General Schwembourg threatened that, unleſs they complied, he would inſtantly march his troops into the rebellious diſtricts. Their anſwer deſerves to be recorded for its pathetic ſimplicity. "Receive, citizen-general, from a people ever true to their engagements, who among their craggy mountains have no comfort but their religion and liberty, whoſe only riches are their cattle; receive the ſincere aſſurance that they will ever give the French republic every proof of their devotion compatible with their liberty and independence. Accept alſo, citizen-general, our ſolemn promiſe never to take up arms againſt the great republic, and never to join its enemies. Our liberty is our only bleſſing; nor will we ever graſp our arms except to defend that liberty." This artleſs remonſtrance had no effect: Uri, Schweitz, and Glarus, deeming all reſiſtance unavailing, took the civic oath; and the lower part of Underwalden, which alone refuſed, was left to its fate. According to the diviſion of 1798, the cantons of Uri, Schweitz, Underwalden, and Zug, are comprehended under that of Waldſtaatten, and the chief town is Schweitz; but in 1801 Schweitz was made a ſeparate canton, according to its former extent, with one repreſentative to the diet.

Schweitz, a town of Switzerland, and capital of the above-mentioned canton, ſituated on the ſlope of a hill, at the bottom of two high, ſharp, and rugged roads, called the "Schweitzer-Hahen." Its poſition is extremely agreeable. The church, which is a large magnificent building, ſtands in the centre of the place; near it the houſes are contiguous: but in the other part are prettily diſperſed about the gentle acclivities, in the midſt of lawns and meadows, and ſheltered by groves of trees. The principal object of curioſity in Schweitz is a complete collection of the celebrated Hetlingin's medals, poſſeſſed by his nephew: the medals are all of the fineſt impreſſions, and ſeveral extremely rare; 16 miles E.S.E. of Lucerne. N. lat. 46° 57′. E long. 8° 26′.

Schweitz, *Lake of*, the ſecond branch of the Waldſtætterſee, or lake of the four cantons.

SCHWELM, a town of the county of Mark, on a brook of the ſame name, near which are ſome medicinal ſprings; 22 miles N.E. of Cologn.

SCHWENCKFELDT, Gaspar de, in *Biography*, a religious enthuſiaſt, of a noble family in Sileſia, was born at the caſtle of Oſſig, in the duchy of Lignitz, in 1490. After paſſing ſome years with the duke, to whom he was counſellor, he began to learn the Greek language, and to ſtudy the ſcriptures and fathers of the church. He joined the Proteſtant party; but upon examining the doctrines and rites eſtabliſhed by Luther, he found many things which appeared to him to be erroneous. He accordingly formed opinions for himſelf, and began to propagate them in Sileſia, after which he went to Straſburg, Augſburg, and other imperial cities, every where inculcating his peculiar tenets, and every where encountering the enmity of the zealots of other ſects. His morals were pure, his piety fervent, and his ſincerity unqueſtionable; but he had a great propenſity to fanaticiſm, which induced him to believe that he received the doctrines which he taught from immediate divine inſpiration. He differed from Luther in three principal points: 1. With regard to the Euchariſt, he inverted the words "this is my body," and would have them underſtood thus; "my body is this, that is, ſuch as this bread which is broken and conſumed; a true and real food, which nouriſhes and ſatisfies the ſoul. My blood is this, that is, ſuch in its effects as the wine, which ſtrengthens and refreſhes the heart." 2. With reſpect to the efficacy of the divine word, he denied that the external word which is committed to writing in the ſcriptures, poſſeſſes the power of healing, illuminating, and renewing the mind; and he aſcribed this power to the internal word, which, according to his notion, was Chriſt himſelf. 3. He would not allow Chriſt's human nature, in its exalted ſtate, to be called a creature, or a created ſubſtance, which denomination appeared to him infinitely beneath its dignity. To theſe and other myſtical notions he was ſo much devoted, that he paſſed a life of wandering and contention in propagating them, and by means of his eloquence and zeal he obtained a great number of followers. He died at Ulm, in the year 1561. He had founded a church in Sileſia. His works have been frequently reprinted.

SCHWENKFELDIA, in *Botany*, was ſo named by Schreber, in memory of Caſpar Schwenckfelt, author of a catalogue of the plants and foſſils of Sileſia, who died in 1609. The ſame genus was denominated by Aublet Sabicea; ſee the explanation of that word in its proper place. Its origin and conſtruction are, no doubt, barbarous, as well as arbitrary; and the Linnæan laws, which we highly approve, induced Schreber to change it. In all ſuch caſes we ſhould prefer the ſubſtitution of a legitimate Greek or Latin word; at leaſt to one whoſe claims may be diſputed, and whoſe harmony is, as in the preſent inſtance, certainly very far inferior to that of the rejected name.—Schreb. Gen. 123. Willd. Sp. Pl. v. 1. 982. Mart. Mill. Dict. v. 4. Swartz Ind. Occ. v. 1. 448. t. 10. (Sabicea; Aubl. Guian. v. 1. 192. Juſſ. 207. Lamarck Illuſtr. t. 165. Swartz Prodr. 46.)—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Stellatæ*, Linn. *Rubiaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth ſuperior, of one leaf, in five deep, lanceolate, acute ſegments, permanent. *Cor.* of one petal, funnel-ſhaped; tube much longer than the calyx, thread-ſhaped, hairy in the mouth; limb in five deep, lanceolate, acute ſegments. *Stam.* Filaments five, inſerted into the tube of the corolla; anthers linear, incumbent. *Piſt.* Germen inferior, roundiſh; ſtyle thread-ſhaped, the length of the tube; ſtigmas five, oblong. *Peric.* Berry of five cells, globoſe, crowned with the permanent calyx. *Seeds* numerous, minute, attached to creſcent-ſhaped *receptacles*.

Obſ. In ſome caſes the flowers are four-cleft and tetrandrous. We do not ſee the neceſſity of admitting the involucrum into the generic character.

Eſſ. Ch. Corolla funnel-ſhaped, hairy within. Stigmas five. Berry of five cells, with many ſeeds.

1. S. *hirta*. Swartz Ind. Occ. v. 1. 450. Willd. n. 1.—Leaves ovato-lanceolate, pointed, hairy. Flowers on ſhort ſtalks.—Native of mountainous woods, in the weſtern part of Jamaica; flowering in April. A climbing *ſhrub*, with angular *branches*, hairy when young. *Leaves* oppoſite, ſtalked, three or four inches long, and one or one and a half broad, entire; paler beneath. *Stipulas* between the footſtalks, large, rounded, entire, ſpreading, of a pale or whitiſh

hue. *Flower-ſtalks* axillary, ſhorter than the footſtalks, ſolitary, each bearing an *umbel* of three ſtalked, white, inodorous, five-cleft *flowers*, ſubtended by a large four-cleft involucral leaf, or *bractea*. Permanent *calyx* enlarged, leafy, hairy, as is likewiſe the outſide of the *corolla*. *Berry* ſnow-white.

2. S. *cinerea*. Swartz Ind. Occ. v. 1. 452. Willd. n. 2. (Sabicea cinerea; Aubl. Guian. v. 1. 192. t. 75.)—Leaves elliptic-oblong, acute, downy; hoary beneath. Flowers nearly ſeſſile. Branches downy.—In the hedges of Cayenne and Guiana.—*Stem* climbing, ſhrubby, with round downy *branches*. The *leaves* are clothed with fine white down at the back. *Stipulas* ſmaller, and more acute, than in the former. *Flowers* white, with very ſhort, common, as well as partial, *ſtalks*, five-cleft; their *corolla* longer and ſlenderer than the foregoing. *Berry* red, of five cells.

3. S. *aſpera*. Willd. n. 3. (Sabicea aſpera; Aubl. Guian. v. 1. 194. t. 76.)—Leaves elliptic-oblong, pointed, rough; paler beneath. Flowers ſeſſile. Stipulas lanceolate.—Gathered by Aublet on the banks of the river Sinemari in Guiana, bearing flowers and fruit in November. Its habit is like the two other ſpecies, but the *leaves*, and young *branches*, are rough with cloſe-preſſed briſtles. *Flowers* quite ſeſſile, five, ſix, or ſeven, together in the boſoms of the leaves. *Germen* very briſtly. *Berry* red, hairy. *Stipulas* lanceolate, not rounded, and the *bracteas*, if any, have the ſame figure. Some of the *flowers* are occaſionally four-cleſt. The natives call this plant *Sabiſabi*, a word refined by Aublet into *Sabicea*.

SCHWENKIA, ſo named by profeſſor David van Royen, in honour of one of his countrymen, Dr. Martin William Schwencke, a phyſician at the Hague, who died in 1785, aged 78. He publiſhed a catalogue of the phyſic-garden there, and two or three botanical tracts; but has not materially diſtinguiſhed himſelf in this line of ſcience.—Linn. Gen. 567. Syſt. Nat. ed. 12. v. 2. 61. Schreb. 18. Willd. Sp. Pl. v. 1. 106. Vahl. Enum. v. 1. 102. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 1. 43. Juſſ. 123.—Claſs and order, *Diandria Monogynia*. Nat. Ord. *Luridæ*, Linn. *Scrophulariis affine*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, tubular, ſtriated, ſtraight, five-toothed, permanent. *Cor.* of one petal; tube cylindrical, the length of the calyx; limb about as long, nearly regular; inflated, and furniſhed with five ſtar-like plaits, at the mouth, which cloſe the orifice, a glandular body being immerſed in the outer angles of the plaits, the two uppermoſt of thoſe glands longer than the reſt. *Stam.* Filaments five, three of which are ſhorter than the others, and without anthers, the two uppermoſt being the longeſt, and perfect; anthers two, ovate, erect (Linn. MSS.), of two cells. *Piſt.* Germen ſuperior, globoſe; ſtyle ſimple, the length of the perfect ſtamens; ſtigma obtuſe. *Peric.* Capſule globoſe, a little compreſſed, ſmooth, longer than the enlarged calyx, of two cells and two valves. *Seeds* numerous, minute, ſomewhat angular, attached to a globoſe *receptacle*.

Eſſ. Ch. Calyx five-cleft. Corolla nearly equal; its mouth plaited and glandular. Three mutilated ſtamens. Capſule with two cells, two valves, and many ſeeds.

1. S. *americana*. Tropical Schwenkia. Linn. Gen. 567. Willd. n. 1. Vahl. n. 1. Ait. n. 1. Schwenke in the edition of his catalogue above mentioned, printed in 1766, p. 328, with a plate.—Native of the neighbourhood of Berbice, in Guiana. M. Richard is alſo recorded by Vahl as having found this plant in the dry ſandy fields of Cayenne. Thonning and Braſs have gathered it on the coaſt of Guinea. Seeds were received from the latter country, and plants raiſed, by Meſſrs. Kennedy and Lee, in 1781. It is a ſlender inconſpicuous biennial herb, requiring to be kept in a ſtove, and flowering in Auguſt or September.—*Stem* erect, branched, panicled, round, leafy, from one to two feet high, nearly ſmooth. *Leaves* alternate, ſtalked, ovate, entire, ſmooth, various in ſize. *Flowers* ſmall, in long ſlender cluſters. *Corolla* pale violet, about half an inch long, ſlender; the tube greeniſh. *Capſule* pointed, about the ſize of a hemp-ſeed.

This plant has nothing to recommend it to general notice, either in appearance or qualities. As the firſt ſpecimens were brought to England from the Cape coaſt of Africa, and were miſtaken for a *Boerhavia*, thoſe who made that miſtake were loud in their complaints of the ſpecific name, *americana*; and concluded that Linnæus had made a blunder in the native country of the plant. But this concluſion led only to a ſimilar and equal incorrectneſs, in calling it Guinea Schwenkia; for it is actually a native of both thoſe parts of the globe. The Linnæan appellation therefore, though, like moſt geographical ſpecific names, liable to exception, is neither falſe, nor abſurd.

SCHWERIN, Curt, Christopher, *Count Von*, in *Biography*, a celebrated Pruſſian general, was born of a noble family in the year 1684. He was educated till the age of 13 at home, under the direction of able tutors; but having loſt his father in 1697, he was left to the care of his mother and an uncle, the Heſſian general Detlof von Schwerin, who had diſtinguiſhed himſelf in the war in Brabant. By the friendly aſſiſtance of the latter, who ſent for him to the Hague, he was enabled to proſecute his ſtudies at Leyden, and other places; but in the 17th year of his age he relinquiſhed ſcientific purſuits, and entered into the Dutch ſervice, in the regiment commanded by his uncle, and in which his eldeſt brother, who was afterwards killed, in 1704, in the ſtorming of Donaverth, held a commiſſion. In 1705 he was made a captain at the early age of 21, and in the following campaigns ſerved under prince Eugene, and the duke of Marlborough, and from theſe able commanders learned thoſe principles of the art of war, which, in the courſe of his military career, he practiſed with ſo much ſucceſs. About this time his uncle quitted the army with an intention of ſpending the remainder of his days in retirement, and on this account the nephew reſigned his company, and entered into the ſervice of the duke of Mecklenburg-Schwerin, in which he obtained, in 1706, the rank of lieutenant-colonel. In the following year he obtained a regiment, and by his excellent conduct he gained the confidence ſo completely of his ſovereign, that in 1712 he was diſpatched on a miſſion to Charles XII. of Sweden. In 1718 he became a major-general; and in 1719, during the diſpute between duke Charles Leopold and the Mecklenburg nobility reſpecting their privileges, he was employed, and diſplayed all the energy and prudence which the buſineſs ſeemed to require. His own property was ſituated in Pomerania, which being ceded to the king of Pruſſia, he immediately entered into his ſervice, and obtained a regiment in 1722. In conſequence of diſturbances at Thorn, he was ſent by the king as envoy to the royal Poliſh and electoral court of Saxony; but being unable to accompliſh the object of his miſſion, he quitted Dreſden, with the conſent of his ſovereign, and reſigned his office to his brother. In 1730 he was made governor of Peitz, and next year was promoted to be a lieutenant-general, and honoured with the order of the Black Eagle. In 1733 he marched with three Pruſſian regiments to Mecklenburg, and took poſſeſſion of ſome places in that duchy, which were not reſtored to the duke till 1787. He now roſe into great favour with the king, Frederic William I., was his conſtant companion, and accompanied him to all his reviews. In 1739 he became a general of infantry; and at the funeral of the king, in 1740, bore the banner of the kingdom. He was raiſed the ſame year to the rank of count, as was alſo his brother, by Frederic II., and at the ſame time nominated a field-marſhal. On the death of the emperor Charles VI. he was ſent for by the king, that he might confer with him on meaſures neceſſary to be purſued in regard to the approaching war; and his regiment, which broke up in December, was the firſt that entered the Sileſian territories. He ſhortly after reduced many ſtrong places, and in January 1741 attended the king when he entered Breſlau, and ſhortly after advancing and croſſing the river Neiſs, he occupied the important paſs of Jablunka. In the month of February, having given up his command, he proceeded to Breſlau, and after making ſome important preparations and eſtabliſhing magazines, he returned to the army. In the month of April he obtained a great victory at Molwitz, which determined the future fate of Sileſia. On this occaſion, though wounded ſeverely and often, he never quitted the field, and by his ability and great preſence of mind rallied the Pruſſian troops, after they had been thrown into diſorder, which rendered the iſſue of the battle, at one time, extremely doubtful. On the breaking out of the ſecond Sileſian war, Schwerin conducted a part of the Pruſſian army through the country of Glatz to Bohemia, took poſſeſſion of many great towns, and levied heavy contributions. He was very inſtrumental in taking Prague, and ſigned the articles of capitulation on the part of the king of Pruſſia. After this the king took a ſtep contrary to the advice and opinion of his favourite marſhal, which induced him to quit his command, and retire to his eſtate. The coolneſs that now ſubſiſted between the king and Schwerin was not removed till 1747, when Frederic invited him to Berlin, and he was afterwards placed in a very conſpicuous ſituation in the ſeven years' war. In 1756 he attacked very ſucceſsfully, with his advanced guard, a body of Auſtrians, and deſtroyed the bridge on the Elbe at Schirſitz. About the ſame time the king had been conqueror in the bloody engagement at Lowoſitz, and having ſent a letter to the field-marſhal to acquaint him with the victory, the latter wrote him back that he heartily congratulated him, but had the battle been fought by a ſubject, inſtead of a king, he would thereby have expoſed his life to danger. In 1757, having now done wonders in the cauſe in which he had embarked, he joined the royal army encamped before Prague. In this ſituation the king determined to give the enemy battle; the marſhal oppoſed the plan, on account of the unfavourableneſs of the place; but when he found him determined, he, at length, yielded. The battle was fought on the 6th of May, and was one of the bloodieſt in which the king was ever engaged. "The Pruſſians," ſays the hiſtorian, "performed wonders, and diſplayed a bravery beyond all praiſe; but in conſequence of a moſt deſtructive fire of grape-ſhot, and the difficulty of approaching the enemy, they began to loſe courage and to give way. Schwerin, who was poſted before a narrow paſs, ſeeing his regiment giving way, ſnatched the colours from an enſign of the ſecond battalion; placed himſelf in front of the regiment, and calling out to his men, 'Do you not ſee the enemy turning their backs,' encouraged them by that addreſs to advance." Scarcely, however, had he proceeded a few ſteps, before he fell covered with wounds, in the 73d year of his age. This laſt act of the hero turned the fate of the day, and ſecured for the Pruſſians a decided victory. The field-marſhal's body was conveyed to a neighbouring convent, to which the king went for the purpoſe of viewing it, and deploring the fate of his general. To commemorate the event, a plate was engraved by Berger, and the king cauſed a ſtatue of white marble to be erected in William's Place at Berlin. Schwerin was a ſevere diſciplinarian; he enforced ſubordination with great rigour; he poſſeſſed a moſt delicate ſenſe of honour, which he made a great point of maintaining. He knew how to preſerve his dignity with princes of the royal blood, and always obliged them to treat him with reſpect. He entertained an unfeigned reverence for religion, and paid particular attention to thoſe who were actuated by the ſame principles, and often uſed to ſay that a brave general ought to be a good Chriſtian. Gen. Biog.

Schwerin, in *Geography*, a city of the duchy of Mecklenburg, in which the dukes of the Schwerin line uſually reſide, ſituated on a pleaſant lake abounding with a variety of fiſh, and which, ſurrounding the greateſt part of the town, gave name to it. It is nearly ſquare, and conſiſts of three parts, *viz.* Schwerin, the New Town, and the Moor. The duke's palace ſtands on an iſland in the lake, being fortified, and communicating with the town by means of a bridge. This palace contains a collection of very valuable paintings; 54 miles E.S.E. of Lubeck. N. lat. 53° 40′. E. long. 11° 24′.—Alſo, a principality about 20 miles long and 6 broad, ſurrounded by the duchy of Mecklenburg. It was founded in 1170 by Henry the Lion, duke of Saxony and Bavaria, at the town of Schwerin, whence it has obtained its name. At the peace of Weſtphalia in 1648 it was, from having been a biſhopric, converted into a temporal principality of the empire, and aſſigned to the dukes of Mecklenburg of the Schwerin line, with rights of ſeats and voice in the college of the princes of the empire, and likewiſe in that of the circle of Lower Saxony.

SCHWERTBERG, a town of Auſtria; 10 miles E. of Steyregg.

SCHWERTE, or **Schwierte**, a town of Germany, in the county of Mark, ſurrounded with walls in 1242; 64 miles E.N.E. of Duſſeldorp. N. lat. 51° 24′. E. long. 7° 32′.

SCHWERZ, a town of Saxony, in the territory of Leipſic; 1 mile N. of Duben.

SCHWESNITZ, a town of Germany, in the principality of Culmbach; 5 miles N.E. of Kirch Lamitz.—Alſo, a river of Germany, in the principality of Culmbach, which runs into the Saal, near Kotzau.

SCHWETZ, a town and caſtle of Pomerelia, on the W. ſide of the Viſtula; 7 miles N. of Culm.

SCHWEYGEN, a river of France, which runs into the Erbach near Deuxponts.

SCHWEYNINGEN, a town of Swabia, from which the Auſtrians were driven by the French in 1799.

SCHWIBUSIN, or **Schwiebus**, a town of Sileſia, and capital of a circle, in the principality of Glogau; 40 miles N.N.W. of Gros Glogau. N. lat. 52° 20′. E. long. 15° 42′.

SCHWIEBEDOWE, a town of Sileſia, in the principality of Oels; 4 miles S. of Militſch.

SCHWINAU, a river of Weſtphalia, which runs into the Ilmenau, near Ultzen, in the principality of Luneburg Zelle.

SCHWINDL, Frederic, in *Biography*, a very agreeable and pleaſing compoſer for violins. The trios and ſymphonies of this author were ſo admired in England, before the Manheim and Vienna ſchools were known, that Giardini ſcarcely played any other at his academia. But when he went to Italy, they were wholly laid aſide in this country. Yet even 30 or 40 years ago, though Schwindl's compoſitions were admired by dilettante in Germany, profeſſors who allowed the author to have genius, denied him taſte, force, and correctneſs. He flouriſhed chiefly from the year 1765 to 1786.

SCHWINE, in *Geography*, one of the mouths of the Oder, which paſſes into the Baltic, between the iſlands of Uſedom and Wollin.

SCHWINEMUNDE, a town of Germany, on the E. coaſt of the iſle of Uſedom, built in 1775, and ſituated on the *Schwine*; 12 miles E. of Uſedom. N. lat. 53° 56′. E. long. 14° 12′.

SCHWINGE, Swinge, or *Zwinge*, a river of the duchy of Bremen, which paſſes by Stade, and runs into the Elbe, four miles below it. N. lat. 53° 38′. E. long. 9° 23′.

SCHWINGEN, a town of Germany, in the principality of Culmbach; 6 miles S.E. of Culmbach.

SCHWITZ. See Schweitz.

SCHWOCHAT, a town of Auſtria, on a river of the ſame name; 6 miles S.E. of Vienna.

SCHWOLBE, a river of France, which runs into the Erbach near Deuxponts.

SCHWOLMEN, a town of Pruſſia, in the province of Natangen; 8 miles N. of Heilſberg.

SCHWYB, a town of Africa, in the kingdom of Sennaar; 49 miles N. of Sennaar.

SCIA, in *Ancient Geography*, a town of Greece, in the iſle of Eubœa.

SCIABONIS, in *Geography*, a town of Perſian Armenia; 90 miles E.S.E. of Erivan.

SCIADEPHORI, σκιαδηφοροι, formed of σκιαδεια, *an umbrella*, and φερω, *I carry*, among the *Athenians*, an appellation given to the ſtranger women reſiding in Athens, becauſe they were obliged, at the feſtival Panathenæa, to carry umbrellas to defend the free women from the weather.

SCIÆNA, in *Ichthyology*, a genus of fiſhes of the order Thoracici, of which the generic character is as follows; the head is covered with ſcales; the ſcales are ſtrongly fixed; the gill-membrane with about ſix rays; the covers are ſcaly; it has two dorſal fins, frequently concealed in a longitudinal cavity. In Gmelin's edition of Linnæus, 29 ſpecies are deſcribed. The fiſhes of this tribe have their ſcales very minute, ſmooth, and towards the back and belly they are raiſed and looſe; the jaws are of unequal length, furniſhed with a great number of ſharp and incurvated teeth, covered with two thick lips; a ſingle dorſal and anal fin, with a looſe appendage beyond the rays; the ventral fins are placed on the thorax, a little behind the pectoral, and ſharpened at the point. Many of the fiſhes belonging to this genus are black, and have obtained from the old naturaliſts the names of ſea-crows, ravens, and umbres.

The name *ſciæna* is of Grecian origin, derived from the word σκια, *a ſhadow*. The fiſh had this name from its being of a duſky or ſhadowy colour.

Species.

Cappa. Sides of the head with a double row of ſcales. It is an inhabitant of the Mediterranean.

Lipisma. In this the dorſal fin is concealed between two ſcaly leaves.

Unimaculata. This has a brown ſpot on the middle of each ſide.

Umbra; Sea-crow. The body of this ſpecies is varied with black; the ventral fins are very entire. It is found in the Mediterranean and European ſeas. In ſhape it reſembles a perch; the ventral and anal fins are as black as if dyed with ink; the back is variegated with undulating lines of dark brown and blue; the ſnout is ſharp; the mouth capacious, and inſtead of teeth, it is roughened with ſmall aſperities: around the roſtrum there are various ſmall apertures; thoſe of the noſtrils wide and placed near the eyes. On the back are two fins ſo cloſely adjoining, that they appear ſingle and contiguous. It is a native of the Mediterranean, and ſold in great quantities in the markets of Rome, where it is called ombrino.

Cirrosa. The upper jaw is the longer of the two, and the lower one has a cirrus. It inhabits the European and American ſeas, and is about a foot long. The body is yellowiſh; beneath it is ſomewhat ſilvery, with oblique blackiſh ſtripes; the tail is ſemilunar.

Hamrur. This ſpecies is red, with a coppery gloſs; the fins are more duſky; the mouth is ſubvertical; the ſcales are membranaceous at the edges. It is found in Arabia; the body is oblong, and the ſcales are ſmall.

Vulviflamma. This is yellowiſh, with longitudinal golden ſtripes; the ſides are marked with a black ſpot; the dorſal fins convex.

Kasmira. This is a yellowiſh fiſh, with four large ſtripes on each ſide. It is an Arabian fiſh, as are almoſt all the others.

Bohar. Reddiſh, with whitiſh lines and clouds. The body is oblong, coated with ſmooth ſcales; it is of a doubtful genus; when alive, it has two large ſpots on the back, which diſappear when the fiſh is dead.

Gibba. Reddiſh, dotted with white; the back is gibbous; the body is oval; the ſcales are red, tipt with white. The upper and middle teeth are contiguous; the canine are diſtant, and twice as large as the others; the dorſal and anal fins are rectangular behind.

Nigra. The body of this is black; the belly is of a whitiſh-brown. The ſcales are very entire.

Argentata. Scales above are blackiſh, with ſilvery edges and tips; beneath pale rufous, with pale edges; it reſembles the S. bohar. The head is curved, with a blue patch running under the eye towards the mouth.

Rubra. This is of a duſky red, beneath white, with eight longitudinal reddiſh-white ſtripes on each ſide, growing duſky towards the back. Its ſcales are a little ſpinous.

Murdjan. Lips retuſe; body with a metallic ſplendour; beneath it is paler. The body is of an oblong oval; the ſcales are broad and toothed.

Sammara. The back of this ſpecies is red, with a braſſy gloſs; the ſides are ſilvery, with ten darker ſtripes on each ſide; the lateral ſcales with a whitiſh ſpot ſurrounded with black. It is not more than two inches long, and beneath it is ſilvery.

Spinifera. This fiſh is red; the dorſal fins are connected; the head is ſpinous; the anterior gill-covers have a very long ſpine. It is about a foot long; behind the eyes, on each ſide, and at the baſe of the pectoral fins, a duſky ſpot; the ſcales are broad and indented. In the crown are two faſciculi of elevated lines behind the eyes; before the eyes is a long, deep, unequal cavity; the eyes are ſurrounded with a ſpinous bony ring; the iris is red.

Ghanam. Whitiſh; ſides with a double white ſtripe. The gill-covers are ſpinous. Parallel with the back is a lateral line, with a white ſtripe on each ſide; there is another ſtripe, compoſed of duſky quincuncal ſpots, extending from the crown to the end of the dorſal fin.

Jarbua. This ſpecies is of a ſilvery hue, with two curved ſtripes on each ſide, meeting on the back, and forming a ring; the ſpot on the middle of the back, and two bands on the front, black. Under the ſtripe, on each ſide, is a brown line, and beneath this is a yellowiſh one.

Stridens. This is ſilvery-blue, with from three to five brown longitudinal lines on each ſide. It is about four inches long, feeds on herbs, and when firſt taken out of the waters utters a low ſhriek.

Gaterina. Blueiſh-yellow, ſpeckled with black, and a few larger ſpots. There is a variety of this ſpecies which has on its body four brown ſtripes on each ſide; the fins are yellow.

Argentea. Silvery, above ſpeckled with black; the ſcales of this ſpecies are ciliate.

Nebulosa. The body of this ſpecies is marked with longitudinal blue and yellowiſh-brown clouds; a variety has its body marked with obſolete longitudinal violet ſtripes. The head is ſloping; fins filamentous, and the tail is forked.

Mahsena. Body brown, lined, and with tranſverſe waved ſilvery bands. The body is of an oblong oval; the ſcales are brown, with toothed ramifications.

Harah. This is of a greeniſh colour; the fins are of a pale red; beneath the lateral line is a black linear ſpot on each ſide. It very much reſembles the laſt.

Ramak. Greeniſh-white, with obſolete longitudinal yellowiſh-violet lines; the fins are reddiſh.

Grandoculis. Blueiſh; the lower lip is gibbous; it is of an oblong-oval form, with obſolete lines.

Cinerascens. This is of a greeniſh-aſh colour, with longitudinal lines. The body is of an oblong-ovate ſhape; the ſcales are very entire and rhombic; they are whitiſh, with a ruſty yellow ſpot at the baſe on each ſide.

Safgha. Oblong, ſilvery, without ſpots; the tail is forked. The jaws are indented, the lower one is the longer of the two; the gill-covers are finely ſerrate.

Armata. This is ſilvery; between the head and dorſal fin is a rigid horizontal ſpine; the tail is forked. The body is compreſſed, oval, and pointed. The ſpine behind the head points forwards; the lateral line is ſtraight, and the fins are white; the dorſal and anal fins are tipt with black; the tail is brown, and the inner edge whitiſh. To the foregoing may be added the following.

Labrax, or baſſe ſciæna; of which the habit is that of the ſalmon; the ſize is conſiderable, growing, it is ſaid, to the length of ſeveral feet. It is of a blueiſh-ſilvery colour, with a duſky caſt on the back; the ſcales are ſmall; the eyes are reddiſh; the mouth and gill-covers tinged with red; the tail is ſlightly forked; the lateral line is nearly ſtraight. It is a native of the Mediterranean and Northern ſeas, and often entering the rivers; it was known to the ancients by the names of *labrax* and *lupus*, and was much eſteemed as an article of food, particularly by the Romans.

Diacantha. This has longitudinal yellow lines, and two ſpined gill-covers. It is about 12 inches long, and like the labrax; the fins are glaucous, but the pectoral, ventral fins, and tail, are reddiſh at the baſe; the tail is ſlightly lunated; the eyes are yellow, and the ſcales are large. It is a native of the Mediterranean.

Undecimalis. The abdomen of this is ſilvery, the dorſal fins and tail browniſh. It is about a foot in length, is a native of the American ſeas, and very common about the coaſts of Jamaica.

Lineata. This has the habit of a trout, and is a native of the Mediterranean.

Plumieri. With tranſverſe brown bands, and yellow longitudinal lines and fins; it has the habits of a perch, and is a native of the American ſeas, and was firſt deſcribed by Bloch from a drawing by Plumier.

Mauritii. This has a browniſh back; the firſt dorſal fin is ſpiny, with nine rays. It is the ſize of a perch, and has the habit of a ſalmon; it is like the labrax, except in ſize; it is a native of Braſil, deſcribed by Bloch from a drawing by Prince Maurice.

Fulviflamma. With five or ſix longitudinal gold-coloured bands, and a middle black ſpot. The firſt dorſal fin is duſky; the ſecond and other fins are yellow; the gold-coloured lines on the body are ſometimes obſcure; the teeth are ſtrong, diſtant, and conic-ſubulate.

Macrolepidota. With tranſverſe browniſh-violet bands and ſpotted fins. It is about a foot long; the head is ſhort, and ſloping rather ſuddenly; ſcales pretty large; the dorſal, anal, and caudal fins ſpotted with brown; the pectoral fins are plain and tinged with violet; ventral fins red, eyes blue, and is a native of India.

Cylindrica. With ſeveral duſky girdles and ſpotted fins. It is ſix inches long; the eyes are prominent, and ſituated near each other at the upper part of the head.

SCIAGRAPHY, or Sciography, the profile, or ſection, of a building, to ſhew the inſide of it.

Sciagraphy, formed of σκια, *ſhadow*, and γϱαφω, *I deſcribe*, in *Aſtronomy*, &c. is a term ſome authors uſe for the art of finding the hour of the day or night, by the ſhadow of the ſun, moon, ſtars, &c. See Dial.

SCIAMACHIA, formed of σκια, and μαχω, *I fight*, the fighting with a perſon's own ſhadow, a ſort of exerciſe preſcribed by the ancient phyſicians, in which the motion of the arms, and other parts of the body, were of very great ſervice in many chronic caſes.

SCIAMANTIA, Sciamancy, or *Sciomancy*, formed from οκια, *ſhadow*, uſed metaphorically for the ſoul, and μαντεια, *divination*, a kind of divination, otherwiſe called *pſychomancy*. Sciamancy, among the ancients, was the art of raiſing and calling up the manes or ſouls of deceaſed perſons, to give intelligence of things to come. The witch who conjured up the ſoul of Samuel, to foretell Saul the event of the battle he was about to give, did it by ſciamancy.

SCIAMAT, in *Geography*, a town of Perſia, in the province of Kerman; 18 miles E. of Sirgian.

SCIANDY, a town of Hindooſtan, in Bahar; 10 miles N.N.W. of Bahar.

SCIAPODES. See Sciopodæ.

SCIARRI, in *Natural Hiſtory*, the matter which runs down in burning torrents from the craters of mount Ætna.

This matter, when cold and hard, is hewed and employed at Catania, and other places. It is chiefly uſed for the baſements and quoinage of buildings. It probably contains mineral and metallic particles, being a ponderous, hard, grey ſtone. Philoſ. Tranſ. N° 481. p. 327, 328. See Stone.

Some of the ſciarri are coarſe, and others fine, and poliſhed on the ſurface; ſome of them are black, others reddiſh, and others of the colour of iron; and many of them have coverings of pure ſulphur over the whole ſurface, or a part of it. Some very fine and ſmooth ones, reſembling iron, but very light, are found in or near the mouths of the eruption, and ſome very hard and heavy, and of a mixed nature, ſeeming to be the reſult of many ſorts of minerals melted together. Theſe latter, when the mountains have poured out ſtreams of fire, always remain in the places, and are the ſubſtance that was on fire cooled again.

At the time of the moſt terrible eruptions of this kind, theſe heaps of ſciarri, which ſometimes appear to be ſolid rocks of metalline matter, are only a ſort of covered arches, under which the melted matter yet continues liquid and running, and burſts out at times in the ſeveral parts of their ſides or ſurfaces. The general appearance of a train of theſe ſciarri, left after the eruption of ſuch a rivulet of fire, is much like that of the Thames, or ſome other ſuch large river,

river, in the time of a ſevere froſt, the rocks of ſciarri riſing above the general ſurface, like the clods of ice in that ſcene; the colour only differing, the great quantities of the ſciarri, in theſe places, being of a deep blueiſh hue.

It is remarkable, that the ſubſtance of theſe ſciarri, even while melted and running in ſtreams down the hill, is ſo firm and ſolid, that no weight will ſink into it, nor any inſtrument make its way through the ſurface, any more than a ſolid maſs of cold metal. It has been ſuppoſed by ſome, that the flowing water concreted into the common pumice ſtone, but that is a vulgar error, the pumice being a wholly different ſubſtance. Philoſ. Tranſ. N° 46.

SCIATHERICA, a name given to dialling.

SCIATHERICUM Telescopium, a horizontal dial with a teleſcope, adapted for obſerving the true time, both by day and night, to regulate and adjuſt pendulum-clocks, watches, and other time-keepers. It is the invention of the ingenious Mr. Molyneux, who has publiſhed a book with this title, containing an accurate deſcription of this inſtrument, its uſes, and application.

SCIATHIS, in *Ancient Geography*, a mountain of the Peloponneſus, in Arcadia, at the diſtance of five ſtadia from Caphyes.

SCIATHUS, or Sciathas, an iſland of the Ægean ſea, with a town of the ſame name, according to Ptolemy. Between this iſland and the coaſt of Magneſia there was a canal, which was a continuation of the ſea, called Artemiſium.

SCIATI, or Skiati, in *Geography*, a ſmall iſland in the Grecian Archipelago; 18 miles N. of Negroponte. N. lat. 39° 26′. E. long. 23° 38′.

SCIATIC, in *Anatomy*, an epithet applied to various parts ſituated about the iſchium; as, the great ſciatic nerve, the ſciatic artery, ligaments, notches, &c.

SCIATICA, in *Medicine*, a ſevere and obſtinate ſpecies of rheumatiſm, affecting the *hip-joint*, and often improperly denominated the *hip-gout*. As the diſeaſe differs from the other forms of chronic rheumatiſm only in ſituation, it requires the ſame method of treatment which has been recommended for that diſeaſe generally. See Rheumatism.

Sciatica *Creſſes*, in *Botany*. See Cresses and Dittander.

SCICHILI, in *Geography*, a town of Sicily, in the valley of Noto; 30 miles S.W. of Syracuſe. N. lat. 36° 37′. E. long. 14° 54′.

SCIDARIUM, in *Ancient Geography*, a promontory placed by Plutarch on the coaſt of Attica; in the Saronic gulf, near the town of Megara.

SCIDRUS, or Scydrus, a town of Italy, ſuppoſed to be ſituated towards Laos or Sybaris.

SCIE.—*Feuille de* Scie. See Feuille *de Scie*.

SCIELAT, in *Geography*, a town of Africa, in Nubia; 10 miles S. of Syene.

SCIENCE, formed from *ſcientia*, of *ſcire, to know*, in *Philoſophy*, a clear and certain knowledge of any thing, founded on ſelf-evident principles, or demonſtration.

In this ſenſe, *doubting* is oppoſed to *ſcience;* and *opinion* is the middle between the two.

The ſceptics profeſs to deny that we have any ſuch thing as ſcience; that is, any clear or certain notices of any thing capable of producing abſolute conviction.

Science *of Conditionals*. See Conditionals.

Science is more particularly uſed for a formed ſyſtem of any branch of knowledge, comprehending the doctrine, reaſon, and theory, of the thing, without any immediate application of it to any uſes or offices of life.

In this ſenſe, the word is uſed in oppoſition to *art*.

Indeed the preciſe notion of an art, and ſcience, and their juſt adequate diſtinction, do not ſeem to be yet well fixed. See the Preface to this Work. See alſo Art.

As to the number and diviſion of the ſciences, Mr. Locke limits them thus; all that can fall within the compaſs of human underſtanding, is, firſt, either the nature of things, their relations, and their manner of operation: or, ſecondly, that which man ought himſelf to do as a voluntary and rational agent, for the attainment of any end, eſpecially of happineſs: or, thirdly, the ways and means by which the knowledge of both of theſe is attained and communicated: upon which, ſcience may be properly divided into theſe three ſorts.

Firſt, the knowledge of things, their conſtitutions, properties, and operations, whether material or immaterial. This, in a little more enlarged ſenſe of the word, may be called φυσικη, or *natural philoſophy*. The end of this is bare ſpeculative truth, and whatſoever can afford the mind of man any ſuch, falls under this branch, whether it be God himſelf, angels, ſpirits, bodies, or any of their affections, as number, figure, &c.

Secondly, πρακτικη, the ſkill of right applying our own powers and actions for the attainment of things good and uſeful. The moſt conſiderable under this head is ethics, which is the ſeeking out thoſe rules and meaſures of human actions which lead to happineſs, and the means to practiſe them. The end of this is not bare ſpeculation, but right, and a conduct ſuitable to it.

Thirdly, σημειωτικη, or the doctrine of ſigns. The moſt uſual being words, this is aptly enough termed *logic;* the buſineſs of which is to conſider the nature of thoſe ſigns which the mind makes uſe of for the underſtanding of things, or conveying its knowledge to others. Things are repreſented to the mind by ideas, and men's ideas are communicated to one another by articulate ſounds or words. The conſideration then of ideas and words, as the great inſtruments of knowledge, makes no deſpicable part of their contemplation, who would take a view of human knowledge in the whole extent of it.

This ſeems the firſt, and moſt general, as well as the moſt natural diviſion of the objects of our underſtanding: for a man can employ his thoughts about nothing, but either the contemplation of things themſelves for the diſcovery of truth; or about the things in his own power, which are his actions, for the attainment of his own ends, or the ſigns the mind makes uſe of, both in the one and the other, and the right ordering of them, for its clearer information. All which three, *viz.* things as they are in themſelves knowable, actions, as they depend on us in order to happineſs, and the right uſe of ſigns in order to knowledge, being *toto cælo* different, they ſeem to be the three great provinces of the intellectual world, wholly ſeparate and diſtinct one from another.

Sciences, *Academy of*. See Academy.

SCIENDERGUR, in *Geography*, a fort of Hindooſtan, in Bahar; 10 miles S.S.E. of Rotaſgur.

SCIENTIA Media, in *Metaphyſics*, a kind of knowledge, which ſome divines, in their controverſies about the order of the divine decrees, attributed to the Deity, and the poſſibility of which other divines denied, while they firmly maintained the divine preſcience. (See Molinists.) It was called *ſcientia media* to diſtinguiſh it from *preſcience* (which ſee); and by this ſcientia media was meant not the knowing from eternity all things that ſhall exiſt, which is preſcience, nor the knowing of all the connections and relation of things that exiſt or may be conceived, which is *ſcience*, but a knowledge of things contingent, that never did nor ſhall exiſt: *e. g.* the knowing of every action that would be done by a man who is barely conceived, and ſhall never be brought into exiſtence. Againſt the poſſibility of the ſcientia media, arguments may be urged which cannot be applied to preſcience. Thus it may be ſaid, that nothing can be known but what is true. It is true that the future actions of a free agent ſhall exiſt, and therefore, there is no impoſſibility in its being known that they ſhall exiſt; but with regard to the free actions of an agent that never did nor ſhall exiſt, there is nothing true, and therefore nothing can be known. To ſay that the being conceived would certainly act in ſuch a way, if placed in ſuch a ſituation, if it have any meaning, is to ſay, that his acting in that way is the conſequence of the conception; but this contradicts the ſuppoſition of its being a free action.

Things merely conceived have no relations or connections but ſuch as are implied in the conception, or are conſequent from it. Thus, we conceive two circles in the ſame plane; but if this be all we conceive, it is not true that theſe circles are equal or unequal, becauſe neither of theſe relations is implied in the conception: yet if the two circles really exiſted, they muſt be either equal or unequal. Again, we conceive two circles in the ſame plane, the diſtance of whoſe centres is equal to the ſum of their ſemidiameters. It is true of theſe circles that they will touch one another, becauſe this follows from the conception: but it is not true that they will be equal or unequal, becauſe neither of theſe relations is implied in the conception, nor is conſequent from it. In like manner, we can conceive a being, who has power to do an indifferent action, or not to do it. It is not true that he would do it, nor is it true that he would not do it, becauſe neither is implied in our conception, nor follows from it; and what is not true cannot be known.

"Although," ſays Dr. Reid, "I do not perceive any fallacy in this argument againſt a ſcientia media, I am ſenſible how apt we are to err in applying what belongs to our conceptions and our knowledge to the conceptions and knowledge of the Supreme Being: and, therefore, without pretending to determine for or againſt a ſcientia media, I only obſerve, that, to ſuppoſe that the Deity prevents what he foreſees by his preſcience, is a contradiction; and that to know that a contingent event, which he ſees fit not to permit would certainly happen if permitted, is not preſcience, but the ſcientia media, whoſe exiſtence or poſſibility we are under no neceſſity of admitting." Reid's Eſſays, Eſſ. iv. See Necessity.

SCIENTIFIC, or Scientifical, ſomething relating to the pure, ſublimer ſciences; or that abounds in ſcience, or knowledge.

A work, a method, &c. is ſaid to be ſcientifical, when it is founded on the pure reaſon of things, or conducted wholly on the principles of them.

In which ſenſe the word ſtands oppoſed to narrative, arbitrary, opinionative, poſitive, tentative, &c.

SCIERIA, Σκιεϱια, in *Antiquity*, a feſtival in honour of Bacchus, kept in Arcadia.

It was ſo called, becauſe that god's image was expoſed ὗπο τῆ σκάιδι, *i. e.* under an umbrella. At this time the women were beaten with ſcourges, in the ſame manner with the Spartan boys at the altar of Diana Orthia, which they underwent in obedience to a command of the Delphian oracle.

SCIGLIO, in *Geography*, a town of Naples, in Calabria Ultra, ſituated on a rocky promontory, anciently called "Scylla," (which ſee,) and noted for ſhipwrecks. The town is partly ſituated on the ſhore, but the greater part among the rocks above it: its ſtreets are narrow, and nine different rows of houſes are obſerved ſtanding one above another, and over the higheſt of theſe, which are ſtraight rows, are ſix or ſeven others in an oblique direction; and from the rocks ruſhes a waterfall, ſuppoſed by Cluverius to be the Cratais of Homer, the fabulous mother of Scylla. The earthquake in 1783 deſtroyed ſome churches and damaged others; and though moſt of the houſes eſcaped, a great number of inhabitants periſhed. Moſt of theſe, terrified by the ſhock, fled precipitately to the ſea-ſhore, which being thrown into the ſea by the agitation and reſilition of the water, cauſed 1450 perſons to be overwhelmed by the waves.

The ancient Scylla, a rock beautifully deſcribed by Homer, elevates itſelf like a round tower, with a breadth diſproportioned to its height, and giving it a deformed aſpect; and towards the ſea it preſents a three-forked cliff, in which are diſcovered Homer's three rows of teeth. The ſummit is not pointed, for a caſtle belonging to the prince of Sciglio has been built upon it; 10 miles N.N.W. of Reggio. N. lat. 38° 14′. E. long. 16° 2′. See Scylla, and alſo Charybdis.

Sciglio *di St. Maria*. See *St.* Maria.

SCILLA, in *Botany*, σκιλλα of the Greeks, by which was underſtood a great bulbous-rooted plant, of the onion kind, and of an acrid quality; not to be ſafely taken into the ſtomach without repeated boiling and dilution, and moſt famous, in the form of a cataplaſm, for curing the bites of ſerpents. Our *Scilla maritima* appears really to be the plant of Dioſcorides. According to Dr. Sibthorp, it is common in Greece, and ſtill called σκίλλα by the modern inhabitants of that country.—Linn. Gen. 166. Schreb. 222. Willd. Sp. Pl. v. 2. 125. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 364. Prodr. Fl. Græc. Sibth. v. 1. 231. Ait. Hort. Kew. v. 2. 262. Broter. Luſit. v. 1. 526. Desfont. Atlant. v. 1. 297. Juſſ. 53. Lamarck Illuſtr. t. 238.—Claſs and order, *Hexandria Monogynia*. Nat. Ord. *Coronariæ*, Linn. *Aſphodeli*, Juſſ.

Gen. Ch. *Cal.* none. *Cor.* Petals ſix, ovato-lanceolate, ſpreading at the bottom, as well as at the extremity, ſometimes converging in the middle, deciduous. *Stam.* Filaments ſix, thread-ſhaped, inſerted into the petals, and half as long; anthers oblong, incumbent. *Piſt.* Germen ſuperior, roundiſh; ſtyle ſimple, erect, the length of the ſtamens, deciduous; ſtigma ſimple. *Peric.* Capſule ſomewhat ovate, ſmooth, with three furrows, three cells, and three valves. *Seeds* ſeveral, roundiſh, compreſſed.

Eſſ. Ch. Corolla of ſix petals, ſpreading at the bottom. Filaments thread-ſhaped. Stigma ſimple. Capſule ſuperior, of three cells. Seeds roundiſh. Calyx none.

Obſ. The moſt learned botaniſts are puzzled to diſtinguiſh this genus from *Ornithogalum*; ſee that article; inſomuch that ſome have declared they ſcarcely knew a diſtinction, but in the colour of the flowers, which in *Ornithogalum* never incline to blue or purple. The dilatation of ſome, at leaſt, of the filaments, in that genus, at their baſe, ſeems to us a better mark; and the thicker ſtigma may poſſibly aſſiſt. *Scilla* differs from *Hyacinthus* in having ſix petals, inſtead of a monopetalous, tubular, more or leſs deeply divided, corolla; though we cannot but acknowledge their great natural affinity, and the near approximation of certain ſpecies of each. *Scilla* is but incompletely detailed in Willdenow, nor have all the Linnæan ſpecies been perfectly underſtood by any body. We hope to throw ſome new light upon them, as well as to enrich the genus with ſeveral diſcoveries of recent authors.

1. S. *maritima*. Officinal Squill, or Sea Onion. Linn.

Sp. Pl. 442. Willd. n. 1. Ait. n. 1. Redout. Liliac. t. 116. Woodv. Med. Bot. t. 118. (S. radice albâ; Rudb. Elyſ. v. 2. 147. S. hiſpanica vulgaris; Ger. Em. 171. Ornithogalum Squilla; Ker in Curt. Mag. t. 918.)—Root globular; ſquarroſe at the top. Flowers much earlier than the leaves, in a long, denſe, cylindrical cluſter. Lower bracteas elongated at the baſe.—Native of the ſandy ſhores of France, Spain, Portugal, Sicily, Italy, and the Levant, flowering in ſummer. Sometimes it occurs far inland. The *root* is often of five or ſix inches diameter, well known for its medical qualities, which are of a diuretic kind. By inducing nauſea, it alſo promotes expectoration, and increaſes the action of the whole abſorbent ſyſtem; ſo as to prove a moſt valuable medicine in dropſical diſorders as well as in complaints of the cheſt. Its outer coat is either pale and whitiſh, or of a purpliſh-red. *Flowers* extremely numerous, in a very long, ſimple, ſtalked *cluſter*. *Petals* elliptical, white, ſpreading widely throughout. *Anthers* green. *Stigma* quite ſimple, and not thicker than the *ſtyle*. The *leaves* come long after the *flowers* are gone, and are numerous, large, elliptic-oblong, aſcending, recurved.

2. S. *Lilio-hyacinthus*. Lily-rooted Squill. Linn. Sp. Pl. 442. Willd. n. 2. Ait. n. 2. Redout. Liliac. t. 205. (Hyacinthus ſtellaris, &c.; Lob. Ic. 101. f. 1, 2. H. ſtellaris, foliis et radice lilii; Rudb. Elyſ. v. 2. 35. f. 13. H. ſtellatus latifolius; Ger. Em. 107.)—Bulb ovate, ſcaly. Cluſter of few flowers.—Native of Spain, the Pyrenées, and the weſtern parts of France, flowering in ſummer. The *bulb* is very peculiar in this genus, conſiſting of large, whitiſh, lax ſcales, like that of a lily, but its whole dimenſions do not exceed a walnut. *Leaves* ſeveral, obovate-oblong, bluntiſh, ſpreading and deflexed, four or five inches long, and above one broad. *Stalk* ſolitary, from among the leaves, eight or ten inches high. *Flowers* from ſix to nine, erect, light blue, moderately expanded, with narrow, awl-ſhaped, membranous, erect, tapering, ſolitary *bracteas*, about the length of the partial ſtalks. Willdenow, not having ſeen this ſpecies, any more than ourſelves, attempted to improve its ſpecific character from the wooden cuts of Cluſius, repeated in Lobel and Gerarde; but the more finiſhed repreſentation of Redouté ſhews their's to be incorrect as to the *bracteas*. Linnæus might formerly have ſeen this *Scilla* in Clifford's garden, but his own herbarium is deſtitute of a ſpecimen; and though Gerarde, it ſeems, cultivated the plant, miſerable would be the diſappointment of thoſe who ſhould look for it in any of the modern gardens of England. It has always been one of our greateſt deſiderata. Perhaps roots might now be procured from Paris.

3. S. *lingulata*. Tongue-leaved Squill. Desfont. Atlant. v. 1. 298. t. 85. f. 1. Redout. Liliac. t. 321.—Leaves lanceolate, ſpreading, flat; enveloped in a common membranous ſheath. Cluſter denſe, conical. Bracteas awl-ſhaped, divided. Stalk ſtriated, roughiſh.—Native of cultivated fields in Barbary, from whence it was brought by profeſſor Desfontaines. Linnæus had ſpecimens from Algiers, but left them undetermined. The *bulb* is ovate, the ſize of a hazel-nut. *Leaves* about ſix, two or three inches long, broadly lanceolate, ſomewhat tongue-ſhaped, ſpreading in the upper part, the lower half being confined in a peculiar white membranous ſheath, which we have not ſeen in any other ſpecies. In our dried ſpecimen the ribs and edges of the *leaves* appear minutely rough, and the elevated lines of the *ſtalk*, which is four or five inches high, are more remarkably ſo. *Flowers* from five to ten, rather ſmall, moderately ſpreading, light blue. *Partial ſtalks* about as long as the flowers, roughiſh, with two awl-ſhaped *bracteas*, nearly the ſame length, of a thin membranous texture.

4. S. *villoſa*. Hairy-leaved Squill. Desfont. Atlant. v. 1. 299. t. 85. f. 2.—"Leaves lanceolate, flat, villous. Flowers corymboſe."—Gathered by Desfontaines in ſandy ground near Kerwan, in Barbary. *Bulb* twice the ſize of the laſt. *Leaves* about ſix, ſpreading circularly, linear-lanceolate, three or four inches long, clothed with copious longiſh hairs. *Flowers* about eight, large, blue, widely expanded, forming a corymboſe cluſter, their common *ſtalk* not ſo long as the leaves. *Bracteas* lanceolate, concave, the length of the partial ſtalks. *Desfont.*

5. S. *italica*. Italian Squill. Linn. Sp. Pl. 442. Mant. 364? Willd. n. 3. Ait. n. 3; excluding the reference to Redouté. Curt. Mag. t. 663. Allion. Pedem. v. 2. 163. Redout. Liliac. t. 304. (Phalangium n. 1212; Hall. Hiſt. v. 2. 102, excluding the ſynonyms. Hyacinthus ſtellaris italicus; Beſl. Eyſt. vern. t. 42. f. 1. H. ſtellatus, cineracei coloris; Cluſ. Hiſt. v. 1. 184. H. ſtelleris Someri; Ger. Em. 108.)

β. S. luſitanica; Linn. Syſt. Nat. ed. 12. v. 2. 243. Willd. n. 12. Ait. n. 10. (Hyacinthus ſtellatus cæruleus, ſtaminulis e viridi luteis; Rudb. Elyſ. v. 2. 34. f. 4.)—Leaves numerous, linear, flat; triangular at the keel. Cluſter oblong, ſomewhat conical. Bracteas two or three together, linear.—Native of Piedmont, in ſtony, but rather rich and ſhady places. *Allioni*. In meadows near Berne, in Switzerland. *Haller*. *Davall*. *Bulb* oval, ſolid, ſmooth, the ſize of a pigeon's egg. *Leaves* a ſpan long, flat, but with an acute keel, making a ſort of triangular channel above. *Stalk* a foot high. *Cluſter* denſe, of numerous *flowers*, of a pale and aſhy blue, often white. The *bracteas* vary in length, but are always narrow and membranous, dilated at the very baſe only. *Partial ſtalks* twice or thrice the length of the *flowers*, almoſt erect. *Corolla* widely expanded.—Such is the original *S. italica* of Linnæus, which we obtained from the Edinburgh garden, in 1782, by the name of *S. hyacinthoides*. Linnæus ſubſequently miſtook for this ſpecies, a luxuriant ſpecimen of our *verna*, and having none but this latter in his herbarium, deſcribed a broadiſh-leaved variety of *italica*, which he then had in the Upſal garden, perhaps from Portugal, under the name of *luſitanica*. This indeed has ſhorter *bracteas* than uſual, but cannot be ſeparated from *italica*, of which Rudbeck's figure is even a better repreſentation than of the ſaid variety. The learned editor of Hort. Kew. has miſtaken *S. umbellata* of Redouté for *italica*, miſled, as it ſeems, by the luxuriant habit of his t. 166, which approaches to tab. 663 of the Botanical Magazine; while, on the other hand, Redouté's t. 304, though undoubted *italica*, has the flowers rather too ſmall, and of too bright a ſky-blue. See the following ſpecies.

6. S. *verna*. Vernal Squill. Hudſ. 142. Fl. Brit. n. 1. Engl. Bot. t. 23. Willd. n. 11. Ait. n. 9. (S. bifolia; Lightf. 181. Fl. Dan. t. 568. S. umbellata; Redout. Liliac. t. 166. S. vincentina; Hoffm. and Link. in Ann. of Bot. v. 1. 102? Ornithogalum hiſpanicum minus; Cluſ. Hiſt. v. 1. 188. Ger. Em. 166. Hyacinthus parvus ſtellatus vernus; Beſl. Eyſt. vern. t. 37. f. 4. H. ſtellaris minimus; Rudb. Elyſ. v. 2. 36. f. 16. H. ſtellaris vernus parvulus, flore ex cæruleo cinereo; Bauh. Hiſt. v. 2. 581.)—Leaves linear, channelled; ſemicylindrical beneath. Corymb hemiſpherical, of few flowers. Bracteas ſolitary, ovate, concave, with a bluntiſh point.—Native of cliffs towards the ſea, in the Feroe iſlands, iſles of Man and Angleſea, Hebrides, the coaſts of Wales, Cornwall, France, Portugal and Spain, as well as on the Pyrenées. The *bulb*, as well as the whole plant, is ſmaller than in any of the foregoing; but the herbage varies conſiderably in luxuriance, according to ſoil or culture. Hence Redouté's figure has been miſtaken for *S. italica*; and we

ourſelves have long ſuppoſed that ſome of the above ſynonyms referred to a different ſpecies. We are now convinced that Mr. Hudſon is correct in his citations ; and that *S. italica* of the Linnæan herbarium, which is not an original ſpecimen, is truly a luxuriant plant of *verna*. The channelled round-keeled *leaves*, and broad, concave, ſolitary *bracteas*, as well as the richer deeper blue of the *flowers*, clearly diſtinguiſh this ſpecies, which ought to ſtand next to *italica*, Willdenow having miſplaced it. We ſhould have no doubt reſpecting Hoffmannſegg and Link's *S. vincentina*, were not its *bracteas* ſaid to be in pairs.

7. S. *tetraphylla*. Four-leaved Squill. Linn. Suppl. 200. Willd. n. 4.—Leaves about four, ovato-lanceolate, ſpreading. Common ſtalk none. Flowers numerous, cluſtered, with lanceolate bracteas.—Gathered by Forſkall in the Levant, and communicated by Fabricius to Linnæus. The four or five broad, depreſſed, widely-ſpreading, ribbed *leaves*, four inches long, and the central tuft of numerous ſtalked *flowers*, intermixed with long *bracteas*, give this ſpecies a ſingular aſpect, and diſtinguiſh it clearly from all others hitherto known.

8. S. *peruviana*. Great Corymboſe Squill. Linn. Sp. Pl. 442. Willd. n. 5. Ait. n. 4. Curt. Mag. t. 749. Redout. Liliac. t. 167. (Hyacinthus ſtellatus peruanus ; Beſl. Eyſt. vern. t. 41. f. 1. H. peruanus ; Ger. Em. 109. H. indicus bulboſus ſtellatus ; Rudb. Elyſ. v. 2. 37. f. 1. Eriophorus peruanus ; Cluſ. Hiſt. v. 1. 173.)—Leaves flat. Corymb many-flowered, denſe, conical. Bracteas tapering ; broad at the baſe.—Native of Portugal and Spain ; not of Peru, unleſs it was originally brought from thence, for which there is no good authority. It is hardy in our gardens, flowering, though not very conſtantly, in May. The *bulb* is as big as a ſmall orange. *Leaves* many, dark green, ſpreading, oblong, an inch and half wide. *Flowers* extremely numerous, dark blue, with purple ſtamens and piſtil, and yellow pollen, forming a large, conical, ſtalked tuft, and making a very handſome appearance, though devoid of fragrance.

9. S. *japonica*. Japan Squill. Thunb. Jap. 137. Willd. n. 6.—" Flowers earlier than the leaves, in a level-topped umbel. Petals tapering at the baſe."—Native of Japan, where it is called *Kotjo*. Thunberg ſays he never ſaw any *leaves* on the flowering plant. The *ſtalk* is four or five inches high. *Bracteas* on the ſtalk, and under the flowers, alternate, membranous, lanceolate, upright, cloſe-preſſed, the length of the finger-nail, ſhorter than the intermediate ſpaces. *Corolla* pale purple ; its *petals* tapering at the baſe into claws. *Stigma* capitate, lobed.—Theſe two laſt characters lead us greatly to doubt the genus of this plant, which is only known by Thunberg's account.

10. S. *amoena*. Nodding Squill. Linn. Sp. Pl. 443. Willd. n. 7. Ait. n. 5. Jacq. Auſtr. t. 218. Redout. Liliac. t. 298. Curt. Mag. t. 341. (H. ſtellaris byzantinus ; Beſl. Eyſt. vern. t. 45. f. 3. Ger. Em. 107.)—Leaves flat, bluntiſh, tapering at the baſe. Common ſtalk angular, racemoſe. Partial ſtalks about the length of the flowers. Bracteas very ſhort, obtuſe. Petals widely ſpreading from the baſe.—Said to grow wild in the Levant. It is naturalized on the banks of the Danube, and even in the weſt of England, being an old and very general garden plant, flowering in March and April. The *leaves* are ſeveral, linear, broadiſh, and flaccid, above a foot long. *Flowers* of a fine blue, from four to ſix, flat, and turned vertically to one ſide, each about an inch in diameter. *Anthers* violet. *Germen* yellowiſh-green.

11. S. *cernua*. Cup-flowered Squill. Redout. Liliac. v. 5. p. 298. (S. amoena ; ibid. t. 130. S. amoena β ; Willd. Sp. Pl. v. 2. 128.)—Leaves flat, bluntiſh. Stalk angular, about two-flowered, ſoon decumbent. Bracteas very ſhort, obtuſe. Flowers drooping ; ſomewhat bell-ſhaped at the baſe.—Native of the ſouth of Europe. Common in the French gardens, but we have not noticed it in England. Redouté, who, like other botaniſts in general, at firſt confounded this with the laſt ſpecies, has ſince diſtinguiſhed it, by the *leaves* being ſhorter, broader, and darker coloured ; the *ſtalk* decumbent immediately after flowering ; the *flowers* fewer, more drooping ; and the *petals* converging in their lower part into a bell-ſhaped poſition, inſtead of ſpreading widely from the very baſe. It blooms ſtill earlier than the true *S. amoena*.—Whether *S. ſibirica*, Andr. Repoſ. t. 365. Ait. n. 6. (S. amoena ſibirica ; Curt. Mag. t. 1025.) be a variety of the laſt, or of the *amoena*, or intermediate between both, proving them all one ſpecies, we dare not preſume to decide, but we confeſs our doubts of its being a good ſpecies. *S. præcox*, Willd. n. 8, is, it ſeems, by his own confeſſion in Schrader's Journal for 1799, p. 1. 287, a variety, or rather a ſtarved plant, of *bifolia*. We have a ſimilar ſpecimen from the Levant, in the Linnæan herbarium.

12. S. *campanulata*. Spaniſh Squill. Ait. n. 7. Willd. n. 9. Curt. Mag. t. 128, 1102. (S. patula ; Redout. Liliac. t. 225. S. hyacinthoides ; Jacq. Ic. Rar. t. 65. Hyacinthus floribus campanulæ ; Rudb. Elyſ. v. 2. 27. f. 9, 10.)—Leaves numerous, lanceolate, rather concave. Cluſter many-flowered, erect. Flowers drooping, bell-ſhaped. Bracteas deeply divided, awl-ſhaped.—Native of Spain, Portugal, Switzerland, and Italy. Abundant in the neighbourhood of Rome. Common in the Engliſh gardens, for 250 years paſt, flowering in the ſpring. The *bulb* is round, ſolid, white, about an inch in diameter. *Leaves* about half a dozen, a foot long, ſpreading, rather flaccid, ſlightly channelled. *Stalk* taller than the leaves, round, erect, bearing a ſimple, nearly upright, denſe *cluſter* of numerous, deep blue *flowers*, all drooping and turned to one ſide. *Bracteas* erect, coloured, broad at the baſe, uſually deeply divided, one ſegment much longer than the adjoining partial ſtalk. The *petals* converge into a bell-ſhaped figure, and are recurved for about half their length. Their colour varies to white, or a pale bluſh. Linnæus at one time confounded this with *S. italica*, and afterwards with his *Hyacinthus non ſcriptus*. (See the next ſpecies.) Some Swiſs botaniſts have fallen into the latter miſtake ; and indeed it appears by Reynier's herbarium, that our *S. campanulata* is what grows in the places indicated by Haller for his n. 1248, taken by him for the following.

13. S. *nutans*. Hare-bell Squill, or Wild Hyacinth. Fl. Brit. n. 4. Engl. Bot. t. 377. (S. non ſcripta ; Redout. Liliac. t. 224. Ker in Curt. Mag. under p. 1102. S. feſtalis ; Saliſb. Prodr. 242. Hyacinthus non ſcriptus ; Linn. Sp. Pl. 453. Willd. Sp. Pl. v. 2. 166. Ait. Hort. Kew. v. 2. 282. Curt. Lond. faſc. 2. t. 18. H. anglicus ; Ger. Em. 111. H. oblongo flore cæruleus major ; Rudb. Elyſ. v. 2. 26. f. 1. H. cernuus ; Linn. Sp. Pl. 453.)—Leaves numerous, linear, rather concave. Cluſters many-flowered, drooping. Flowers pendulous, cylindrical-bell-ſhaped, on very ſhort ſtalks. Bracteas in pairs. Abundant in groves and thickets in England and France, flowering in May. Differs from the laſt in having much longer, more cylindrical, *flowers*, narrower *leaves*, and a more nodding poſture in the upper part of the *cluſter*, by which the flowers become perfectly pendulous. The *ſtamens* are united to the *petals* above half their length. The *flowers* have a light ſweet ſcent, more perceptible than in the preceding, and reſembling that of the Dark China Roſe, *Roſa ſemperflorens*.

They ſometimes vary in colour to white or pale red, and in the latter caſe the plant becomes the Linnæan *Hyacinthus cernuus*. Had we been aware of this circumſtance, we ſhould originally in Engliſh Botany have named the preſent ſpecies *S. cernua*, inſtead of *nutans*, that it might have been ſupported by a right of priority as well as ſenſe. *Non ſcriptus*, having a reference to the poetical and botanical hiſtory of the *Hyacinthus* alone, is nonſenſe when applied to a *Scilla*. It is curious that theſe two ſpecies, which ſo many botaniſts have conſidered as the ſame, ſhould by ſome writers be ſtill retained in different genera; though no one could ever find, in the preſent plant, either one or the other of the eſſential Linnæan characters of *Hyacinthus*. The *corolla* is not *ſexfida*, but *hexapetala*; nor are there any melliferous pores on the *germen*! The *corolla* is more permanent in theſe two laſt-deſcribed ſpecies, and in *peruviana*, than in the generality of *Scillæ*.

14. S. *bifolia*. Two-leaved Squill. Linn. Sp. Pl. 443. Willd. n. 10. Ait. n. 8. Fl. Brit. n. 2. Engl. Bot. t. 24. Jacq. Auſtr. t. 117. Curt. Mag. t. 746. Redout. Liliac. t. 254. (H. ſtellatus Fuchſii; Ger. Em. 106. H. ſtellaris bifolius germanicus; Rudb. Elyſ. v. 2. 33. f. 1. Narciſſus martius; Brunſ. Herb. v. 1. 184. Star Hyacinth; Petiv. Herb. Brit. t. 67. f. 5.)—Leaves two, lanceolate. Cluſter ſomewhat corymboſe, of a few erect flowers, without bracteas.—Abundant in ſhady groves of Germany, France, Italy, and Greece, flowering in March and April. It is ſaid to have been found alſo in the weſt of England, but we know not the preciſe ſpot. In Italy this plant and *Anemone apennina* occupy the places of *S. nutans* and *A. nemoroſa* in England. (See Sm. Tour on the Continent, ed. 2. v. 2. 152.) We have never met with the Engliſh Harebell in Italy, though *S. campanulata* is common in the ſouthern parts. The preſent is a ſmaller plant than either, with only two, linear-lanceolate, channelled *leaves*. *Flowers* uſually four or five, of a rich deep blue, occaſionally white or pink; their *petals* widely ſpreading. *Anthers* dark. The two firſt words of the ſpecific character in Hort. Kew. require to be expunged.

15. S. *orientalis*. Oriental Squill. Thunb. Tr. of Linn. Soc. v. 2. 334. Willd. n. 13. (S. bifolia; Thunb. Jap. 138.)—"Leaves elliptic-ſword-ſhaped. Flowers racemoſe, erect."—Native of Japan. Radical *leaves* ſeveral, tapering at the baſe, ſmooth, a ſpan long. *Stalk* two feet high, erect, ſmooth, with alternate ſheath-like ſcales. *Thunb.* This truly ſeems to have little reſemblance to *S. bifolia*, for which it was originally miſtaken in the *Flora Japonica*.

16. S. *hyacinthoides*. Hyacinthine Squill. Linn. Syſt. Nat. ed. 12. v. 2. 243. Suppl. 201. Willd. n. 14. Ait. n. 11. Curt. Mag. t. 1140. Hoffm. and Link in Sims and Kon. Ann. of Bot. v. 1. 105. Gouan Illuſtr. 26. Brot. Luſit. v. 1. 528. (Bulbus eriophorus; Cluſ. Hiſt. v. 1. 172. Ger. Em. 121.)—Leaves numerous, oblong, nearly flat. Cluſter very long. Partial ſtalks ſpreading, ſomewhat whorled. Bracteas minute, abrupt, a little diſtant.—Native of Madeira, Portugal, and the Levant. The *bulbs*, which multiply rapidly, and compoſe denſe maſſes, are not rare in gardens, but they very ſeldom flower. The *leaves* are an inch or inch and half wide, and from twelve to eighteen long. *Stalk* three or four feet in height, round, bearing an extremely long, cylindrical, dull purple, upright *cluſter*, of innumerable *flowers*, ſpreading vertically, on *ſtalks* four times their own length. *Anthers* greeniſh.

17. S. *autumnalis*. Autumnal Squill. Linn. Sp. Pl. 443. Willd. n. 15. Ait. n. 12. Fl. Brit. n. 3. Engl. Bot. t. 78. Curt. Lond. faſc. 6. t. 25. Redout. Liliac. t. 317. Cavan. Ic. t. 274. f. 2. (Hyacinthus autumnalis minor; Cluſ. Hiſt. v. 1. 185. Ger. Em. 110. β. Curt. Mag. t. 919? H. autumnalis major; Cluſ. Hiſt. v. 1. 185. Ger. Em. 110.)—Leaves linear, channelled, recurved. Cluſter many-flowered. Partial ſtalks curved upwards, without bracteas, as long as the flowers.—Native of ſunny, graſſy, gravelly hills and paſtures, in England, France, Spain, Italy, and Greece, flowering in autumn. The *bulb* conſiſts of rather lax coats. The *leaves* are numerous, varying in length and breadth. *Flowers* rather ſmall, widely expanded, of an elegant crimſon, with darker anthers Redouté makes them too blue.

18. S. *obtuſifolia*. Blunt-leaved Squill. Desfont. Atlant. v. 1. 299. t. 86. Redout. Liliac. t. 190.—Leaves tongue-ſhaped, wavy, ſpreading. Cluſter many-flowered, without bracteas.—Gathered by Desfontaines, near La Calle, in Barbary. The *flowers* accord pretty nearly with the laſt, inſomuch that Linnæus, who had ſpecimens, without foliage, from Algiers, did not doubt their being his *autumnalis*; but the very different *leaves* of the preſent plant, an inch in breadth, and but ſlightly concave, with wavy edges, afford an obvious diſtinction.

19. S. *parviflora*. Small-flowered Red Squill. Desfont. Atlant. v. 1. 300. t. 87. (S. autumnalis; Curt. Mag. t. 919?)—Leaves linear-lanceolate, acute, ſmooth, ſlightly concave, erect. Cluſter many-flowered. Bracteas minute, awl-ſhaped, deciduous.—Native of cultivated fields about Algiers. The *flowers* reſemble thoſe of the two laſt in ſtructure and colour, but the preſence of *bracteas*, obſerved by Desfontaines, and in the Botanical Magazine, though never, we believe, ſeen in the true *S. autumnalis*, are characteriſtic of this ſpecies, which is further diſtinguiſhed by the greater breadth and flatneſs of its *leaves*. It flowers in winter.

20. S. *undulata*. Wave-leaved Squill. Desfont. Atlant. v. 1. 300. t. 88.—Leaves lanceolate, criſped at the margin, ſpreading horizontally. Cluſter lax, many-flowered. Bracteas awl-ſhaped, minute.—Native of uncultivated hills in Barbary. Very frequent about Tunis, Algiers, &c. flowering in autumn and the beginning of winter. The numerous, greatly undulated *leaves*, ſpreading in a depreſſed circle, are peculiar to this ſpecies. The *flowers* are of a pale roſe-colour, twice the ſize of the laſt, and fade before the foliage appears.

21. S. *pumila*. Dwarf Squill. Brot. Luſit. v. 1. 527. (S. monophyllos; Hoffm. and Link, in Sims and Kon. Ann. of Bot. v. 1. 104.)—Leaf ſolitary, lanceolate, channelled, recurved. Cluſter corymboſe, of few flowers. Bracteas ſhort, lanceolate.—Native of ſandy thickets and heaths in Portugal, flowering in February and March. Our ſpecimen was gathered by the abbé Durand in Algarvia. The *bulb* reſembles *S. autumnalis*. *Leaf* three or four inches long, almoſt always ſolitary. *Stalk* erect, ſomewhat compreſſed, longer than the leaf, bearing from ſix to twenty blue *flowers*, not unlike thoſe of *S. bifolia*, but rather ſmaller, and accompanied by white, membranous, lanceolate, acute *bracteas*, about one-fourth the length of the partial ſtalks.

This laſt ſpecies is very different from *S. unifolia*, Linn. Sp. Pl. 443. Willd. n. 16. Ait. n. 13. Curt. Mag. t. 935, which has ſeſſile white *flowers*, with flat *filaments*, and is properly referred, in the work laſt cited, as well as in the Ann. of Bot. v. 1. 106, to *Ornithogalum*, to which genus *S. anthericoides*, Desfont. Atlant. v. 1. 301, probably likewiſe belongs.

We are not acquainted with *S. odorata*, of Hoffmannſegg and Link, in Ann. of Bot. v. 1. 105, which they ſay comes near to Rudbeck's figure, quoted by Linnæus for the *luſitanica*.

tanica. (See our n. 5, β.) Its elegant ſweet-ſcented blue *flowers* adorn in ſpring all the hills of Algarvia.

SCILLA, in *Gardening*, contains plants of the hardy bulbous-rooted perennial kind, of which the ſpecies cultivated are; the officinal ſquill (S. maritima); the lily-rooted ſquill (S. lilio-hyacinthus); the Italian ſquill (S. italica); the Peruvian ſquill (S. peruviana); the nodding ſquill (S. amoena); the Spaniſh ſquill (S. campanulata); and the autumnal ſquill (S. autumnalis).

In the firſt ſort there are varieties with a red, and with a white root.

In the fourth ſort alſo there are varieties with a deep blue, and with a white flower: this kind is often known by the name of hyacinth of Peru.

With regard to the laſt ſort it is obſerved, that moſt old writers diſtinguiſh a larger and a ſmaller ſort; but theſe differ merely in ſize; and ſome have likewiſe noticed a variety with white flowers.

Method of Culture.—Theſe plants may be increaſed by off-ſets from the roots, and by ſeeds, but the firſt is the better mode. The off-ſets may be taken off every other year, and be planted out at the time the leaves and ſtems decay.

But the ſeed ſhould be ſown in autumn, on light mould, in ſhallow boxes or pans, in the ſame manner as in the hyacinth, the ſame circumſtances being attended to in the culture. The plants are long in flowering in this way, except in the laſt ſpecies, which ſhould have a dry loamy ſoil.

The firſt ſort, as being a native of the ſea-ſhores, cannot be well propagated in other ſituations, as the plants are apt to be deſtroyed by the froſts in winter, and to grow indifferently in the ſummer ſeaſon for the want of ſalt-water.

The roots of moſt of the different ſorts are durable, and may be met with in the generality of the nurſery-grounds about London.

They afford variety in the beds and borders of pleaſure-grounds, when properly planted out.

SCILLA, in the *Materia Medica.* See SQUILL.

SCILLITANA COLONIA, *Caſſareen*, in *Ancient Geography*, an ancient town of Africa, ſituated on an eminence, ſix leagues W.S.W. of Sufetula. Near it is a triumphal arch.

SCILLONEORTE, Σκιλλων Ἑορτη, in *Antiquity*, the feſtival of ſea-onions. It was obſerved in Sicily. The chief part of it was a combat, in which youths beat one another with ſea-onions. He that obtained the victory was rewarded by the gymnaſiarch with a bull.

SCILLUNS, or SCILLUNTE, in *Ancient Geography*, a town of Triphylia, on the bank of the river Chalchis, at ſome diſtance from the ſea.

SCILLY ISLANDS, in *Geography*, a cluſter of iſlands, included in, or belonging to, the county of Cornwall, England, are ſituated in the Engliſh Channel, at the diſtance of nearly thirty miles weſtward from a point of the Corniſh coaſt, called the Land's End. They appear to have been known to the ancients under the name of the Caſſiterides, at a very remote period. Diodorus, Strabo, Solinus, and other writers, mention that the Phœnicians, and after them the Carthaginians and Greeks, traded hither for tin, of which metal the Caſſiterides are deſcribed as poſſeſſing many extenſive and valuable mines. "Theſe iſlands," obſerves Strabo, in his Geography, "are ten in number, and lie contiguous to each other. One of them is deſert, and uninhabited; the others are peopled by a race of men who wear black garments, and a long robe reaching down to their heels, and bound about their waiſts, and who walk about with long ſtaves, reſembling the furies of tragedians. They have mines of tin and lead, which, together with hides, they exchange with merchants for earthenware, ſalt, and braſs-work." Of this ancient ſtate of things ſcarcely a veſtige now remains. The iſlands have increaſed to upwards of 140 in number, beſides innumerable rocks, in conſequence of the inundation of the low lands by the ocean. "The inhabitants," ſays Borlaſe, "are all new-comers; not one old habitation, nor any remains of Phœnician or Grecian art, in the ports, caſtles, towns, temples, nor ſepulchres. All the antiquities here to be ſeen are of the rudeſt Druid times; and if borrowed in any meaſure from the oriental traders, were borrowed from their moſt ancient and ſimple rights." Theſe facts, however, do not warrant the doubts entertained by ſome as to the ſtatements in the ancient hiſtorians, relative to the reſort to, and trade with, theſe iſlands in very remote ages. There ſtill exiſt in all of them abundant proofs of their having been once fully cultivated and peopled. That they were inhabited by the ſame race as the Cumraig Britons, is evident, or very probable, from the numerous remains of rude pillars, circles of erect ſtones, kiſtvaens, and other monuments, which are common in Cornwall and Wales; and from other relics of Celtic colonization. Beſides, even at this day, many of the little iſlets, and ſome cairns, or karns, and creeks in the larger ones, are deſignated by Britiſh names. It becomes, therefore, a queſtion of curious ſpeculation, to enquire how the ancient inhabitants have ſo completely vaniſhed, that the preſent have no pretenſions to any affinity, or connection of any kind with them, either in blood, language, or cuſtoms. Two cauſes for this extinction are ſuggeſted by Borlaſe; the gradual advances of the ſea, and ſome ſudden ſubmerſion of the land. Of the continual operation of the firſt cauſe, there can be no doubt; for even within the laſt thirty years the progreſs of the ocean has been very conſiderable. What we perceive occurring in our own times, we may reaſonably conclude to have happened formerly: in ſhort, it appears clear that there has been a progreſſive declenſion and diminution of the land, and a proportionate aſcendency of the ſea, for many ages. This fact is ſtill further evidenced by the circumſtance of ruins and hedges being frequently ſeen upon the ſhifting of the ſands, in the friths between the iſlands. In ſome places theſe hedges have been diſtinctly traced from one iſland to another, affording an undeniable proof of their former union.

With regard to the ſecond cauſe of the extinction of the old race of inhabitants, a ſudden ſubmerſion of the land, though not ſo evident as that firſt noticed, is nevertheleſs probable. The exiſtence of tin and lead-mines in theſe iſlands, above two centuries before the Chriſtian era, cannot be queſtioned; yet no remains of ſuch mines are now diſcoverable. To account for this fact, Borlaſe thinks the gradual advances and ſlow depredations of the ſea will not ſuffice; as it ſuppoſes a very extraordinary riſe in the whole maſs of the ſurrounding ocean.

It ſeems remarkable, that the iſland whence the whole number derive their generic name ſhould be one of the ſmalleſt among them; a ſpot, "whoſe cliffs hardly any thing but birds can mount," and whoſe barrenneſs almoſt precludes the poſſibility of human habitation. The apparent ſingularity of this circumſtance, however, is eaſily ſolved, by adopting the very probable opinion of Borlaſe, that all the iſlands and rocks adjoining anciently formed only one iſland, having ſeveral headlands, of which Scilly was the "higheſt, outermoſt, and conſequently moſt conſpicuous." This iſland, the ſame author conjectures, might have received the name of Syllê, or Sulléh, (which, in Britiſh, ſignifies flat rocks, dedicated to the ſun); and having ſome ſmaller iſlands ſcattered round it, imparted the ſame appellation to them; "whence, what were called by the Greeks Caſſiterides, were named by the Latin authors, Sigdeles, Sillinæ, Silures; and by the Engliſh, Sylley, Sulley, and Scilly; though the appellation is not ſpelt with the *c* in any ancient record.

At what period the Scilly iſlands were firſt occupied by the Romans is not recorded; but after that people had ſubdued Britain, theſe inſulated tracts appear to have been aſſigned as a ſort of Botany Bay, or place of baniſhment for ſtate criminals.

Athelſtan, king of the Weſt Saxons, ſubdued them in the tenth century; from which time we hear nothing of them, till the breaking out of the civil wars between king Charles I. and the parliament, when they became of conſiderable importance. In 1645 they afforded a temporary aſylum to prince Charles, and his friends lord Hopton and lord Capel. At that period ſir John Grenville was governor of the iſlands, which he fortified and held for the king; and occaſioned great annoyance to the parliament for ſome years, by the numerous captures made by his frigates. At length, however, he ſurrendered to an expedition under the command of admiral Blake and ſir George Ayſcue, having aſcertained that reſiſtance would prove unavailing.

The property of the Scilly iſlands was beſtowed by king Athelſtan, on “certain monks of the Carmelite order.” How long they held them is unknown, but they had reverted to the crown in the time of king Henry I., who granted “to Oſbert, abbot of Taviſtock, all the churches of Sullye, with their appurtenances, and the land, as the monks and hermits held it in the time of Edward the Confeſſor, and Burgald, biſhop of Cornwall.” In the reign of Edward I. they were held by Ralph de Blanchminſter, under the duchy of Cornwall, by the annual render of 300 puffins at Michaelmas. In the reign of Henry VI. they were the property of ſir John Coleſhill, from whom they paſſed to the families of Danvers and Whittington, and were purchaſed from the latter by Thomas lord Seymour, lord-admiral in the reign of Edward VI. In 1552 they were leaſed to the family of Godolphin; and are now held under that tenure by the duke of Leeds.

The only inhabited iſlands in the cluſter are St. Mary's, Treſcaw, St. Martin's, St. Agnes, Sampſon, and Brehar.

St. Mary's is the largeſt of all the Scilly iſlands, and the beſt cultivated. It is about ten miles in circumference, and contains a population of 1271 perſons. On this iſland is *Hugh*, or *Heugh-town*, the capital of Scilly, where nearly half the inhabitants of St. Mary's reſide. It is ſituated upon the low land of the iſthmus that joins the main part of the iſland to the high ground of the garriſon, and conſiſts of one long ſtreet, interſected by two others of leſs extent. Here is a cuſtom-houſe, to which belong a collector, ſurveyor, and ſix other officers; alſo a council-houſe and a priſon. At the weſt end of the town is the pier, which was rebuilt by the earl of Godolphin about the year 1750. It is 430 feet long, and is calculated to ſecure veſſels of 150 tons burden. In the vicinity are the remains of an old fortreſs, with a mount, and likewiſe the ruins of ſeveral block-houſes and batteries, ſuppoſed to have been conſtructed during the civil wars. The church ſtands about a mile from the town; and at the diſtance of a quarter of a mile further, along the ſhore, is Old Town, formerly the principal place in the iſland. Adjoining this, on an eminence, are ſome veſtiges of Old Town caſtle, which is mentioned by Leland, in his Itinerary, as being, in his time, a “moderately ſtrong pile, but diſmantled.” Giant's Caſtle bay, to the eaſtward, derives its name from an earthen work ſo called, which Troutbeck attributes to the Danes. Near it is one of thoſe monuments of antiquity called rocking-ſtones; and on the ſummit of a hill oppoſite, are the remains of a circle of ſtones. Some of theſe meaſure 20 feet long, and 43 feet in circumference. Exterior to the circle are ſeveral ſepulchral barrows. Another ſimilar monument is ſituated on Sullakee downs; and this alſo is ſurrounded by tumuli of different ſhapes and ſizes. On the weſtern ſide of the iſland are the barracks, and ſeveral batteries, likewiſe the king's Star-caſtle, ſo called from the figure of its plan, projecting every way, like the rays of a ſtar. This fortreſs commands a proſpect of all the iſlands, and the ſeas around them. It was erected by ſir Francis Godolphin, in the reign of queen Elizabeth, and is now uſually occupied by the commanding officer on the iſland, and a detachment from the barracks. “It was in this caſtle,” ſays Lyſons, “that Dr. John Baſtwick was impriſoned, by order of the court of ſtar-chamber, in 1637, after having loſt his ears on the pillory, for writing againſt the church and ſtate; his ſentence was impriſonment for life, but he was liberated by order of parliament in 1640. The ſeverity of his ſentence cauſed great odium againſt the government; and he and his fellow ſufferers, Prynne and Burton, who had been ſent to other diſtant priſons, were conducted into London, on their return, with much triumph and rejoicing.”

Treſcaw, or *Treſco* iſland, the ſecond largeſt in the group, lies two miles north from St. Mary's. The capital village here is called Dolphin, and conſiſts of the church and about thirty houſes. The chief havens in the iſland are Old and New Grimſby harbours. On the eaſt ſide of the latter ſtand the ruins of Cromwell's caſtle, as it is called, from its having been built by the parliamentarians. It was repaired in 1740, but is now completely gone to decay from neglect. Upon an eminence to the north-eaſt appear the remains of another fort, named Old Caſtle, which is deſcribed by Leland as a “little pile,” though it meaſures 50 feet in length, and 30 in breadth; but it might probably be enlarged after his time. On this iſland are ſome veſtiges of the conventual church of St. Nicholas, of which there is a view given in Borlaſe's Obſervations on the Scilly Iſlands. This monaſtery was founded in the tenth century, and was ſubſequently enriched by ſeveral of the earls of Cornwall. Treſcaw is little more than half the ſize of St. Mary's, and only contains 465 inhabitants.

St. Martin's iſland, the third largeſt of the Scilly iſlands, lies about a mile to the eaſtward of Treſcaw. It is nearly ſix miles in circumference, and contains, by eſtimation, 720 ſquare acres. About 150 years ago it had not one inhabitant; and even ſo late as 1756, there were only 18 reſident families, all of whom were related; but the population has now increaſed to 235 perſons. On this iſland are ſeveral cairns, and alſo ſome ſmall circles of ſtones.

St. Agnes iſland is ſituated three miles S.W. from Heugh-town, and meaſures about four miles round. Here are alſo ſeveral ſtone circles, and a ſingular rock, denominated the Giant's Punch-bowl, which has a baſin excavated on its upper ſurface, ſeven feet diameter and three feet broad. But the moſt prominent object on the iſland is the light-houſe, which is a ſtone ſtructure, 72 feet high, and placed upon a lofty eminence, whence it can be ſeen in every direction by navigators. The inhabitants on St. Agnes iſland are 244 in number. The other inhabited iſlands, *Brehar* and *St. Sampſon*, do not exhibit any object worthy of notice. The former contains 111 perſons, and the latter only 32.

In fine weather theſe iſlands are eaſily diſcernible from the coaſt of Cornwall, “appearing like a cluſter of cliffs, or fragments of ruined caſtles, round which the Atlantic rolls in a vaſt curve.” The paſſage from Penzance to theſe iſlands is rendered extremely dangerous by numerous ledges of rock, one of which, called the Gulph or Wolf, ſituated about midway, has been the occaſion of many ſhipwrecks. The climate here is mild and healthy; the cold of winter, and the heat of ſummer, being equally moderated by the influence of the temperate breezes of the ocean.

With reſpect to civil government, the Scilly iſlands can ſcarcely be ſaid to have ſuch, there being no legally conſtituted magiſtrate in any of them. Previous to the reformation, it appears that the proprietor kept the peace with the aſſiſtance of twelve armed men; and that there were frequently quarrels between them and the king's coroner, who viſited the iſlands occaſionally, for the trial of the higher offences. At preſent, perſons accuſed of felonies are ſent to Cornwall to be tried at the county aſſizes; but all minor crimes and civil ſuits are cognizable by a court delegated by the lord proprietor, whoſe immediate authority for exerciſing the civil juriſdiction is derived ſolely from a patent granted by king William. The court conſiſts of twelve of the principal inhabitants, and ſits monthly at Heugh-town, St. Mary's, for the deciſion of cauſes. Vacancies in this court are ſupplied by election; but the whole may be diſſolved, and a freſh appointment made, at any time, by the lord proprietor.

The inhabitants of the Scilly iſlands are chiefly engaged either in agriculture, in fiſhing, or in the manufacture of kelp. Cattle are fed on moſt of the iſlands; but they are neither abundant, nor remarkable for ſize. The corn produce conſiſts principally of barley, peas, and oats, with a ſmall proportion of wheat; a few acres are ſown with pillis; and potatoes are cultivated in great quantities, eſpecially in St. Mary's. The proceſs for making kelp was firſt introduced here in 1684, by a Mr. Nance, whoſe memory is, in conſequence, ſtill revered by the inhabitants. He reſided on the iſland of Tean, which is now uninhabited.—Antiquities, Hiſtorical and Monumental, of the County of Cornwall, by William Borlaſe, LL.D., F.R.S., folio. Lond. 1769. Borlaſe's Obſervations on the Iſlands of Scilly, 4to. Oxford, 1756. The Hiſtory of Cornwall, by the Rev. R. Polwhele, vol. iii. ſupplement, 4to. Falmouth, 1803. A Survey of the Ancient and Preſent State of the Scilly Iſlands, by John Troutbeck, 8vo. Sherborne, no date. A Natural and Hiſtorical Account of the Iſlands of Scilly, by Robert Heath, 8vo. Lond. 1750. Lyſons's Magna Britannia, Cornwall, 4to. 1814. Beauties of England and Wales, vol. ii. by John Britton and E. W. Brayley, 8vo. 1801.

SCILLY *Iſlands*, a group of iſlands, or ſhoals, in the South Pacific ocean, reckoned extremely dangerous; ſo named by captain Wallis, in 1767. S. lat. 16° 28′. W. long. 155° 30′.

SCIMPODIUM, Σκιμποδιον, among the *Ancients*, a ſmall couch or bed, on which one perſon only could reſt at a time. It was on the ſcimpodium that the Romans uſed to lay themſelves when weary or indiſpoſed.

The ſcimpodium was ſometimes uſed inſtead of the lectica, to carry both men and women, not only through the city, but likewiſe in journies into the country.

SCINCOIDES, in *Zoology*. See LIZARD.

SCINCUS, the *Scink*, the name of a ſpecies of lizard, called alſo by ſome the land crocodile, *crocodilus terreſtris*, and formerly well-known in the druggiſts' ſhops as an ingredient in ſeveral compoſitions. See LIZARD.

SCIND, or SINDY, in *Geography*, a country of Aſia, ſituated between N. lat. 23° and 27°, and E. long. 67° and 71°. Its general boundaries, according to the ſtatement of Kinneir, are the country of Cutch and the Indian ocean to the S., the provinces of Marwar, Joudpore, and Jeſſelmere, to the E.; thoſe of Bhakor, Moultan, and the dominions of the king of Cabul, to the N.; and on the W. Mekran and the mountains of Balouchiſtan. The river Indus, and its branches, interſect this country, and increaſe its fertility, forming a *delta*, in length about 300 miles, along the coaſt. It has been aſſerted, in conſequence of the inquiries made by Mr. Ellis in 1809, that this noble river and the Panjab form a junction, a few miles S.W. of a place called Chaſepoor, ſituated N. lat. 28° 31′. E. long. 69° 55′. The collective waters are then ſaid to take a direction towards the W., and to throw out many branches, which fertilize the country to a great extent on both ſides. About 15 miles to the S. of Shikarpoor, the principal ſtream ſeparates into two channels, the moſt conſiderable of which continues its courſe as far as Sehwaun, where it again turns to the E., and after detaching another ſmall branch, about 12 miles to the N. of Hydrabad, once more bends to the W., and enters the ſea at a place called Lahery Bunder, in N. lat. 24° 22′. E. long. 67° 23′. This is deſcribed by the natives as an arm of the ſea, and navigable for large veſſels as far as Dharaja Bunder, three days' journey from Lahery Bunder; and here goods are unloaded, and conveyed as far as Moultan and Lahore in kantauls, or boats, which carry about 100 tons, are flat-bottomed, but of great width, and when the wind is contrary, are either drawn along the banks of the river, or puſhed forward with poles. The moſt eaſtern branch, now called the Nulla Suncra, is ſaid to be about a degree diſtant from the main ſtream in the parallel of Hydrabad. It formerly entered the ſea at Lukput Bunder, but is now, if the report of the natives may be credited, entirely loſt in the ſands. The Fuloolee branch, which we have already mentioned as ſeparating from the main ſtream 12 miles above Hydrabad, becomes again connected with it by an artificial cut, about 20 miles below that city. This channel is ſeven miles in length, and that portion of the waters which does not flow through it into the principal ſtream of the Indus, enters the ſea at Lukput Bunder, under the name of Goonee. The courſe of the Goonee at Ali Bunder, in N. lat. 24° 24′, begins to be obſtructed by ſhoals; and there is reaſon to apprehend, that in a few years it will, like the Nulla Suncra, be abſorbed by the ſands. The principal ſtream is in general about a mile in breadth, and varying in depth from two to five fathoms. The ſwelling of the Indus, occaſioned by the melting of the ſnow in the mountains of Caſhmire, uſually commences in the beginning of July, and continues to increaſe until the latter end of Auguſt. But to return from this digreſſion; Scind or Sindy is repreſented by major Rennell as extending along the courſe of the Indus from its embouchure to Behker, or Bhakor, on the frontiers of Moultan, and may be reckoned at leaſt 300 Britiſh miles in length that way. Its breadth is very irregular; it may be about 160 miles in the wideſt part. On the N.E. lie the territories of the Seiks; and on the N. thoſe of the king of Candahar; on the W. is Mekran, a province of Perſia, whoſe prince is tributary to the king of Candahar. A ſandy deſert bounds Sindy on the E., and extends the whole way from the territory of Cutch to the confines of Moultan; being near 350 Britiſh miles in length, and from 100 to 150 wide. This is the ſandy deſert mentioned by Herodotus, as the eaſtern boundary of India. The province of Sindy, in many particulars of ſoil and climate, and in the general appearance of its ſurface, reſembles Egypt; it may be termed a level country, interſected with rocky hills: the lower part of it is compoſed of rich vegetable mould, and extended into a wide delta; while the upper part is a narrow ſlip of country, confined on the Perſian ſide by a ridge, or ridges of mountains, and on the other by a ſandy deſert;

the river Indus, equal at leaſt to the Nile, winding through the midſt of this level valley, and annually overflowing it. It is ſubject to continual droughts; and on this account, as well as the vicinity of the ſandy deſerts bounding it on the E., and not far remote on the N.W., the heats are ſo violent, and the winds from theſe quarters ſo pernicious, that the houſes are contrived ſo as to be occaſionally ventilated, by means of apertures on the tops of them, reſembling the funnels of ſmall chimnies. The roofs are compoſed of thick layers of earth, inſtead of terraces. Few countries are more unwholeſome to European conſtitutions, particularly the lower part of the *Delta,* which ſee. Notwithſtanding the circumſtances already recited, as well as the ignorance and oppreſſion of the preſent rulers of Scind, who have incloſed, and converted the moſt fruitful diſtricts into gloomy and impervious foreſts, for the amuſement of hunting, it is ſtill capable of cultivation, and continues to export a conſiderable quantity of rice and grain. The country is, in general, in a ſtate of culture, for 30 or 40 miles on each ſide of the river; except at Sehwaun, where a great range of mountains, on the weſtern ſide, approaches to within 15 miles of the principal ſtream.

The internal government of Scind or Sindy is a military deſpotiſm; and the ſupreme authority is veſted in three brothers, of a race originally ſpringing from Balouchiſtan; who divide the country in different proportions between them. The population is principally compoſed of Mahometan tribes from Balouchiſtan. There is, however, a conſiderable number of Hindoos, who enjoy the confidence of their prince, and are allowed the free exerciſe of their religion, according to Kinneir; but Rennell ſays, they are treated with great rigour, and not permitted to erect any pagodas, and other places of worſhip, ſo that by this ſeverity of their Mahometan governors, vaſt numbers of them are driven into other countries. They are chiefly employed in commerce, while the Mahometans conſtitute the military order; and in peace become huſbandmen and artificers. According to a treaty concluded in 1739, between Nadir Shah and the emperor of Delhi, Scind is nominally ſubject to the king of Cabul, and ought to pay a yearly tribute of 12 lacs of rupees; but this is never done, except when payment is enforced by the advance of an army to the frontiers. The ruling family can bring into the field a force of 36,000 irregular cavalry, armed with matchlocks, ſwords, and ſhields, and intended, at the ſame time, to act as infantry, whenever circumſtances require it. Commerce and agriculture have rapidly declined; nor is this ſurpriſing under the preſent rulers, who levy on foreign and domeſtic trade a duty equal to two-thirds of the capital of the merchant and the mechanic. They monopolize the grain, which they purchaſe, by compulſion, at a low price from the cultivators, and retail at an exorbitant rate. The capital of Scind was formerly *Tatta* (which ſee), but it is now *Hydrabad,* the reſidence of the Ameers, ſituated in N. lat. 25° 22′. E. long. 68° 41′, on an eminence, the foot of which is waſhed by the Fuloolee branch of the Indus. This is eſteemed by the natives a ſtrong fortreſs. (See HYDRABAD.) The ſuburb, together with the city, is ſaid to contain 14 or 15,000 inhabitants. Hydrabad yields, without much encouraging induſtry, a revenue of 60,000 rupees. The artiſans are numerous and ſkilful, particularly the armourers. Amercote, the retreat of Humaioun, formerly belonged to Scind, but is now in the poſſeſſion of the rajah of Joudpore. Corachie, 57 miles from Tatta, is the only good ſea-port in Scind. It lies 17 miles E. by S. of cape Monze, in N. lat. 24° 51′ 15″, and E. long. 67° 16′, at the head of a bay which affords good ſhelter for ſhipping, and veſſels of 300 or 400 tons burthen may enter the harbour at high water, from the beginning of September to the latter end of May. The harbour is defended by a caſtle, built in 1801, where are mounted a few pieces of uſeleſs cannon. The ſoil about Corachie is ſandy and ſtony, but capable of cultivation during the rains. The fruit of the date-trees never comes to perfection. Here are lemons, mangoes, grapes, plantains, and alſo water and muſk melons; but, with the exception of the pumpkin and brinjal, there are no vegetables at Corachie. The water is brackiſh; fuel and forage are ſcarce; ſheep are indifferent, but the camels and draught bullocks are excellent. The population at Corachie is eſtimated at 8000 ſouls, the majority being Hindoos, chiefly engaged in commercial concerns. The exports of the country conſiſt chiefly of rice, glue, hides, ſhark-fins, ſaltpetre, potaſh, aſſa-fœtida, tatta-cloth, indigo, frankincenſe, and coarſe cloths. Theſe articles are conveyed, in the fair ſeaſon, in "dingees," or ſmall coaſting veſſels, with one maſt and a very high ſtern, to Bombay, Guzerat, and the coaſt of Malabar, from whence are returned pepper and other ſpices, iron, lead, ſteel, elephants' teeth, cochineal, with ſandal wood and other woods. Boats proceed up a ſmall creek, in five or ſix days, from Corachie. The town of Gugah contains 600 inhabitants, and is ſituated at the foot of a hill, at the bottom of which runs a ſmall creek, in N. lat. 24° 45′. E. long. 68° 7′; and the extenſive ruins of Bamborah, in N. lat. 24° 46′. E. long. 67° 50′, are ſuppoſed to be thoſe of the ancient city of Braminabad. There are many other ſmall towns in the province of Scind or Sindy. Rennell's Memoir. Kinneir's Mem. of the Perſian Empire.

SCINDALMOS, a word uſed by the ancients to expreſs a fiſſure of the cranium, or of any other part.

SCINGOMAGUS, in *Ancient Geography,* a town ſituated in the Alps, S.W. of Ocelum.

SCINTILLA VENERIS, a term uſed by Paracelſus to expreſs a reſolution of the limbs, a deprivation of motion from a venereal cauſe.

SCIO, anciently *Chios* (which ſee), in *Geography,* an iſland in the Grecian Archipelago, in extent ſomewhat leſs conſiderable than "Leſbos;" being in length from N. to S. about 50 miles, and varying in breadth, on account of the windings of the coaſt, nearly 12 miles towards the S. part, and 15 towards the N. part: ſeparated from Aſia Minor by a channel eight or nine miles in width. Beyond the plain that extends to the ſouth of the capital, and in the whole ſouth part of the iſland, the lands are almoſt every where ſuſceptible of culture, although they are, in general, of middling quality. The ground is leſs elevated, leſs uneven than in the N. part, and the population is there more conſiderable. According to the regiſters of the government, the population of Scio is to be eſtimated at 110,000 inhabitants. In the capital are reckoned 30,000, *viz.* 3500 Turks, 1500 Greek Roman Catholics, and 25,000 Greek ſchiſmatics; to which number may alſo be added about 100 Jews. In the iſland are 68 villages, all inhabited by Greeks. Thoſe villages which furniſh maſtic, to the number of 21 or 24, are the moſt populous and moſt wealthy: the largeſt of all is Pirghi, ſituated to the W.; and next to this, Ninita, Calamoti, and Calimatia, towards the S. are the moſt conſiderable of the iſland. Voliſſo, ſituated on the ſea-ſhore, oppoſite to Pſera, is remarkable for the rude and almoſt ſavage air of its inhabitants. However, all the villages, whatever may be their extent and ſituation, are tolerably well built, and have almoſt all of them an incloſure capable of ſecuring them from a coup de main of a corſair. The inhabitants of Scio are peculiarly diſtinguiſhed from the other Greeks by a decided inclination towards commerce, an ardent taſte for the arts, and an eager deſire of enterpriſe; by a ſprightly, pleaſant, epigrammatic wit; and, occaſionally, a ſort of mad and burleſque gaiety, which has given riſe to the following proverb: "It is as uncommon to find a green horſe as a prudent Sciot." Notwithſtanding this ſarcaſm, there are many of the Sciots who know how to combine the moſt circumſpect prudence with the moſt amiable and the moſt lively ſprightlineſs. No other town, ſays Olivier, preſents ſo great a maſs of information; no other contains ſo many men exempt from prejudices, abounding with good ſenſe and reaſon, and bleſſed with a head better organized. Some among them, however, may be reproached with a ridiculous pride and a miſplaced fanaticiſm. The influence of the prieſthood, it is obſerved, is perhaps too great in a country that wiſhes to apply itſelf to agriculture and commerce.

The women, notwithſtanding their groteſque dreſs, are more amiable than thoſe of the capital, becauſe they are more courteous, more gay, more lively, and more witty. They are ſeen with tolerable freedom at their own home in preſence of their relations; and they enjoy, more than elſewhere, a liberty which they ſeldom abuſe. They ſpend, in all ſeaſons, part of the day in ſinging and working, playing or amuſing themſelves before their houſes. On the eſplanade, in the gardens, and round the town, you will meet on Sundays and holidays, groups of young damſels, who are free and playful, and pleaſant both in addreſs and repartee. But the married women are more reſerved; and the females of Scio in general are particularly circumſpect and ſhy with regard to the Turks. There are not to be found, ſays Olivier, in any other country of the Levant, ſo many beautiful women as at Scio; and yet, overpowered by a bad taſte, they uſe too freely red, white, and black colouring, which, ſo far from adding to their charms, cauſe that ſoftneſs to diſappear, conceal that delicate complexion, and deſtroy that bloom, which every where render women ſo agreeable and ſo captivating. They frequent the baths much more than the females of Smyrna and Conſtantinople. The whiteneſs of their teeth is aſcribed to their inceſſant chewing of maſtic, or to their diſuſe of ſmoking, in which the other females find inexpreſſible pleaſure. They are diſtinguiſhed by their habits of induſtry; thoſe of the poorer ſort employing themſelves in making ſtockings, caps, and purſes, which they ſell to paſſengers or carry to dealers: and the richer women embroidering handkerchiefs and other linen, and working at ſome ſort of ſilk or cotton ſtuff. Sweetmeats, conſerves of roſes and orange-flowers, ſyrups of lemon and bergamot-citron, occupy a great number of women of all ages and of all conditions. It is generally in the country that they breed the ſilk-worm and ſpin cotton. Thoſe who apply themſelves more particularly to embroidery, give to the ſilks which they employ the colours that they wiſh. They obtain, among others, a gold yellow colour with the branches of the celtis orientalis, or the leaves of the henné or Egyptian privet; a bright yellow with the flowers of broom, and the ſtems of the ſilvery-leaved daphne or tartonraira. The roots of the apple-tree yield them a pale roſe colour. The wood of the quince-tree furniſhes a very bright fleſh-colour. They draw from the branches of the peach-tree a bright green, and from the leaves a deep one. They cut the ligneous ſubſtances into little bits, ſteep them in water for two days, boil them the third day till the liquor is reduced to one-half; they ſtrain it through a cloth, add a little alum, and ſet it again over the fire. As ſoon as the water boils, they ſteep their ſilk for a longer or ſhorter time, according as they wiſh to obtain a colour more or leſs deep.

The red peelings of onions yield them a tolerably bright orange colour yellow: they ſet them to ſoak in water for four or five days, and boil them with a little alum: they add a ſpoonful of cochineal, or of kermes, when they wiſh to obtain a beautiful red.

The rind of the walnut, while green, which is taken off when they pickle that fruit, affords them a green more or leſs deep.

They alſo make uſe of the gallnut, of the cup of the velani oak, of madder-root, and of all the colouring ſubſtances employed in Europe.

In no iſland of the Archipelago, nor in any country of Turkey, did we ſee lands ſo well cultivated, commerce ſo active, and induſtry ſo great, as at Scio. Grounds the moſt arid and moſt ſtony, improve by degrees under the hand of the Sciot, and become fit to receive ſome ſeeds or ſome uſeful trees. There is no kind of traffic to which he is a ſtranger, no hazardous enterpriſe that he does not attempt. Here no one is idle: he who is not a prieſt, is moſt certainly a merchant, manufacturer, artiſan, mariner, or cultivator.

If agriculture and induſtry ſcarcely leave any thing to be wiſhed for in this iſland, it is becauſe there is no part of the Ottoman empire that enjoys more effectual protection, or is more favoured by the government. Here, through a concurrence of fortunate circumſtances, private intereſt is in uniſon with public intereſt. As the appanage of a ſultana, the iſland is under her immediate protection. A naïb here adminiſters juſtice for the molla of Conſtantinople; the latter has an intereſt in watching over his ſubſtitute, and in cauſing him to be recalled, if the complaints made againſt him prove well founded. The ſultan has granted privileges to the moſt populous part of the iſland, to all the villages whoſe inhabitants cultivate the maſtic deſtined for his ſeraglio: he has withdrawn them from the rod of the mutſelim, and granted them an aga, who particularly farms that valuable commodity. The town likewiſe enjoys a great number of privileges. Laſtly, the governor, who at the ſame time farms the cuſtom-houſe duties and taxes, applies himſelf to make the moſt of the one, by the protection and the accommodation which he grants to the merchants and cultivators; he does not indulge himſelf with regard to others in perſecutions, and ruinous exactions, which too frequently overſet the fortune of the tributary ſubjects in the other towns. Here the poor man as well as the rich one, the cultivator as well as the merchant, the villager as well as the inhabitant of the town, are all alike protected, all may alike prefer their complaints, all may demand and obtain the removal of a man who ſhould abuſe too much the authority intruſted to him.

The cuſtom-houſe duties and the taxes are moderate; but the iſland, like others of the Archipelago, is ſubject to the duty which the captain-pacha annually levies on them. Their manufactured ſtuffs are ſubject to a mark or ſeal, affixed by the mutſelim, under penalty of confiſcation and fine; and pay before they are ſent out of the iſland a certain duty. The karatch, a capitation tax, is fixed for the villages, in proportion to their population and the extent of their territory. In the town, all males, from the age of puberty, and through abuſe from ten to twelve years old, are inſcribed on a regiſter, and divided into three claſſes: thoſe of the firſt pay 11 piaſtres, thoſe of the ſecond 5½, and thoſe of the third 2¾ piaſtres. Women are exempt from this tax. Independently of theſe legitimate duties, the governor levies arbitrary and illegal taxes, not burdenſome to individuals, but in the total amounting to a large ſum. One of the nobleſt privileges of the Sciots, which ſerves as a dam againſt the torrent of the judicial injuſtice of the Turks, is to have notaries of their religion, whoſe acts, in the Greek dialect, are reſpected by the Ottomans, and received at their tribunal as authentic documents. The Roman Catholics have one who aſſumes the title of apoſtolical notary. The Greeks, much more numerous, have ſeveral. Next to this privilege, the greateſt of all, is that of nominating among them five primates, whoſe functions conſiſt in defending with firmneſs the validity of theſe acts, and in examining and judging all the litigious affairs of the iſland, as to civil matters. The municipal juriſdiction of this iſland, very much reſpected by the Turks, is compoſed of three Greeks and one Roman Catholic, and is entruſted, for one year or more, frequently for two years, to none but merchants, who join to a knowledge of commerce an unequivocal reputation for probity. The inhabitants of Scio have likewiſe the privilege of electing every year two intendants of health, whoſe number in caſe of the plague is increaſed. The lazaretto is contained in a vaſt encloſure towards the ſea, to the north of the town. It conſiſts of ſeveral piles of building, ſeparated from each other, intended ſome for the ſick and others for the convaleſcent. Notwithſtanding this precaution they are occaſionally great ſufferers from this diſorder. The plague of 1788 carried off in a little time 14,000 perſons. The ſame intendants have the inſpection of the hoſpital of lepers, ſituated in a narrow valley, N.N.W. of the town.

Muſſulman toleration, which allows the Sciots the liberty of having a police, tribunals, and particular judges, is ſtill more indulgent in regard to their religion. The Greeks, infinitely more numerous, more rich, and more powerful than the Latins, poſſeſs about 700 churches in the iſland, a calculation which will, no doubt, appear exaggerated, but the exactneſs of which was warranted to Olivier by the beſt-informed perſons of Scio. Perſecuted by their adverſaries, the weak Latins have no more than four at the preſent day, a ſingle one in the town, and three in the country. The number of prieſts, as may well be imagined, is proportionate to this aſtoniſhing number of churches. It is extremely curious to ſee them diſplay, in the midſt of the fanatic Muſſulmans, all the pomp of the Greek and Roman religious ceremonies. Their proceſſions and interments attract an innumerable train; the prieſts in their ſurplices, the papas in their ſtoles, traverſe the ſtreets of the town, preceded by a long croſs, followed by a great number of faithful with a wax-taper in their haud. The ſtern Muſſulman ſees them paſs without murmuring, provided they pay homage to the moſques, provided they interrupt their ſinging at the ſight of that venerable place, that they detach the croſs from its ſtaff, and hold it humbly lowered.

The privilege of having bells to their churches is granted only to the inhabitants of the maſtic villages: they ſerve for calling them to prayers, to maſs, to work, to the gathering of the maſtic, to the parochial aſſemblies: they are likewiſe intended for giving the alarm in caſe of attack or fire.

The hiſtory of Scio is loſt in the obſcurity of time, and is confounded with the errors of fable. At firſt under the rod of kings, next under republican agitation, then under the odious tyranny of factions, alternately independent and ſubjected, never perhaps free and happy, the inhabitants of Scio have paſſed ſucceſſively under the domination of the Perſians, under that of the Greeks, and under that of the Romans. The Venetians attempted to eſtabliſh themſelves there, when the Europeans in a delirium were crowding towards the oriental regions, in order to drive the *infidel* Muſſulmans from the Holy Land. The Greek emperors ſoon after ſold the iſland to ſome Genoeſe nobles, and that republic had rendered it the emporium of an extenſive commerce, when, in 1566, Soliman I. made himſelf maſter of it.

Favoured by the Catholics of the country, the Venetians took poſſeſſion of Scio, in 1693, towards the end of the reign of Achmet II.: they conducted themſelves there in a very indecorous and very impolitic manner, by perſecuting the Greeks enemies of the Latins. The year after Mezomorto, a Turkiſh admiral, had only to preſent himſelf to beat them and expel them from the iſland. Since that epoch, Scio has not ceaſed to be ſubject to the empire of the creſcent.

Maſtic muſt be conſidered as one of the moſt important productions of the iſland, and the moſt valuable, ſince to this they owe many of their privileges, and the cultivators their independence, their comfort, and, perhaps, their happineſs. (See Mastic.) Scio turpentine is becoming daily more and more ſcarce. The cotton which they grow, though plentiful, is not ſufficient for the ſupply of their numerous manufactures; nor is the collection of ſilk adequate to the conſumption of the manufactories of the town.

The iſland produces wheat, barley, wine, oil, and a few legumes; but the quantity of theſe commodities is ſo diſproportioned to that required by the number of the inhabitants, that they are obliged to draw them from all quarters. The wheat is ſcarcely ſufficient to ſubſiſt them for three months. The wine furniſhes for the conſumption of ſeven or eight: it is, in general, ſweet and ſpirituous. That which rich individuals make with care, is as good as Malaga, Frontignac, and Cyprus wines, when they have acquired a little age

The oil ſuffices for the wants of the inhabitants, in good crops; they procure that article from Mitylene when theſe are bad or indifferent: here, as well as throughout the Levant, they ſalt a very great quantity of olives, according to an eaſy proceſs.

Oranges, common lemons, wild lemons, and bergamot-citrons, which are brought during the winter and in the ſpring to Conſtantinople, Adrianople, and Smyrna, are a very important article of trade, which is eſtimated, one year with another, at 2,000,000 of livres (83,333*l.* ſterling.) A very agreeable ſyrup, in great requeſt, is alſo made with the expreſſed juice of lemons and cedrats: it is ſet to thicken over the fire, after receiving the addition of a little ſugar or honey. It is ſent to Conſtantinople, to Cairo, and into the Black ſea. The rinds of theſe fruits are preſerved in ſugar or honey, and are diſtributed all over the Levant.

The galls, while yet green, of a ſpecies of willow, ſalvia pomifera, are in like manner preſerved in ſugar or honey. This ſweetmeat is very agreeable, much eſteemed, and highly ſtomachic. The Sciots employ not only the galls of the country, but thoſe which they receive from the neighbouring iſlands.

The roſe-tree is alſo an important article of culture, either from the great quantity of conſerve of roſes which is there made, or from the eſſential oil which is extracted from it.

Dried figs are eſteemed, and are almoſt all ſent to Smyrna and to Conſtantinople; of theſe the merchants of Smyrna diſpatch to Europe, as well from Scio as from the coaſt of Aſia, to the amount of 100,000 livres (4166*l.* ſterling).

In moſt of the gardens is ſeen the ſebeſten, whoſe oval fruit, a little ſmaller than a common olive, contains an excellent glue, employed throughout the Levant for bird-catching.

A plum-tree called *verdaſſier* is here cultivated: its fruit is large, oblong, of a pale-green, and of a very agreeable taſte. It ripens in July, and laſts ſcarcely three weeks. The inhabitants make it an article of trade: they peel the plum, dry it in the ſun, pack it up in boxes, and ſend it to Smyrna and Conſtantinople, where it is ſold as high as two piaſtres the oke.

The wax is not ſufficient for the great conſumption which is made of that article in the churches of the country: the inhabitants import it from Greece and Natolia: they alſo import honey for ſyrups, preſerves, and ſweetmeats which they prepare; that of Greece is the moſt eſteemed.

It is reckoned that there are about 500 looms employed in the manufacture of ſilk ſtuffs. The inhabitants of Scio have ſucceeded in imitating, in ſome meaſure, the Lyons ſilks; but they have copied with more ſucceſs the India ſilks and cottons, which they alſo draw from Aleppo and Damaſcus. Thoſe of Scio are at this day ſuperior to thoſe of theſe two cities, the oldeſt manufacturing ones of the Ottoman empire. They alſo make a conſiderable quantity of *gaitans*, or ſilk loops, preferable to thoſe of Conſtantinople and Burſa. They ſerve for the edging and button-holes of the Turkiſh dreſſes: they alſo plait ſome in gold and in ſilver for thoſe of the women. There are much fewer looms for the cottons than for the ſilks.

The trade of the various cloths manufactured at Scio is eſtimated at upwards of 6,000,000 livres (250,000*l.* ſterling).

There is nothing wanting at Scio to render its trade more flouriſhing but a good harbour; that which exiſts is neither ſpacious nor deep, and rocks obſtruct its entrance; it can receive none but ſmall veſſels; large ſhips and men of war anchor without in an open road, which has, at leaſt, the advantage of affording the facility of going out with all winds. Its entrance is indicated by two light-houſes; and though it was formerly ſufficiently ſpacious for the trade of the iſland, and of all the Archipelago, it is daily becoming choaked up, whilſt the Turks will not be at the ſmalleſt expence to remove the obſtructions and keep it in order. N. lat. 38° 23′. E. long. 26°. Sonnini. Olivier.

Scio, the capital of the above iſland, is tolerably large and well-built; it is the work of the Genoeſe, who for a long time poſſeſſed the whole iſland. The ancient town, which, as well as the iſland, bore the name of Chios or Chio, was placed on the ſummit of a mountain. The modern town is at the foot of the ſame mountain, by the ſea-ſide, and on this account its ſituation is much more agreeable. The ſtreets are ſtraight, paved, and tolerably clean; the houſes are high, all in maſonry, the greater part of hewn ſtone: ſand-ſtone, or calcareous ſtone, is made uſe of indiſcriminately. From a few diſtricts of the iſland is procured a hard, reddiſh ſand-ſtone, with a very fine grain, which is employed with advantage for the jams of the doors and windows, for paving the ground-floor, and for building the façades of the churches. It is, no doubt, this ſtone which was anciently diſtinguiſhed by the name of jaſper, and of which Strabo, Pliny, and Cicero have ſpoken.

It is the cuſtom at Scio to make, in the centre of the houſes, a ſpacious apartment, very lofty, which the inhabitants uſe in ſummer during the heat of the day. They breathe a pure air, evening and morning, on the terrace or flat roof of the houſes, and at the ſame time they enjoy the proſpect of the country and of the ſea.

The citadel, built by the Genoeſe, commands the harbour: an eſplanade, ſomewhat extenſive, ſeparates it from the town, and a ditch dug all round is intended to receive the waters of the ſea in caſe of ſiege. The fortifications are regular, although ancient: they are fallen into ruins in ſeveral places, and the guns are at this day almoſt without carriages, with the exception of the battery which defends the entrance of the harbour. The inſide of the citadel is full of houſes, capable of lodging with eaſe the 700 or 800 janizaries who conſtitute the whole ſtrength of the iſland; but they are partly in ruins, and the Turks, as is well known, have much more inclination to pull down than to ſet up.

The town is commanded, to the weſt and to the north, by ſchiſtoſe, granitical hills, rather arid, but, nevertheleſs, ſuſceptible of culture. To the north-weſt of theſe hills are ſeen nothing but calcareous mountains, almoſt naked, which ſcarcely leave between them a few ſpaces, that the rural induſtry of the inhabitants can turn to account. To the ſouth of the town, the eye extends with more pleaſure over a plain two leagues in extent, extremely fertile, covered with beautiful country houſes, and adorned with gardens more or leſs ſpacious, in which are cultivated all the fruits of Europe, and moſt of its legumes.

SCIOGRAPHY. See Sciagraphy.

SCIOHAIR, in *Geography*, a town of Aſiatic Turkey, in the government of Sivas; 60 miles S.S.W. of Sivas.

SCIOLTO, Ital., in *Muſic*, implies unbound, detached, articulate. On the flute and hautbois, every note to be tongued: on the violin, tenor, and baſs, every note to be bowed, and cut ſhort, as if followed by a reſt of half its value.

SCIOMANTIA. See Sciamantia.

SCIONE, or Scion, in *Ancient Geography*, a town of Thrace, near the Canaſtreum Promontorium, according to Steph. Byz., who ſays that it was built by the Grecians who returned from the ſiege of Troy.—Alſo, a town of Macedonia, in the Cherſoneſus of Pallené, according to Strabo. Mela ſays that it was built by the Greeks after their return from the Trojan war.—Alſo, an inſular town of this name in the Ægean ſea.

SCIOPODÆ, in *Hiſtory*, the name given by Pliny, and other of the old writers, to a nation of people which they place in Æthiopia, on the burning ſands; and who, they ſay, when too hot, lie down upon their bellies, and ſhadow themſelves from the ſun by lifting up their feet, which are very large and broad, againſt it. Theſe are ſome of the *gentes mirabilis figuræ* of Pliny, and are worthy to ſtand among the monocoli, and other ſuch monſters.

SCIOPPIUS, Gaspard, in *Biography*, a critic of conſiderable celebrity, was born at Neumarch, in the Upper Palatinate, in the year 1576. He was trained to literature from his earlieſt youth, and made ſo rapid a progreſs, that he is ſaid to have been an author of note in the ſixteenth year of his age. When he had attained to years of manhood, he travelled twice into Italy, and was ſo much pleaſed with the country, that he reſolved to ſettle in it; and it appears that he made his principles bend to his convenience, and as a preliminary ſtep towards his ſettlement in Italy, he abjured the Proteſtant religion, and adopted that of the pope: and as it appears to have been his wiſh to ingratiate himſelf with the court of Rome, he diſplayed the bittereſt enmity againſt the party which he had quitted; and, to manifeſt his zeal, he wrote a work, entitled "Claſſicum Belli ſacri," in which he urged the total extirpation of the Proteſtants by force of arms. At the ſame time he attacked, among others, in the moſt abuſive terms, king James I. of England, for which he received a perſonal caſtigation by the ſervants

vants of the Engliſh ambaſſador at Madrid. He was alſo the bitter enemy of the Jeſuits, and wrote a number of works againſt them under different aſſumed names. Scioppius and Scaliger oppoſed each other with great fury in a literary controverſy, if ſuch kind of virulence could come under the denomination of literary diſcuſſion. They not only decried the works of each other, but employed all their malignity in abuſing their perſons and families. Scioppius treated the greateſt authors of antiquity with no leſs rudeneſs than thoſe of his own time; and pure latinity being a point in which he greatly prided himſelf, he did not heſitate to charge Cicero himſelf with barbariſms in writing his own language. He had in the courſe of years made himſelf ſuch a number of enemies, that he ſcarcely knew where to take ſhelter. His laſt retreat was Padua; here he lived under the protection of the republic of Venice. Towards the cloſe of life he became an expoſitor of prophecy, and ſent ſome of his commentaries on the book of Revelations to cardinal Mazarin, who paid no regard to them whatever. He died, almoſt univerſally hating and hated, in the year 1649. Of his works, the number of which is ſaid to have exceeded that of his years, the greater part is devoted to criticiſm and controverſy; they are ſaid to contain proofs of extenſive learning and abilities, which, if directed by a better temper, might have tranſmitted his name to poſterity with high honour.

SCIOPTIC Ball, or *Ox-eye*, as it is ſometimes called, a ſphere or globe of wood, with a circular hole or perforation, in which a lens is placed. It is ſo fitted, that, like the eye of an animal, it may be turned round every way, to be uſed in making experiments of the darkened room. See Camera *Obſcura*.

SCIORUM, in *Geography*, a mountain of Arabia, which forms the ſouthern boundary of Oman towards the ſea.

SCIOT. See Siut.

SCIOTO, a river of America, which falls into the Ohio, in the ſtate of Ohio, is larger than the Hockhocking, and opens a more extenſive navigation. It is paſſable for large barges for 200 miles, with a portage of only four miles to the Sanduſky, a boatable water which falls into lake Erie. Through the Sanduſky and Scioto lies the moſt common paſs from Canada to the Ohio and Miſſiſippi, one of the moſt extenſive and uſeful communications to be found in any country. Prodigious extenſions of territory are here connected; and from the rapidity with which the weſtern parts of Canada, lake Erie, and the Kentucky countries are ſettling, we may anticipate an immenſe intercourſe between them. The flour, corn, flax, and hemp, raiſed for exportation in that large country between the lakes Huron and Ontario, will find an outlet through lake Erie and theſe rivers, or down the Miſſiſippi. The ſtream of the Scioto is gentle, and no where broken by falls. At ſome places, in the ſpring of the year, it overflows its banks, providing for large natural rice plantations. Salt-ſprings, coal-mines, white and blue clay, and free-ſtone, abound in the country adjoining this river. Its mouth is in N. lat. 38° 40′. W. long. 83° 30′, about three miles below Pittſburg, and it is navigable to its ſource in canoes. This river is 250 yards at its mouth, and 100 yards wide at the Salt-lick towns, 200 miles above.—Alſo, a county of the ſtate of Ohio, formed in the year 1803, 20 miles in extent from N. to S. and 30 from E. to W., containing 9 townſhips, and 3399 inhabitants. It is bounded N. on Roſs county, S. on the Ohio, E. on Gallia, and W. on Adams. Its principal town is Portſmouth.

SCIPIO, Publius Cornelius, ſurnamed *Africanus*, in *Biography*, one of the moſt illuſtrious characters of the Roman republic, was the ſon of Publius Cornelius Scipio, an eminent commander, who, with his brother Cneius, loſt his life in Spain during the ſecond Punic war. This ſame Publius was conſul, and commanded at the battle on the Ticinus, in the year 218 B.C., in which he was defeated by Hannibal, and would have been killed, had he not been reſcued by his ſon, the ſubject of this article, who was then a youth of ſeventeen only. This young man fulfilled the promiſe of his early years by his conduct after the battle of Cannæ, when, being informed that certain perſons of high conſequence in the ſtate had adopted the deſign of abandoning their country, he repaired with ſome followers to the place where they were aſſembled, and compelled them, by the threat of inſtant death, to take an oath of never abandoning the republic. He was appointed to the edileſhip, through the favour of the people, at the age of 21, which was ſome years before the uſual age for that high office. In his 24th year he was appointed proconſul, for the ſake of endeavouring to retrieve the affairs that were in an unproſperous ſtate in Spain. The high character which he had already obtained, he is ſaid to have rendered ſtill more the ſubject of admiration by practices, the reſult partly of enthuſiaſm and partly of artifice. He inſinuated to the multitude that he acted frequently from divine inſpiration, or by the admonitions communicated to him by dreams; and he never undertook any public buſineſs without repairing to the temple in the Capitol, as if he were conſulting the gods. Soon after his appointment, he embarked a conſiderable reinforcement of troops, and having, on his arrival, ſurpriſed and captured the capital of the Carthaginian dominions in Spain, he became maſter of a great number of priſoners, and immenſe treaſures. It was upon this occaſion he gave an example of continence, for which he has been celebrated by every hiſtorian who has written on the ſubject. A female captive of ſingular beauty was brought to him as part of his ſpoil; he was not inſenſible to her charms; but finding that ſhe was betrothed to a Celtiberian prince, inſtead of uſing the ſuppoſed rights of a conqueror, he ſent for her parents and lover, and ſurrendered her pure into their hands, at the ſame time beſtowing the ranſom which they preſſed upon him as an addition to her marriage portion. This noble act, which deſerved all the applauſe that has been beſtowed upon it, filled the Spaniards with admiration, and not only the bridegroom joined Scipio's troops at the head of a body of cavalry, but the whole province of Celtiberia came over to the Roman party. In the next campaign Scipio marched againſt Aſdrubal, the brother of Hannibal, with whom was Maſſiniſſa, the Numidian prince. He entirely routed them, and took poſſeſſion of their camp, with a number of captives. Among theſe was a youth of a very prepoſſeſſing aſpect, who was the nephew of Maſſiniſſa. Scipio treated him with great kindneſs, and thus laid the foundation of Maſſiniſſa's attachment to the Roman cauſe. He vigorouſly purſued his advantages over the Carthaginians, and after almoſt entirely deſtroying Aſdrubal's army, obliged him to fly to Africa, leaving Spain entirely in the power of the Romans. In the end the ſucceſs of Scipio was complete, and the Roman ſenate being informed of the event, recalled him to Italy, ſending two proconſuls to take the command in Spain. He arrived at Rome near the time of the conſular election, and though he was yet under the age preſcribed for attaining that dignity, the ſplendour of his exploits cauſed him to be unanimouſly choſen by the people to the office of conſul. This was in the year 205 B.C. It was his wiſh to be ſent to command in Africa, but, through the influence of Fabius, he was appointed to a command in Sicily, with a conditional power of paſſing over to Africa with thirty ſhips. Being, in his own mind, determined to make that country the theatre of war, he aſſiduouſly employed himſelf in preparations for the purpoſe. The year of his conſulſhip being ended, he was continued in the command as proconſul, with the permiſſion of carrying with him to Africa ſuch of the Roman troops in Sicily as he ſhould think proper: he at length embarked at Lilybœum, amidſt a vaſt concourſe of ſpectators, and with all the circumſtances of ſolemnity that might impreſs his ſoldiers with a ſenſe of the magnitude of the undertaking, and the hope of victory. Almoſt immediately after his landing he was joined by Maſſiniſſa, and having obtained ſome ſucceſſes, he proceeded to lay ſiege to Utica. This, however, he was obliged to abandon, and he choſe a place for his winter quarters, where he could readily receive ſupplies from Italy. In the mean time, his proconſular command having expired, it was continued to him by the voice of the people as long as the war ſhould laſt. Syphax, having married the daughter of Aſdrubal, was now fixed in the Carthaginian intereſt, and lay with his army encamped near that general. Scipio opened the campaign with ſurpriſing by night and burning the Numidian and Carthaginian camps, and with a great ſlaughter of their forces. After this he defeated Aſdrubal and Syphax, and captured Tunis, and ſeveral of their other towns. The Carthaginians now ſent deputies to Rome to treat for a peace, and Scipio agreed to a ſuſpenſion of hoſtilities till their return. They had, however, in the mean time, recalled Hannibal from Italy, as the only antagoniſt fitted to oppoſe their ſucceſsful invader. On his arrival active hoſtilities recommenced; and the two great commanders met, at the head of their collected forces, near Zama, where a deciſive battle was fought. This action, which happened in the year B.C. 202, ended in a complete victory over the Carthaginians. Peace was now reſtored, but the conditions to Carthage were extremely ſevere: her territories were reſtricted to Africa; her naval power was annihilated; and a vaſt ſum was exacted from her by way of indemnification. With the ratification of this treaty terminated the ſecond Punic war. Scipio returned to Rome crowned with glory, and was met at his entrance by the whole body of citizens. A triumph was decreed him by the united votes of the ſenate and people, together with the ſurname of AFRICANUS, by which he has been diſtinguiſhed from all the other branches of his illuſtrious family. In the year 199 B.C. he was nominated one of the cenſors, and in 194 he was elected conſul a ſecond time; but nothing occurred during the year of his office that gave him an opportunity of diſtinguiſhing himſelf. In 190 B.C. his brother Lucius was choſen conſul, and Scipio propoſed to accompany him as lieutenant, ſhould he be ſent to command in Aſia againſt Antiochus the Great, in whoſe ſervice his old antagoniſt Hannibal was engaged. The offer was accepted, and the two brothers, with their troops, marched for the Helleſpont. They croſſed the ſtrait without oppoſition, Africanus ſtaying ſome days after his brother, on account of his being occupied as a prieſt of the Salii in certain religious ceremonies, of which he was always very obſervant. The ſon of Africanus had been taken priſoner at ſea, and brought to Antiochus, who treated him in the moſt honourable way, and offered to reſtore him without ranſom, provided he might thereby ſecure the good offices of the father. Scipio rejected the offer, and adviſed the monarch to accept of peace upon any terms. Shortly after this, Scipio, while lying upon a ſick bed at Elæa, was gratified with the ſight of his ſon, reſtored to him by Antiochus. The deciſive battle of Magneſia, ſoon after this, obliged Antiochus to ſubmit to the conditions which the Roman ſenate impoſed on him. Upon the return of Scipio to Rome he appears to have retired to the repoſe of private life, which, however, he was not permitted to enjoy very long unmoleſted. He was accuſed of various miſdemeanors when in office, and a day appointed for a hearing. After ſome preliminary enquiries, a ſecond day was appointed; on this, when ſilence was proclaimed, he roſe and ſaid, “On this day, tribunes and Romans, I gained a deciſive victory over Hannibal and the Carthaginians. Since, therefore, ſuch a day ſhould be exempt from ſtrife and contention, I mean to go and pay my devotions to Jove and the other gods who preſide over the Capitol, and return them thanks that, as well on this day as on many others, they have granted me the deſire and ability of doing great ſervice to the republic. You, my fellow citizens, to whom it is convenient, go along with me, and pray that you may always poſſeſs leaders like myſelf: for as from the age of ſeventeen, to advanced life, you have outgone my years by your honours, ſo I have anticipated your honours by my actions.” He then proceeded to the Capitol, followed by the whole aſſembly, not excepting the ſcribes and apparitors, ſo that the tribunes were left with no other attendants than their ſlaves, and the public crier. A more ſplendid mode of defeating an impeachment was never practiſed, and Livy prefers the glory conferred upon Scipio by his conduct on this day, to his triumph over Syphax and the Carthaginians. It was, however, but a temporary ſucceſs, for his enemies returning to the charge, cited him a third time, but he refuſed to ſubmit to what he felt an indignity, and retired to his country ſeat, his brother appearing in his ſtead, and pleading the excuſe of ill health, which not being conſidered as ſatisfactory, the buſineſs was adjourned to another day. Tiberius Gracchus, father of the celebrated Gracchi, was one of the tribunes at this time, and as he was known to be an enemy to the Scipios, his refuſal to put his name to this decree was thought a prelude to ſomething ſtill more ſevere; but it aroſe from the moſt honourable feelings: he declared that he would not ſuffer Scipio to be accuſed till he ſhould return to Rome, and would then even protect him from the neceſſity of pleading his cauſe; adding ſome ſtrong and ſevere reflections on the public proſecution of a man ſo venerable, from the very high ſervices which he had performed for his country. This interpoſition was ſucceſsful, and the generoſity of Gracchus was rewarded by the hand of Cornelia, the illuſtrious daughter of Africanus: henceforth no mention is made of this great man; he probably died very ſoon after, at or about the age of 48. He deſired to be buried at Linturnum, a town on the coaſt of Campania, to which he had withdrawn; and he manifeſted his diſpleaſure againſt his countrymen, by the epitaph which he ordered to be engraved on his tomb: “Ungrateful countrymen, you ſhall not poſſeſs my bones.” Livy ſpeaks of him as a perſon more illuſtrious in his concerns in war, than for his conduct in peace; and he remarks, that little was added to his renown after the ſecond Punic war, the glorious termination of which was juſtly aſcribed to him. That the retirement of Africanus from public life was owing to inclination rather than neceſſity, may be inferred from a ſaying of his recorded by Cicero, that “he was never leſs employed than when at leiſure, nor leſs ſolitary than when alone.” To this great general Hannibal, when in exile, paid the following compliment. Being aſked his opinion as to the greateſt commanders of his time, and the order in which they ſhould ſtand: “The firſt,” ſaid the Carthaginian, “is Alexander, the ſecond Pyrrhus, and the third myſelf.” And, ſaid Scipio, “If you had conquered me, in what rank would you have placed yourſelf?” “In the firſt,” ſaid Hannibal.

SCIPIO, PUBLIUS ÆMILIANUS, called alſo the Younger Africanus, was the younger ſon of Paulus Æmilius, but was adopted into the Cornelian family by Publius, ſon of the firſt Africanus. He ſerved at the age of 17, in Macedonia, under his natural father; and during the war in Spain, in the year B.C. 151, when the report of the hardſhips ſuffered there deterred the Roman youth from enrolling their names in the new levies, he mounted the roſtra, and in a ſpirited ſpeech declared his own readineſs to go in any quality that the conſuls ſhould appoint. This conduct produced ſuch an effect, that the levies were very quickly completed, and he accompanied them as a legionary tribune. For his great ſervices at this period, he obtained a mural crown, being the firſt in ſcaling the wall of a beſieged town, and he ſlew in ſingle combat a Spaniard of gigantic ſtature. The conſul, Lucullus, then ſent him to Numidia, where he was when the third Punic war broke out, in the year B.C. 148; at the commencement of which, the Carthaginian general, Aſdrubal, obtained ſome advantages over the Romans; and the whole conſular army would probably have been loſt, had not Æmilianus, with a ſmall body of horſe, kept the force of the enemy in check, while the legions were croſſing the river. He afterwards, by his valour and good conduct, ſaved a party which was ſurrounded by the enemy; and the whole of his conduct in this campaign was ſo extremely brilliant, that he gained univerſal reputation. On his return to Rome he was choſen conſul, being then 37 years of age; and the conduct of the African war, which ended in the deſtruction of Carthage, was committed to him by a ſpecial decree. (See CARTHAGE.) Scipio, on his return to Rome, was honoured with a magnificent triumph, and the name of the *Second Africanus* was conferred upon him. He depoſited an urn full of the aſhes of Carthage in the temple of the Capitoline Jupiter, as the moſt acceptable offering he could make to the Roman god. The integrity and diſintereſtedneſs of this great man, on the capture of the rival city, are univerſally acknowledged, and highly applauded. On this occaſion he convoked the Sicilians, who had been expoſed to the pillage of the Carthaginians, and promiſed to reſtore to each city every relic of art, which ſhould be recogniſed as having belonged to it. The Romans having kindled a war with the powerful city of Numantia, in Spain, and broken a treaty which the conſul Mancinus had made with it, in order to ſave his army, elected Scipio conſul a ſecond time, B.C. 134, and committed to his management the war againſt the Numantines. In the courſe of the conteſt, he cloſely inveſted Numantia, which was ſituated upon a hill, very difficult of acceſs, and rejecting the ſubmiſſive propoſals of the citizens for peace, reſolved to wait till famine ſhould oblige them to ſurrender at diſcretion. His vigilance was exerciſed in obviating all attempts ſuggeſted by valour, reduced to deſpair; and when at length they were unable to hold out any longer, they ſtill reſolved never to ſurrender themſelves to the diſpoſal of an inexorable foe, and ſet fire to their town, at the ſame time deſtroying themſelves and their families; thus leaving nothing to grace the victor but an empty triumph, and the ſurname of *Numantinus*.

During the conteſts carried on between the Gracchi and patricians, Scipio inclined to favour the latter party, and made himſelf unpopular by ſeeming to approve the aſſaſſination of Tiberius Gracchus, though he was a very near relation. After this he retired to his country retreat, near Caieta, in company with his intimate friend, the ſecond Lælius, his connection with whom is ſtill more celebrated than that of the firſt Lælius with the firſt Africanus. After a time he returned to Rome, where he oppoſed ſome unconſtitutional meaſures of the tribunes, and for which he was accuſed of aſpiring to the dictatorſhip. He was, however, ſupported by the ſenators and the great body of the people, and ſome important event was on the eve of taking place, when Scipio was found dead in his bed, in the year 129 B.C. He was ſuppoſed to have been aſſaſſinated, but the people would ſuffer no inquiries to be made as to the cauſe of his death. He was a great general, a lover and patron of letters, and a man of ſingular public integrity and private generoſity. When he went to Africa, he was accompanied by the hiſtorian Polybius, and the philoſopher Panætius; and Terence is ſaid to have been the companion of his retirement, and even to have ſubmitted his comedies to the correction of him and Lælius. He ſhewed a total diſregard for wealth, and an excellence of diſpoſition, by relinquiſhing his inheritance in favour of his mother, his brother, and ſiſters; and the whole property which the conqueror of Carthage left behind him was only 32 pounds weight of ſilver, and 2½ of gold.

SCIPIO, in *Geography*, a poſt-townſhip of America, in Cayuga county, on the E. ſide of Cayuga lake; 11 miles S. of Auburn, and 180 W. of Albany; incorporated in 1794, and comprehending that part of the lands reſerved to the Cayuga nation of Indians, on the E. ſide of Cayuga lake. This is one of the moſt populous and opulent farming towns in the weſtern country. In the year 1810, the population was 7100, the number of families 1104, and of ſenatorial electors 468; and the taxable property, as valued by the aſſeſſors, 205,042 dollars. Acroſs the lake there is a ferry between Scipio and Romulus. The poſt-village of Aurora is finely ſeated on the lake, near the centre of the weſt line, has a flouriſhing academy, about 50 houſes, a poſt-office, and a ſmall library. The inhabitants of Scipio are principally employed in farming. The Cayuga academy in this town is eligibly ſituated. The Cayuga county was erected from Onondago county in 1799, and is 70 miles long from N. to S., and in its greateſt breadth 20 miles: the whole area is 845 ſquare miles, or 540,800 acres. Its population, in 1810, was 29,840; its ſenatorial electors 2460. Its number of ſheep 49,000, of looms 1360, which produce annually 340,870 yards of cloth, woollen, linen, cotton, and mixed. It ſends three members to the aſſembly. Its chief town, Auburn, contains 500 inhabitants; and Aurelius is the town in which the courts are held.

SCIPIO, in *Ancient Hiſtory*, a name given by the Romans to a baton, or ſceptre of ivory, borne by the conſuls as a token of their dignity. Under the republic, it was no more than a rod without any additional ornaments. Under the emperors, and principally thoſe of Conſtantinople, it was ſurmounted with an eagle, and terminated by a buſt, which repreſented the reigning emperor.

SCIRA, Σκειρα, a feſtival among the Athenians, otherwiſe called Scirrophoria.

SCIRAS, in *Ancient Geography*, a name anciently given to the iſle of Salamine. Here was a temple of Minerva, known under the name of Minerva Sciras. See SCIRROPHORIA.

SCIRE FACIAS, in *Law*, a judicial writ, moſt commonly uſed to call a man to ſhew cauſe to the court whence it iſſues, why execution of a judgment paſſed ſhould not be made out.

This writ is not granted till a year and a day be elapſed after a judgment given.

Scire facias, upon a fine, lies only after a year and a day after the fine levied. Otherwiſe, it is the ſame with the writ of *habere facias ſeiſinam*.

There are alſo writs of *ſcire facias* againſt bail to an action, compelling his appearance; and on ſuch writ, if the bail ſhew a ſufficient cauſe, or the defendant does not ſurrender himſelf on the day of the return, or of ſhewing cauſe, the plaintiff may have judgment againſt the bail, and take out a writ of CAPIAS *ad ſatisfaciendum* (which ſee), or other proceſs of execution: and there is alſo a writ of this kind, *ad audiendum errores*, or *writs of error*; in detinue, after judgment, for delivery of goods; to remove an uſurper's clerk incumbent; upon a recognizance in chancery for extending lands, &c.; to repeal letters patent and grants; to repeal the grants of offices, for conditions broken, non-attendance, &c.; and in appeal of murder; and to revive a judgment. See Blackſt. Com. vol. iii. See EXECUTION.

SCIRO, SCYRO, or *Skiro*, in *Geography*, an iſland in the Grecian Archipelago, about 60 miles in circumference; very mountainous, but producing wheat and barley ſufficient for the inhabitants. The wine is excellent, and ſo is the cheeſe, which is made of the milk of ſheep and goats mixed. Wax and maſtic are collected by the inhabitants. In this iſland is one town of the ſame name, and it has about 300 families. The cadi is the only Turk in the iſland. N. lat. 38° 52′. E. long. 24° 35′.

SCIRO *Poulo*, a ſmall iſland in the Grecian Archipelago; 6 miles W. of Sciro.

SCIRONA, a word uſed by ſome of the ancients to expreſs the autumnal dews.

SCIRPO-CYPERUS, in *Botany*, Mich. Gen. 47. t. 31, was ſo called by that author, becauſe, as he conceived, it had the heads, or flowers, of a *Scirpus*, and the ſtem of a *Cyperus*. Micheli diſtinguiſhes thirteen ſpecies of this ſuppoſed genus, all reduced by Linnæus to SCIRPUS. See that article.

SCIRPOIDES, Mont. Prodr. 17, with a figure, ſo called on account of a reſemblance in the infloreſcence to *Scirpus*, is a genus founded by Monti, on ſome of the androgynous *Carices* of Linnæus, as *vulpina*, *muricata*, &c. See CAREX.

SCIRPUS, a very old Latin name for the bull-ruſh, and other plants of that tribe, which, on account of their ſoft flexible ſtems, deſtitute of knots, were uſeful for tying any thing together in bundles, or for making baſkets. The German name of this genus, *Binſe*, has the ſame meaning. De Theis derives *Scirpus* from *cirs*, which, he ſays, is the plural of the Celtic word *cors*, a ruſh; whence comes our *cord*, as well as the Latin *chorda*.—Linn. Gen. 30. Schreb. 41. Willd. Sp. Pl. v. 1. 290. Mart. Mill. Dict. v. 4. Vahl. Enum. v. 2. 242. Sm. Fl. Brit. 48. Prodr. Fl. Græc. Sibth. v. 1. 33. Ait. Hort. Kew. v. 1. 130. Brown Prodr. Nov. Holl. v. 1. 223. Purſh v. 1. 54. Juſſ. 27. Lamarck Illuſtr. t. 38. Gærtn. t. 2. (Iſolepis; Brown Prodr. Nov. Holl. v. 1. 221.)—Claſs and order, *Triandria Monogynia*. Nat. Ord. *Calamariæ*, Linn. *Cyperoideæ*, Juſſ.

Gen. Ch. *Cal.* Glumes chaffy, imbricated every way, ovate, flat, a little inflexed, uniform, all fertile, except occaſionally a very few of the outermoſt. *Cor.* none. *Stam.* Filaments three, elongated gradually; anthers oblong. *Piſt.* Germen ſuperior, minute; ſtyle thread-ſhaped, long, ſimple at the baſe, without a joint, at length dilated there, and breaking off at, or near, the bottom; ſtigmas three, capillary. *Peric.* none. *Seed* ſolitary, triangular, pointed, in ſeveral inſtances ſurrounded with hairs, ſhorter than the glume.

Eſſ. Ch. Glumes chaffy, imbricated every way, uniform, all fertile. Corolla none. Seed one. Style deciduous.

Obſ. Mr. Brown's ISOLEPIS (ſee that article) differs in having no hairs, or briſtles, beneath the ſeed. The examination of SCHŒNUS, to which we alſo refer the reader, and its allies, has led us to doubt the propriety of ſuch a generic diſtinction; becauſe we find ſome ſpecies that differ in this reſpect, and yet are otherwiſe ſo much more cloſely akin, than others which agree in having, or not having, ſuch briſtles. Nor does the character appear to be always without uncertainty, in one and the ſame ſpecies. See SCHŒNUS *rufus*.

Scirpus is a very numerous genus. Linnæus has twenty-ſeven ſpecies in his Sp. Pl., and forty-one in the 14th ed. of Syſt. Veg. Willdenow has ſeventy; Vahl ninety-four. Mr. Brown deſcribes five ſpecies of New Holland *Scirpi*, of which one only is new; but he has ſix new ſpecies of *Iſolepis*, beſides as many more that were previouſly deſcribed by other writers. Mr. Purſh enumerates twenty-three North American ſpecies, three of which are new. We ſhall give examples of the five Linnæan ſections, particularly deſcribing all the Britiſh ſpecies, as uſual.

Sect. 1. *Spike ſolitary.*

S. *paluſtris.* Marſh Creeping Club-ruſh. Linn. Sp. Pl. 70. Willd. n. 6. Vahl. n. 11. Fl. Brit. n. 1. Engl. Bot. t. 131. Fl. Dan. t. 273. Leers t. 1. f. 3. Purſh n. 3. (Juncus minor, capitulis equiſeti; Ger. Em. 35. 1631.)—Stem round; ſheathed at the baſe. Spike terminal, nearly oval. Glumes acute. Root creeping. Stigmas two.—Common in ditches and pools throughout Europe, as well as in North America, flowering in June and July. The *root* is perennial, creeping horizontally. *Plant* variable in ſize, conſiſting of numerous, ſimple, naked, ſmooth *ſtems*, from ſix to eighteen inches high, without any foliage; the baſe of each inveſted with two or three cloſe, abrupt, ſtriated ſheaths, about an inch long. *Spike* erect, ovate, naked, of numerous brown acute *ſcales*, with white membranous edges. The *ſeed* is yellowiſh-brown, bluntly ovate, obſcurely angular, crowned with the thick triangular baſe of the *ſtyle*, which eaſily breaks off, and accompanied at the baſe, as Leers well obſerves, by four ſlender *briſtles*, beſides the permanent *filaments*. The *ſtigmas* are only two; three being by miſtake repreſented in Engl. Bot.

S. *multicaulis.* Many-ſtalked Club-ruſh. Fl. Brit. n. 2. Engl. Bot. t. 1187. Vahl. n. 10. Ait. n. 2. (S. acicularis; Fl. Dan. t. 167. S. paluſtris varietas; Linn. Fl. Lapp. n. 19, β. S. multicaulis, equiſeti capitulis minoribus; Rel. Rudb. 28. f. 2.)—Stem round; ſheathed at the baſe. Spike ovate, terminal. Glumes obtuſe, equal. Root fibrous. Stigmas three.—Native of turfy bogs in Lapland, Denmark, Germany, Scotland, Yorkſhire, Norfolk, Suſſex, and Cornwall, flowering in July. Differs from the laſt in having a ſtrong, fibrous, not creeping, *root*; blunter *glumes*; three *ſtigmas*; and a more decidedly triangular *ſeed*, at whoſe baſe are ſix rough *briſtles*. One or two of the lower *flowers* is often viviparous. The whole *plant* is generally ſmaller than the laſt, and the *ſpike* of a darker purpliſh-brown. The *ſeed* is crowned, as in the foregoing, with the large dilated baſe of the *ſtyle*, which breaks off eaſily, the reſt of the ſtyle having diſappeared long before.

S. *geniculatus.* Knotty Club-ruſh. Linn. Sp. Pl. 71. Willd. n. 7. Vahl. n. 19. (Juncus aquaticus geniculatus, capitulis equiſeti, major; Sloane Jam. v. 1. 121. t. 81. f. 3.)—Stem round, with frequent, unequal, internal, tranſverſe partitions. Spike ovate-oblong. Glumes roundiſh-ovate.—Native of Jamaica, in hollows where water ſtands after rainy ſeaſons. *Sloane.* The *root* is probably annual. *Stems* five or ſix, two or three feet high, half an inch in diameter, ſmooth, finely ſtriated, hollow, with very little pith, but the cavity interrupted by frequent, more or leſs complete, tranſverſe membranous partitions, which, in dried ſpecimens, make irregular prominent lines. *Spike* above an inch long, ſlender, erect. *Glumes* obtuſe, pale, minutely dotted with red.

S. *cæſpitoſus*. Scaly-ſtalked Club-ruſh. Linn. Sp. Pl. 71. Willd. n. 9. Vahl. n. 2. Fl. Brit. n. 3. Engl. Bot. t. 1029. Rel. Rudb. 28. f. 1. Ehrh. Calam. 102. (Juncus parvus montanus, cum parvis capitulis luteis; Bauh. Hiſt. v. 2. 523. f. 2.) — Stem round, ſtriated; ſheathed, and inveſted with numerous ſcales, at the baſe. Two outer glumes as long as the ſpike. Seed ſurrounded with about ſix forked briſtles.—Very common in moſt parts of Europe, on mountain moſſy bogs or heaths, in a turfy ſoil, varying extremely in ſize according to the moiſture of the ſituation, and flowering in July. *Root* ſtrong, fibrous, perennial, crowned with abundance of ſmooth, concave, pale, ovate, imbricated ſcales, embracing the *ſtems*, which have beſides a lax leafy pointed ſcale or two at the baſe of each, and vary in height from two inches to a foot, or more. *Spike* ſmall, reddiſh-brown. Two outer *glumes* ſlightly unequal, as tall as the whole ſpike, each with a leafy point. Theſe alone, for the moſt part, perfect their *ſeed*, though all the reſt are each accompanied by three *ſtamens* and one *ſtyle*. The *ſeed* is elliptical, triangular, ſmooth, brown, with green edges, and ſix briſtles at the baſe, whoſe points are cloven. The beak of the *ſeed* is much more ſlender than in *S. paluſtris* or *multicaulis*.

S. *pauciflorus*. Chocolate-headed Club-ruſh. Lightf. 1078. Fl. Brit. n. 4. Engl. Bot. t. 1122. "Hoſt. Gram. Auſtr. v. 3. t. 58." Ait. n. 4. (S. Bæothryon; Linn. Suppl. 103. Ehrh. Phytoph. 31. Willd. n. 10. Vahl. n. 5. S. n. 1335; Hall. Hiſt. v. v. 176. S. minimus, capitulo ſquamoſo breviore et craſſiore fuſco; Scheuchz. Agr. 366. t. 7. f. 21. S. minimus, ſpicâ breviore ſquamoſâ ſpadiceâ; ibid. 364. t. 7. f. 19.)—Stem round; ſheathed at the baſe. Spike of few flowers, longer than its outer glumes. Seed ſurrounded with ſeveral ſimple hairs.—Found on wet moors and heaths, eſpecially in rather mountainous ſituations, in Sweden, Germany, Switzerland, France, and Great Britain, flowering in Auguſt. More ſlender than the laſt, with blackiſh, tufted, fibrous, perennial *roots*. Stems from three to ſix inches high, each ſheathed at the baſe by a tight abrupt reddiſh membrane, without the ſcales, ſo remarkable in the *cæſpitoſus*. There are ſome barren *ſtems*, like *leaves*, taller than the others. *Spike* ſmall, reddiſh-brown; its outer *glumes* not above half the length of the whole ſpike, which nevertheleſs conſiſts but of four or five *flowers*. *Briſtles* of the *ſeed* numerous and very ſlender. The original ſpecific name of Lightfoot appears to us admirable, and much better than the pedantic one which Ehrhart, unknown to Linnæus, printed in the *Supplementum*, and which merely means *a little ruſh;* yet Vahl prefers the latter as moſt apt of the two. The plant of which we are ſpeaking is certainly the ſame as Dr. Roth has ſent us for his *campeſtris;* ſee Willd. n. 11; for which Scheuchzer's t. 7. f. 19, is quoted as a good repreſentation. So it undoubtedly is of our *pauciflorus*, and we conclude theſe two plants to be the ſame.

S. *acicularis*. Leaſt Club-ruſh. Linn. Sp. Pl. 71, excluding the incorrect reference to Scheuchzer. Willd. n. 16. Vahl. n. 6. Fl. Brit. n. 5. Engl. Bot. t. 749. Fl. Dan. t. 287. (Juncellus minimus, capitulis equiſeti; Pluk. Phyt. t. 40. f. 7.)—Stem quadrangular; with an abrupt ſheath at the baſe. Spike ovate, acute. Two outer glumes largeſt. Seeds without briſtles. — Native of clear pools, and marſhy places, in Sweden, Germany, Switzerland, and England, but not common with us. A very ſlender delicate ſpecies, with a fibrous perennial *root*, and ſquare *ſtems* from three to nine inches high, accompanied by a few ſhorter barren ones, or *leaves*. *Spike* very minute, of five or ſix brown *flowers*, with imbricated *glumes*, all nearly of equal ſize. *Seed* obovate, of an ivory white, ſemipellucid, without any briſtles at its baſe.

S. *fluitans*. Floating Club-ruſh. Linn. Sp. Pl. 71. Willd. n. 17. Vahl. n. 8. Fl. Brit. n. 6. Engl. Bot. t. 216. Fl. Dan. t. 1082. (Iſolepis fluitans; Brown Prodr. Nov. Holl. v. 1. 221. Gramen junceum clavatum repens, foliis et capitulis pſyllii; Moriſ. ſect. 8. t. 10. f. 31.)—Stem branched, leafy, flaccid, floating. Flower-ſtalks alternate, naked. Spikes ſolitary, terminal. Stigmas two. — Native of ditches and pools in various parts of Europe, flowering in July and Auguſt. Mr. Brown found it at Port Jackſon, New South Wales. Poſſibly the ſeeds might have been accidentally carried thither. The pale, branched, floating, divaricated *ſtems* bear numerous graſſy capillary *leaves*, and many long ſtriated tumid *flower-ſtalks*, each tipped with a little roundiſh pale head, of but few *flowers*. The two outer *glumes* are larger than the reſt. *Stigmas* long, feathery, only two. *Seed* without any briſtles.

Sect. 2. *Stem round, with many ſpikes.*

S. *lacuſtris*. Common Bull-ruſh. Linn. Sp. Pl. 72. Willd. n. 18. Vahl. n. 58. Fl. Brit. n. 7, excluding the varieties. Engl. Bot. t. 666. Brown n. 1. Purſh n. 13. Fl. Dan. t. 1142. (Juncus aquaticus maximus; Lob. Ic. 85. Ger. Em. 35.) — Stem round, naked. Panicle cymoſe, repeatedly compound, terminal. Spikelets ovate. Bracteas ſhort.—Frequent in clear waters, and about the borders of rivers, throughout Europe, flowering in July. It occurs alſo in North America, and New South Wales. The *roots* are thick and ſtout, creeping under water in the deep mud. *Stems* four or five feet, or more, in height, naked, ſmooth, round, dark green, tough and pliant, ſpongy within, uſeful for package, thatching, and eſpecially for platting into the bottoms of chairs; their baſe inveſted with ſeveral ſheathing ſcales, partly ending in leafy points. *Panicle* often doubly or triply compound, with compreſſed rough-edged branches. *Spikes* very numerous, ſolitary or crowded, of a ruſty brown. *Glumes* concave, keeled, pointed, fringed; ſometimes cloven, with a ſerrated point in the cleft. *Stigmas* either two or three, in different flowers on the ſame ſtem. *Seed* obovate, broad, flat on one ſide, with five or ſix briſtles, rough with reflexed teeth, at its baſe.

S. *glaucus*. Glaucous Club-ruſh. Sm. Compend. ed. 2. 10. Engl. Bot. t. 2321. (S. lacuſtris β; Fl. Brit. n. 7. Vahl. n. 58. S. paluſtris humilior; Scheuchz. Agr. 356. Juncus ſive Scirpus medius; Bauh. Theatr. 181.) — Stem round, naked, glaucous. Panicle cymoſe, not higher than the bractea. Spikes conglomerated, ovate. Stigmas two.—Native of ſalt-marſhes, in England and Scotland, flowering in July or Auguſt. Much ſmaller than the former, not above two feet high, and diſtinguiſhed by its glaucous hue. The *panicle* is leſs compound, not riſing above its upper *bractea*, but the *ſpikes* are more crowded, darker in colour, with broader *glumes*, whoſe pale part is dotted with purple. *Stigmas* never, as far as we can diſcover, more than two.

S. *Holoſchœnus*. Round-cluſter-headed Club-ruſh. Linn. Sp. Pl. 72. Willd. n. 26. Vahl. n. 54. Fl. Brit. n. 8. Engl. Bot. t. 1612. Fl. Dan. t. 454. (Scirpoides maritimum, capitulis ſparſis glomeratis; Scheuchz. Agr. 371. t. 8. f. 2. Juncus maritimus, capitulis rotundis; Pluk. Phyt. t. 40. f. 4. Rel. Rudb. 22. f. 1. t. 25. f. 3.)—Stem round, naked. Flowers in round, ſeſſile or ſtalked, heads.

Bracteas two, unequal. Leaves channelled.—Native of the ſandy coaſts of the ſouth of Europe; rare in England, plentiful in Greece; flowering late in autumn. *Root* perennial, forming denſe tufts. *Stems* ruſhy, firm, ſmooth, two or three feet high. *Leaves* radical, linear, narrow, with a white channel along their upper ſide. *Stem* crowned with two divaricated *bracteas*, exactly like the foliage, between which the round brown *heads*, each formed of innumerable *ſpikes*, come forth laterally, either ſeſſile, or upon unequal, often ſubdivided, ſtalks. The number of theſe *heads* varies from one to ſixty, or more, *S. auſtralis* and *romanus* of Linnæus being certainly but ſtarved varieties of this ſpecies, as was firſt ſuſpected by Linnæus, and publiſhed in Fl. Brit. in which opinion profeſſor Vahl concurs. The *glumes* are obovate, keeled, fringed. *Stigmas* three. We do not find any briſtles under the *germen*.—*S. globiferus*, Linn. Suppl. 104. Willd. n. 42. Vahl. n. 56, is the ſame ſpecies as this.

S. *ſetaceus*. Briſtle-ſtalked Club-ruſh. Linn. Sp. Pl. 73, but not Mant. 2. 321. Willd. n. 31. Vahl. n. 26. Fl. Brit. n. 9. Engl. Bot. t. 1693. Fl. Dan. t. 311. Leers t. 1. f. 6. (Juncellus omnium minimus; Moriſ. ſect. 8. t. 10. f. 23. Iſolepis ſetacea; Brown Prodr. Nov. Holl. v. 1. 222.)—Stem naked, briſtle-ſhaped. Spikes lateral, generally in pairs, ſeſſile, without bracteas.—Common in gravelly or ſandy watery places, in moſt parts of Europe, as well as in New Holland; flowering with us in July or Auguſt.—*Root* fibrous, annual. *Stems* ſeveral, ſlender, round, from two to five inches high, with one or two ſhort ſheathing *leaves* at the baſe. *Spikes* ovate, directed to one ſide, a little below the top of the ſtem. *Glumes* broad, brown, edged with green. *Stigmas* three. *Seed* without briſtles.

S. *debilis*. Weak-ſtalked Club-ruſh. Purſh n. 11.—Stem ſtriated. Spikes roundiſh-oval, ſeſſile, crowded. Glumes roundiſh, membranous. Briſtles twice as long as the ſeed.—Native of wet meadows in Pennſylvania, flowering in July and Auguſt.—*Root* perennial. *Stems* round, ſtriated, a foot high or more. *Spikes* four to ſix, thick. *Glumes* broad, rather acute. Akin to *S. ſetaceus*. *Purſh*.—Specimens from the Rev. Dr. Muhlenberg, which anſwer to this deſcription of Mr. Purſh, are undoubtedly a ſpecies not deſcribed by any other author. We had named this ſpecies *lupulinus*, from the tumid pale *ſpikes*. It is abundantly different in characters, ſize and aſpect, from *ſetaceus*. The ſeeds are obovate, blackiſh, with five or ſix briſtles, nearly twice their own length, and rough with deflexed teeth. This plant is moſt like the following, but eſſentially diſtinct.

S. *ſupinus*. Proſtrate Club-ruſh. Linn. Sp. Pl. 73. Willd. n. 32. Vahl. n. 34. (Iſolepis ſupina; Br. Prod. N. Holl. v. 1. 221. Mariſcus n. 1344; Hall. Hiſt. v. 2. 180. Schœnus junceus; Willd. Sp. Pl. v. 1. 259. Phytogr. faſc. 1. 2. t. 1. f. 4.)—Stems ſtriated, each with a ſingle ſheathing leaf. Spikes elliptic-oblong, ſeſſile, crowded. Glumes roundiſh, membranous. Seed tranſverſely corrugated, without briſtles.—Native of France and Switzerland; as well as of the Eaſt Indies, Guinea, and Egypt, according to Vahl, who eſteems this the *S. lateralis* of Retzius, though the latter is deſcribed with a triangular *ſtem*. Mr. Brown alſo met with *S. ſupinus* at Port Jackſon, as well as in the tropical part of New Holland. Our French and Swiſs ſpecimens have fibrous *roots*, ſaid to be perennial. *Stems* ſeveral, from three to nine inches long, ſimple, tapering, pale green, ſtriated, apparently more or leſs decumbent, but not conſtantly ſo. Each bears, towards the bottom, a ſhort ſheathing *leaf*. *Spikes* one, two or three, rather above the middle of the ſtem, leſs turgid than in *S. debilis*, variegated with green and brown. *Seeds* obovate, triangular, whitiſh when full grown, but afterwards turning black, curiouſly marked with tranſverſe wrinkles, and without any briſtles at the baſe, having entirely the character of *Dichromena;* nor do we ſee any reaſon why Vahl did not refer the plant to that genus; though we certainly could not aſſent to ſuch a meaſure, conſidering its ſtrict natural affinity to the *debilis*, laſt deſcribed, notwithſtanding the want of briſtles.

Sect. 3. *Stem triangular. Panicle leafleſs.*

S. *triqueter*. Triangular Bull-ruſh, or Club-ruſh. Linn. Mant. 29. Willd. n. 46. Vahl. n. 62. Fl. Brit. n. 10. Engl. Bot. t. 1694. (Juncus acutus maritimus, caule triquetro, maximo, molli, et procerior noſtras; Pluk. Phyt. t. 40. f. 2.)

β. S. mucronatus; With. ed. 2. 50. Hudſ. 20, α. (Juncus acutus maritimus, caule triquetro rigido, mucrone pungente; Pluk. Phyt. t. 40. f. 1. I. acutus maritimus, caule triangulo; Bauh. Theatr. 175. Moriſ. ſect. 8. t. 10. f. 20. Rel. Rudb. 22. f. 2, 3.)—Stem triangular, ſtraight, naked, ſharp-pointed. Spikes lateral, ſeſſile or ſtalked. Stigmas two. Seed even, poliſhed, pointed.—Native of the muddy ſea-ſhore, and banks of great rivers expoſed to the tide, in England and the ſouth of Europe, flowering towards autumn. With us it is rare, chiefly occurring in the Thames, above and below London.—*Root* creeping, perennial. *Stems* erect, three feet high, dark green, with three acute angles. *Spikes* near the top, lateral, leafleſs, except an occaſional ſmall ſharp *bractea*. They vary much in number, as well as in the length of their ſtalks; and in our variety β, are almoſt all ſeſſile, crowded cloſe together. This variety has formerly been taken for the Linnæan *mucronatus*, hereafter deſcribed. Theſe *ſpikes* have a few ſcales between them, and are ovate; their glumes reddiſh-brown, keeled, pointed, with a pale, dilated, jagged margin. *Stigmas* two. *Seed* pale, poliſhed, ſubtended by three rough briſtles, alternate with the *filaments*.

S. *carinatus*. Blunt-edged Bull-ruſh, or Club-ruſh. Sm. Compend. ed. 2. 10. Engl. Bot. t. 1983. (S. lacuſtris γ; Fl. Brit. n. 7. Vahl. n. 58. Juncus aquaticus medius, caule carinato; Dill. in Raii Syn. 428.)—Stem bluntly triangular upwards, naked; round at the baſe. Panicle cymoſe, terminal. Bractea upright, pungent, channelled. Stigmas two.—Native of the margins of great rivers in the ſouthern parts of Europe, flowering in July. Mr. I. Mackay obſerved it alſo near Ardbigland, in Galloway. The general habit of the plant, as well as the *root*, and the roundneſs of the *ſtem* at its baſe, accord with *S. lacuſtris;* but more than the upper half of the *ſtem* differs materially, being triangular, with rather convex ſides. There is alſo a ſtrong, erect, pungent, concave, leaf-like *bractea*, approaching to the nature of the extended point of the *ſtem* of *S. triqueter*, to which the preſent ſpecies is moſt naturally allied, having but two *ſtigmas*, while *lacuſtris* has moſtly three. The *panicle* however of our *carinatus*, riſing high above the top of the *ſtem* and *bractea*, more reſembles that of *lacuſtris*. There are ſeveral briſtles under the *ſeed*.

S. *mucronatus*. Sharp-pointed Bull-ruſh, or Club-ruſh. Linn. Sp. Pl. 73. Willd. n. 47. Vahl. n. 33. Dickſ. Dr. Pl. 26. (Scirpo-cyperus, paniculâ glomeratâ, e ſpicis imbricatis compoſitâ; Scheuchz. Agr. 404. t. 9. f. 14. Herb. Sherard.)—Stem triangular, with concave ſides, naked, ſharp-pointed. Spikes lateral, ſeſſile, crowded. Stigmas three. Seed tranſverſely wrinkled.—Native of ditches and pools in Italy and Switzerland, as well as the iſland of Mauritius, and New South Wales, flowering in July and Auguſt. The *ſtems* are of a finer graſs-green than in *S. triqueter*, with which this ſpecies has often been confounded, and their angles are more acute, the intermediate ſpaces being a little concave. The point above the *flowers* is generally ſomewhat reflexed; often very much ſo. There are no *bracteas*. The *ſpikes* are ovate, or rather cylindrical, many together, in a denſe perfectly ſeſſile head. *Glumes* tumid, ovate, broad, acute, keeled, light green, with ferruginous edges. *Seed* blackiſh, of a ſhort, obovate, ſomewhat heart-ſhaped, compreſſed figure, with ſeveral rough briſtles at the baſe. Here again we meet with the preciſe ſeed of a *Dichromena*, but accompanied with briſtles. (*S. ſupinus* has the ſame ſeed without briſtles.) The three *ſtigmas*, and the corrugations of the *ſeed*, clearly diſtinguiſh this ſpecies from the *triqueter*, whoſe *ſeed* is quite ſmooth, pale, highly poliſhed, and leſs obtuſe than in the *mucronatus*. Haller's n. 1338 muſt, by the deſcription, be *S. triqueter;* yet Mr. Davall found the true *mucronatus* wild in the Pays d'Aigle. We know not what to make of Vahl's *pungens*, n. 32; but as he ſays it has, as well as *mucronatus*, the fructification of *triqueter*, and we have ſhewn the *ſeeds* of the two laſt named to be ſo eſſentially different, according to a principle of his own, and the one to have two, the other three *ſtigmas*, he cannot be ſuppoſed to have examined the matter with attention, and his *pungens* may be a variety of one or the other.

S. *americanus*. American Triangular Bull-ruſh. Purſh n. 16. (S. triqueter; Michaux Boreali-Amer. v. 1. 30.)—Stem triangular, ſtraight, naked, ſharp-pointed. Spikes lateral, ſeſſile. Glumes ſtrongly beaked. Stigmas two. Seed obtuſe, opaque, quite even.—Frequent in the ſalt-marſhes of North America, flowering in July and Auguſt. *Purſh*. We have Carolina ſpecimens from the late Mr. Fraſer. The *ſtem* is acutely triangular, not above half the diameter of *S. triqueter*, and the *ſpikes* are fewer, larger, of a darker brown than in that ſpecies, their *glumes* all tipped with a firm rigid beak, half as long as the glume itſelf. *Stigmas* very deeply ſeparated. *Seed* roundiſh-obovate, obtuſe, or abrupt, black when ripe, its ſurface peculiarly even, though not poliſhed. *Briſtles* at the baſe about three, ſlender, rough, the length of the ſeed. This ſpecies ſeems to us really diſtinct from *triqueter*, as it certainly is from *mucronatus*. Its *ſpikes*, taken ſeparately, have more the aſpect of *maritimus*, but they are few, and all ſeſſile. In all theſe ſpecies the *ſeed* is tipped with the ſhort permanent baſe of the *ſtyle*, which is not dilated or triangular, but rectilinear.

Sect. 4. *Stem triangular. Panicle leafy.*

S. *maritimus*. Salt-marſh Club-ruſh. Linn. Sp. Pl. 74. Willd. n. 55. Vahl. n. 61. Fl. Brit. n. 11. Engl. Bot. t. 542. Curt. Lond. faſc. 4. t. 4. Ehrh. Calam. 12. (Gramen aquaticum cyperoides vulgatius; Ger. Em. 22. Cyperus rotundus littoreus; ibid. 31. C. longus inodorus latifolius; Moriſ. ſect. 8. t. 11. f. 25. C. rotundus inodorus aquaticus ſeptentrionalis; ibid. f. 9.)—Stem triangular; leafy at the bottom. Panicle cluſtered, terminal, leafy. Glumes pointed, torn into three ſegments. Stigmas three. Seeds obovate, bluntly triangular, very ſmooth and poliſhed, with a few briſtles at the baſe. Native of ſalt-marſhes and muddy ſea-coaſts, throughout Europe. The *root* is perennial and creeping, occaſionally knotty, as in ſome of the figures above cited. *Stems* from one to three feet high. *Leaves* very long, linear, keeled, graſſy, rough-edged; ſome ſheathing the baſe of the ſtem; others accompanying the *panicle*. The *ſpikes* are ovate or cylindrical, liable to vary greatly in length, of an uniform, ruſty, rather ſhining brown. *Anthers* yellow. *Seeds* remarkably ſmooth and poliſhed, appearing as if dotted under a magnifier.

S. *ſylvaticus*. Wood Club-ruſh. Linn. Sp. Pl. 75. Willd. n. 58. Vahl. n. 65. Fl. Brit. n. 12. Engl. Bot. t. 919. Fl. Dan. t. 307. Leers t. 1. f. 4. "Hoſt. Gram. Auſtr. v. 3. t. 68. Ehrh. Calam. 131. (Cyperus gramineus miliaceus; Ger. Em. 30. C. longus miliaceus inodorus, locuſtis plurimis brevioribus; Moriſ. ſect. 8. t. 11. f. 15.)—Stem triangular, leafy. Panicle cymoſe, leafy, repeatedly compound; the partial ſtalks naked. Spikes cluſtered. Styles three, deeply ſeparated. Seed ſmooth, with many briſtles at its baſe.—Native of moiſt woods, in various parts of Europe, but not very frequent in England, flowering in June and July. The *root* is fibrous, perennial. *Stem* three or four feet high, ſmooth, clothed with ſheathing *leaves*, of which thoſe only that accompany the *panicle* are rough-edged. The *ſpikes* are extremely numerous, ſmall, greeniſh. *Seed* orbicular, with three angles, compreſſed, whitiſh, ſubtended by ſix or eight briſtles twice its own length.

Sect. 5. *Stem triangular. Spikes in a terminal head.*

Of this ſection *S. hottentottus*, Linn. Mant. 182, appears to be a *Fuirena*, as Vahl makes it, by the leſs uncouth ſpecific name of *hirta*, Enum. v. 2. 387. *S. antarcticus*, ibid. 181, has diſtichous glumes, and ſeems rather to be a *Cyperus*. *S. argenteus*, Willd. n. 68, is a *Fimbriſtylis*. *S. monander*, Willd. n. 69, we have not examined. *S. cephalotes*, Linn. Sp. Pl. 76, is a plant of ſo ſingular an aſpect, that we ſhould heſitate to gueſs at its genus, but we ſuſpect it to belong rather to *Schœnus*. The glumes are imbricated in ſomewhat of a ſpiral manner. The *ſeed* is wedge-ſhaped, dotted moſt beautifully with innumerable oblong, minute, reddiſh excavations, and is tipped with a broad flat grey beak, nearly twice its own length, diſplaying the character of *Rhynchoſpora* very ſtrongly. Accordingly this plant is *R. cephalotes* of Vahl. Enum. v. 2. 237. Its figure may be ſeen in Rottböll, t. 20, where ſeveral rough briſtles, as long as the *ſtamens*, are repreſented under the *ſeed*. Theſe we find alſo in our ſpecimen. It ſeems that only one or two *ſeeds* are perfected in each *ſpike*, or *ſpikelet*.

SCIRRHO-CONTRACTED Rectum, in *Surgery*. See Rectum.

SCIRRHOMA, }
SCIRRHOSIS, } a particular hard tumour.

SCIRRHUS, from σκιῤῥοω, *to harden*. The term ſcirrhus was formerly uſed, in a vague and extenſive manner, to denote almoſt any kind of ſwelling which was accompanied with conſiderable hardneſs. At preſent, ſurgeons appear to be almoſt unanimous in reſtricting the application of this name to a diſeaſed hardneſs, in which there is a propenſity to cancerous ulceration, and a greater backwardneſs to recede than exiſts in any other kind of diſeaſed hardneſs. We are of opinion, that the accuracy of this ſtatement is not at all affected by a few particular caſes of ſcirrhi, in which the ſkin remains unbroken during life, and in which the induration even admits of being diſperſed. Theſe inſtances are to be conſidered only as unuſual deviations from the general courſe of the diſeaſe.

The diſpoſition of a ſcirrhous tumour to be converted into an open cancer, it is true, cannot always be diſcovered until the change has actually taken place; a circumſtance that ſometimes throws conſiderable obſcurity over the diagnoſis: for modern practitioners all agree, that there are many ordinary indolent tumours and indurations, which may ultimately change into cancer, notwithſtanding the quiet form in which they firſt preſent themſelves; and there are alſo ſome obſervations in Mr. Abernethy's ſurgical works, proving that ſarcomatous and encyſted tumours may end in moſt malignant diſeaſes, and ſuch as are quite as bad as cancer. The ſurgeon, however, is to recollect that, in all theſe examples, the changes which precede the cancerous and malignant ulceration are not at all like the genuine ſcirrhus.

The puckering of the ſkin, the dull leaden colour of the integuments, the knotted and uneven feel of the diſeaſe, the occaſional darting pains in the part, its fixed attachment to the ſkin above and muſcles beneath, form ſo ſtriking an aſſemblage of ſymptoms, that, when they are all preſent, there cannot be the ſmalleſt doubt that the tumour is a ſcirrhus, and that the diſeaſe is about to acquire, if it has not already acquired, the power of contaminating the ſurrounding parts and the lymphatic glands, to which the abſorbents of the diſeaſed part tend.

But we are not to conceal, that the diagnoſis is frequently more obſcure. In ſome caſes, a ſcirrhus is moveable, and not fixed to the ſubjacent parts; and the diſeaſe may be indolent, without much pain, or without diſcolouration of the ſkin. In the female breaſt, the part firſt affected may be very ſmall, and feel like a looſe pea under the ſkin; in other inſtances, it may be more extenſive, and deeply ſituated. Neither is the ſwelling always irregular and craggy. A late writer deſcribes it as being generally roundiſh and renitent. He repreſents the ſkin as being at an advanced period ſmooth and ſhining, and having a reddiſh hue, inclining to purple. He tells us alſo, that an external ſtrongly marked cancer, when much diſtended, and tending to ulceration, but not actually ulcerated, may be compared with a hard prominent carbuncle, before it ſloughs; for they both have a ſimilar hardneſs, with a ſhining prominence; and if the cancer is adherent to a broad baſe, there is poſteriorly a ſimilar firmneſs and immobility. Howard Pract. Obſ. on Cancer, p. 19—22.

The progreſs of ſcirrhus, before ulceration takes place, is generally ſlow; but when this laſt proceſs commences, the ravages of the diſeaſe moſtly ſpread with great rapidity. Sometimes, inſtead of actual ulceration, an exudation occurs upon the ſkin, followed by an excoriation and ſcab.

We ſhall next proceed to treat more particularly of the characters, by which ſcirrhus may be diſtinguiſhed from other diſeaſes.

A ſcirrhous induration is not prone to acquire the magnitude, which almoſt all other tumours are apt to attain, when their growth is not interrupted.

Other tumours are commonly more moveable than ſcirrhi, eſpecially when they have never been affected with active inflammation.

If we except the fungus hæmatodes, other tumours do not involve every kind of ſtructure, ſkin, muſcle, cellular ſubſtance, &c.; and the integuments ſeldom become affected before the diſtention, produced by the ſize of ſuch ſwellings, becomes very conſiderable. In ſcirrhous caſes, on the contrary, the ſkin generally ſoon becomes contaminated, diſcoloured, and puckered.

Some few tumours may be harder and heavier than a few ſcirrhous ſwellings, but the reverſe is uſually the caſe.

In a ſcirrhus of the breaſt, the part affected is generally hard, heavy, and connected with the mammary gland; and when moved, the whole gland moves along with it. Obſ. on Cancer, by Sir E. Home, p. 156.

As other indurations and tumours may aſſume the cancerous action, and even end in cancerous ulceration; and as ſome true ſcirrhi, when not irritated by improper treatment, may continue ſtationary for years; the occurrence of actual carcinoma cannot prove, that the preceding ſtate was that of ſcirrhus. The only criterion of the latter diſeaſe, which we poſſeſs, is deduced from the aſſemblage of characters already ſpecified; for, except the peculiar puckering, and ſpeedy leaden diſcolouration of the ſkin, no other appearances, conſidered ſeparately, form any line of diſcrimination.

In parts which have become ſcirrhous, the ſtructure uſually conſiſts of a very firm light brown ſubſtance, interſected by membranous or ligamentous ſepta, which run in various directions. The membranous ſepta are more numerous, and of greater thickneſs, in ſome caſes than in others. A cartilaginous ſubſtance is occaſionally blended with this ſtructure. The whole texture ſometimes reſembles very much a piece of common cartilage, ſoftened by maceration in a diſſolving fluid. Cyſts, containing a thin ſecretion, are ſometimes formed in ſcirrhi, particularly in thoſe of the teſticle and breaſt; but they are alſo frequently abſent. A ſubſtance, poſſeſſing the common characters of a ſcirrhus, has been known to be converted into a kind of bony matter. (Dr. Baillie in a Letter inſerted in Adams's work on the Cancerous Breaſt.) When a ſection of a ſcirrhus is made in an early ſtage, the centre is found to be more compact, harder to the feel, and of a more uniform texture, than the reſt of the tumour, and is nearly of the conſiſtence of cartilage. This middle part is not larger than a ſilver penny, and from this are ſeen white ligamentous bands, paſſing to the circumference of the diſeaſe, like rays, in every direction. In the interſtices between theſe bands, the ſubſtance is different, and leſs compact away from the centre. Tranſverſe ligamentous bands, of a fainter appearance, are likewiſe perceptible, forming a ſort of net-work, in the meſhes of which the new-formed ſubſtance is incloſed.

When the diſeaſe is more advanced, the whole maſs has a more uniform texture; no central point can be diſtinguiſhed; the external edge is more defined, and the ligamentous bands are more viſible, running with great irregularity.

When the diſeaſe has proceeded to cancerous ſuppuration (which, however, does not invariably occur previouſly to the formation of an outward ſore), a ſmall irregular cavity is formed, filled with a bloody fluid, and having ulcerated, jagged, and ſpongy ſides. Beyond theſe there is a radiated appearance of ligamentous bands; but the tumour, towards the circumference, is more compact, and conſiſts of diſtinct portions, each of which has a centre, ſurrounded by ligamentous bands in concentric circles.

In ſome inſtances, there is no appearance of ſuppuration nor ulceration in the centre of a ſcirrhus; but a cyſt is found filled with a tranſparent fluid, and having a fungus projecting into the cavity. Home on Cancer, p. 157—159.

The moſt characteriſtic mark of a ſcirrhus is this interſection of its ſtructure with white ligamentous bands. It is to be regretted, that the exiſtence of ſuch texture cannot be detected till the diſeaſe has been removed. Every ſurgeon ſhould be well appriſed that theſe membranous ſepta frequently extend a good way into the ſurrounding fat; for the circumſtance dictates, in the ſtrongeſt manner, the propriety of removing a conſiderable portion of the ſubſtance at the circumference of every ſcirrhous ſwelling.

Sometimes cyſts of moderate, or even of very minute ſize, containing a tranſparent fluid, and ſuppoſed by Dr. Adams to be hydatids, are found in the ſubſtance of ſcirrhi; but they are not ſo frequently attendant on the complaint, as to form any eſſential part of its character. In general, the ſuperficial veins have a dilated tortuous appearance.

The diſeaſed ſkin, covering a carcinomatous tumour, generally ulcerates before the ſwelling has attained any very great magnitude. A large chaſm is then produced in its ſubſtance, partly by a ſloughing and partly by an ulcerating proceſs. A copious diſcharge of very fetid ſanious matter follows. The ulcer becomes irregular in its figure and unequal on its ſurface. The edges are thick, indurated, and extremely painful; they often exhibit a ſerrated appearance,

pearance, being ſometimes retorted, at other times inverted. The ulcer ſometimes ſpreads with rapidity to a great extent, and its progreſs produces frequent hemorrhages, which, added to the irritation of the diſeaſe, reduce the patient to the loweſt ſtate of debility. Granulations generally grow on the ulcerated ſurface, when the ravages of the diſorder ſeem to undergo a temporary ſtop; but this apparent attempt at reparation only ends in the formation of an inveterate fungous ſubſtance.

While the ſkin remains entire, without ulceration, the health is in general not much impaired, unleſs the tumour be very large and the diſtention great. During the progreſs of the diſeaſe, ſome patients ſuffer diſtreſſing attacks of ſickneſs and vomiting, with ſymptoms of indigeſtion. As ſoon as ulceration of a ſcirrhous breaſt happens, the alteration of the health is in many caſes immediate. But this ſudden change does not conſtantly happen, much depending on the quickneſs or ſlowneſs of the diſeaſe, its magnitude, &c. In every caſe, however, ſooner or later after ulceration has taken place, the countenance changes for the worſe; debility, loſs of appetite, a cough, with tightneſs of the cheſt, and difficulty of breathing, come on; the bowels are ſometimes conſtipated, ſometimes relaxed, and very diſtreſſing ſickneſs and vomiting affect many patients, who at length ſink into the extreme ſtate of emaciation and weakneſs. Howard, p. 25.

The time when the lymphatic glands become affected is ſubject to great variety. Carcinoma of the breaſt is moſt apt to contaminate the axillary glands, and the diſeaſe of theſe parts ſometimes cauſes a ſwelling of the whole arm. Occaſionally, the lymphatic glands, towards the clavicle, are the only ones affected; and, in a few caſes, thoſe towards the ſternum are alone diſeaſed. In advanced caſes, the diſeaſe moſtly extends to the pectoral muſcle. There are inſtances, in which the cancerous diſeaſe of the breaſt extended to the lungs. The preſſure of a diſeaſed lymphatic gland on one of the axillary nerves has been obſerved to cauſe moſt excruciating agony. A fever has been known to occaſion a mortification of a cancerous breaſt, and, had the ſphacelus embraced all the contaminated parts, and the patient been leſs reduced, it ſeems probable that a cure might have followed the event. For caſes proving the foregoing ſtatements, ſee Obſ. on Cancer by ſir E. Home, p. 55. 59. 64. 76. 86. 91.

The treatment of ſcirrhus embraces two objects, the diſperſion and the removal of the tumour. When the hardneſs is ſo ſituated as to be eaſily removed by the knife, no delay ſhould be occaſioned by attempting to diſperſe a ſwelling of this nature. The operation ought to be performed early, as the chance of effectual extirpation is then the greateſt. On the other hand, the attempts at diſperſion rarely ſucceed; the means employed are tedious in their operation, often injure the health, and when of an irritating nature, and incautiouſly applied, convert the ſcirrhus into a cancer. Prudence will only allow the operation to be poſtponed, and diſcutient remedies tried, when the hardneſs is below its uſual degree; when the pain of the diſeaſe is not ſo great as to indicate a tendency to ulcerate and ſpread with rapidity, and when the ſwelling, induration, &c. have already ſeemed inclined to undergo a diminution.

The internal plans of treatment ordinarily tried, conſiſt in giving ſome of the following medicines, together with a light fluid diet; conium, belladonna, digitalis, preparations of mercury, arſenic, tinctura ferri muriatis, muriate of barytes, the mineral alkali, &c.

Living altogether on milk, or on a regimen juſt ſufficient to ſupport life, has been found to retard the malady. Vegetables for food, and diſtilled waters for drink, have alſo been repreſented as having a good effect. (See Reports on the Effects of a peculiar Regimen on Scirrhous Tumours, &c. by W. Lambe, M.D.) Juſtamond was ſtrongly in favour of arſenical medicines. Carmichael has praiſed various preparations of iron, as the carbonate, oxyphoſphate, ſuboxyphoſphate, &c. The doſes are from thirty to ſixty grains in a day, aloes being given to obviate the conſtipation ariſing from ſuch medicines.

In all caſes of cancer, ſevere pain is to be moderated by opium, and the bowels ſhould be kept in a regular ſtate by means of ſaline purgatives.

Electricity and a courſe of emetics have alſo had their advocates. The aqua lauroceraſi, in doſes of thirty or forty drops, has proved in ſome inſtances uſeful.

Retaining a ſcirrhus in an equal temperature, and defending it from external irritation, by a piece of ſwan's down, or rabbit's ſkin, cannot be too highly commended as a general plan.

In certain caſes, local applications, containing cicuta and belladonna, have been of ſervice. Indeed, theſe are the moſt ſafe topical applications; for mercury, gum ammoniac, and ſeveral others occaſionally employed, are dangerous, becauſe they are too irritating.

But it is not to be denied, that tumours, ſomewhat reſembling cancerous ſwellings, have now and then been diſperſed by the external uſe of ſpirit of wine, camphor, and the liquor plumbi acetatis, in different proportions, as well as by mercurial ointment of different degrees of ſtrength. (Home's Obſ. on Cancer, p. 154.) Repeated bleeding with leeches is ſaid to be often of ſervice. Tumours ariſing from cold, yield moſt readily to this method, while thoſe which are more indolent, and connected with a languid conſtitution, give way to hemlock or mercury. Howard on Cancer, p. 25.

An ounce of the ſulphate of iron, diſſolved in a pint of water, has been recommended by Mr. Carmichael as an application to ſcirrhi.

Knowing, as we do, the ſtructure and inveterate nature of true ſcirrhi, we are obliged to regard every alleged inſtance of cure, by internal or external remedies, as applicable in reality to another kind of diſeaſe. Applying cauſtics may indeed have cured cancerous diſeaſes, but then this was by extirpation, and not by any medicinal effect. We may lay it down as a maxim, that, as ſoon as a diſeaſe is aſcertained to be a ſcirrhus, the earlier its extirpation is attempted the better. Even when the diſeaſed part appears to be adherent and immoveable, its removal is not contra-indicated, if all the contaminated parts can be taken away.

The beſt mode of removing a ſcirrhous tumour is with the knife.

Even when a cancer has proceeded to ulceration, if the diſeaſe is not too extenſive, and the patient not too much reduced, the operation ought to be practiſed without delay. If it is too late, the treatment can only be palliative, and ſome of the above remedies muſt be preſcribed.

The moſt common external applications are preparations of lead, arſenic, ſolutions of iron, or of the hydrarg. mur. the carrot or fermenting poultice, pure oil, and the carbonate, arſeniate, phoſphate, &c. of iron, made into a paſte with water. Eſſays on Cancer by J. Carmichael.

The operation itſelf may prove an exciting cauſe of carcinoma, and will certainly be ſo, if the ſcirrhous part is not completely removed. The portion left behind will inevitably become cancerous. The chance of ſucceſs depends on the entire extirpation of the diſeaſe; and, in no operation is celerity more dangerous. In performing this operation,

tion, the maxim of *ſat cito, ſi ſat bene,* ſhould never be out of the ſurgeon's mind. Above all things, a free removal of the ſkin covering and adjoining the ſituation of the tumour, and taking away a quantity of the ſurrounding fat, are adviſeable.

Even when the diſeaſe has to all appearances been moſt completely cut out, together with a large portion of the ſurrounding ſubſtance, the wound ſometimes changes into a cancerous ulcer; and every prudent ſurgeon, therefore, always enſures his own reputation, by making a guarded prognoſis.

With a view to the prevention of relapſes, Mr. Abernethy ſtrongly urges the propriety of endeavouring, after the operation, to quiet the nervous ſyſtem, and keep the digeſtive organs in as healthy a ſtate as poſſible; and he recommends a mere vegetable diet, with as much milk, broth, and eggs, as is juſt ſufficient to hinder the patient from loſing ſtrength. Surgical Works, vol. ii. p. 93.

After the removal of a cluſter of diſeaſed glands from the axilla, a ſwelling of the arm has been known to enſue, and occaſion the patient's death. Home on Cancer, p. 62. See Cooper's Firſt Lines of the Practice of Surgery, ed. 3.

SCIRRHUS *of the Teſticle.* See SARCOCELE.

SCIRRHUS *Hepatis,* in *Medicine,* a term applied rather indefinitely to indurations of the liver. See LIVER, *Chronic Diſeaſes of the.*

SCIRRONES, a name given to a ſort of ſmall lice breeding under the ſkin.

SCIRROPHORIA, Σκιῤῥοφορια, in *Antiquity,* an anniverſary ſolemnity at Athens, upon the twelfth day of the month Scirrophorion, in honour of Minerva, or, as ſome ſay, of Ceres and Proſerpine. The name is derived from Sciras, a borough between Athens and Eleuſis, in which was a temple dedicated to Minerva, ſurnamed Sciras.

SCIRROPHORION, Σκιῤῥοφοριων, in *Ancient Chronology,* the twelfth and laſt month of the Athenian year. It contained twenty-nine days, and anſwered to the latter part of our May and beginning of June.

It had its name from the feaſt Scirrophoria, kept in it.

SCIRTIANA, in *Ancient Geography,* a town of Macedonia, between Lychnidum and Caſtra, according to the Itinerary of Antonine.

SCIRTONIUM, a town of the Peloponneſus, in Arcadia, according to Steph. Byz. and Pauſanias. The latter ſays, that it belonged to the Egyptians, and that it was one of thoſe places, whoſe inhabitants peopled Megalopolis.

SCIRTUS, *Daïſan,* a ſmall river of Aſia, in Oſroëne, which had its ſource in the mountains N.W. of Edeſſa, and after watering that town, which it occaſionally much injured, purſued its courſe towards the S.E. and diſcharged itſelf into a lake.

SCIRUS, a borough of Attica, at the mouth of the Cephiſus, which is ſaid to have taken its name from that of a prieſt or prophet of the foreſt of Dodona, who interpreted the oracles of that grove. Near this borough was the tomb of Céphiſidor, an Athenian diſtinguiſhed for his courage, who was famed for having formed a league between the Athenians, Attalus king of Myſia, Ptolemy king of Egypt, the Ætolians, the Rhodians, and the Cretans, and for engaging the ſuccour of the Romans to deliver his country from the oppreſſions of Philip, the father of Perſeus. The Romans, under a pretext of ſuccouring the Athenians, ſent Paulus Emilius, who defeated the Lacedæmonians, made Perſeus priſoner, and conquered Macedonia. Pauſanias places the borough of Scirus between Athens and Eleuſis.

SCISSA, a town of Spain, according to Polybius, who ſays that the Carthaginians were for the firſt time defeated by Scipio at this place.

SCISSIMA, in *Botany,* a name given by ſome authors to the beech-tree.

SCISSORS. Mr. Monro has given us the figure and deſcription of a pair of ſciſſors, the blades of which are crooked on the flat ſides. Theſe ſciſſors are very uſeful for taking off excreſcences from hollow parts, or for cutting in curve lines, which the common ſciſſors cannot eaſily be applied to. Med. Eſſ. Edinb. vol. v. art. 41.

SCITAMINEÆ, in *Botany,* a very natural and important order of plants, the eighth among the *Fragmenta* of Linnæus, and equivalent to the *Cannæ* of Juſſieu. Its name alludes to the aromatic qualities of moſt of the ſpecies, and particularly to the uſe made of ſome of them in cookery or in medicine; *ſcitamentum* being expreſſive of any thing rendered grateful to the palate, by ſeaſoning or other preparation. Accordingly, the ginger, turmeric, zedoary, and various ſorts of cardamoms, belong to this order. It ſtands between the ORCHIDEÆ and SPATHACEÆ, ſee thoſe articles; but is perhaps moſt related to the former, though eſſentially diſtinct from both, in many deciſive reſpects.

The genera referred to this order by Linnæus are *Muſa, Heliconia, Thalia, Maranta, Globba, Coſtus, Alpinia, Amomum, Curcuma, Kæmpferia, Canna, Renealmia* and *Myroſma;* to the laſt a mark of doubt is annexed, but without reaſon. Before we proceed further it is neceſſary to remark, that *Muſa* and *Heliconia* have really little to do with the *Scitamineæ;* nor are they aromatic, any more than *Canna,* which laſt, with *Thalia, Maranta,* and *Myroſma,* compoſe a ſection, at leaſt, of the order before us, if not a ſeparate order, to which the name of *Cannæ,* or *Canneæ,* may properly be applied. Mr. Brown has made this ſeparation in his Prodr. Nov. Holl. v. 1. 307, adding, to the four Linnæan genera juſt named, Willdenow's PHRYNIUM; ſee that article. All theſe plants, as Mr. Brown remarks, differ from real *Scitamineæ* in having a ſimple *anther,* no *vitellus,* and very little or no aromatic qualities.

The order of *Scitamineæ,* including the *Canneæ,* coming at the very threſhold of the Linnæan artificial ſyſtem, and being in themſelves very attractive, curious, and rare, have particularly engaged the attention of ſeveral diſtinguiſhed botaniſts, but with very unequal ſucceſs. No plants have been leſs underſtood, by Linnæus and his immediate followers, with regard to their genera, and the principles upon which theſe ought to be founded. None of theſe writers indeed have been furniſhed with ſufficient materials for the purpoſe. Koenig, who had acceſs to many more ſpecies of this family in a living ſtate, than any other Linnæan botaniſt, has contented himſelf with drawing up full deſcriptions of each, without adverting to principles of arrangement. His deſcriptions, publiſhed by Retzius in his third faſciculus of *Obſervationes Botanicæ,* are a fund of uſeful matter; and the contemplation of them ſeems to have ſuggeſted to Retzius an idea of the only true principle by which the genera of theſe plants can, with any certainty, be diſtinguiſhed, which is derived from the ſhape of the ſtamen. The writer laſt-mentioned has, nevertheleſs, not turned this principle to any account. The ingenious profeſſor Swartz, who has ſo well illuſtrated the *Orchideæ,* and whoſe attention was called to the *Scitamineæ* by their near affinity to that tribe, as well as by the great obſcurity in which he found them involved, has not thrown any light on their generic diſtribution. On the contrary, he aſſerts that their genera are ſo nearly akin as hardly to be diſtinguiſhable by botanical characters. The French botaniſts have done abſolutely nothing to clear up this family, but have adopted the ideas, and all the miſtakes, of Linnæus.

The moſt unfortunate attempt, relative to the genera of the *Scitamineæ*, was made by Giſeke, in his edition of the lectures of Linnæus upon the Natural Orders of Plants, printed at Hamburgh in 1792. This writer, working with other people's materials, and deſtitute of practical experience, boldly undertook to new-model the whole order. But as Gulliver's mathematical tailor of Laputa, having made a miſtake in the beginning of his calculation, brought him home a whole waggon-load of clothes; ſo Giſeke, ſetting out on erroneous principles, has preſented us with a rumbling waggon-load of new hard-named genera, diſmembering the old ones, not only by inſufficient characters, but by characters that do not exiſt; and eſtabliſhing new ones with as little ſcruple or ſucceſs.

Mr. Roſcoe of Liverpool (ſee ROSCOEA) has firſt ſuggeſted a method of reducing the genera of the *Scitamineæ* to regular order, by eſſential characters derived from the ſtructure of the ſtamen, particularly its filament. This principle is found to be the only one which, while it is clear and preciſe in defining technical eſſential characters, leads to the eſtabliſhment of natural genera; for the infloreſcence, of which Adanſon had firſt ſhewn the importance in this reſpect, though not admitted by Mr. Roſcoe into his characters, goes along with, and confirms, them all. The labours of Giſeke ſeem not to have come under the inſpection of this ingenious writer, nor would they, certainly, have yielded him any aſſiſtance. He reviews the attempts of other preceding botaniſts, and after ſhewing the inſufficiency, or uncertainty, of other modes of generic definition, propoſes his own, according to which he defines all the known genera of this natural order, ranging under each all the ſpecies of which he could diſcover any certain indications. His treatiſe on the ſubject may be found in the Tranſactions of the Linn. Soc. v. 8. 330. Before we detail the characters of his genera, we ſhall give an account of the lateſt obſervations on the ſubject under conſideration, that have reached us. Theſe are Mr. Brown's, in his Prodr. Nov. Holl v. 1. 305. This learned author thus defines the true *Scitamineæ*, ſeparating from them the *Canneæ*, as above mentioned. It muſt be obſerved that he follows the hypotheſis of Juſſieu, in not allowing a *corolla* to theſe plants, inaſmuch as they are monocotyledonous. We ſhall for the preſent adopt his phraſeology in this point.

Perianth ſuperior, double, both tubular; the *outer* (probably acceſſory) ſhorteſt, its margin ſomewhat three-lobed: *inner* with a double limb; the *outermoſt* in three deep, nearly equal, ſegments, the anterior ſegment (which, by the reverſed poſition of the flower, often becomes poſterior) ſometimes differently ſhaped from the reſt; the *innermoſt* diſſimilar, deeply three-cleft; its larger ſegment, or lip, inſerted between the lateral diviſions of the outer limb, and often two or three-lobed; its lateral ſegments ſmaller, ſometimes diminutive, like little teeth, or ſcarcely diſcernible.

Stamen one, inſerted into the throat, within the anterior ſegment of the outer limb, and therefore oppoſite to the lip. *Filament* moſtly dilated, and reſembling a petal, often extended beyond the anther, in a ſimple or divided form. *Anther* cloſely attached lengthwiſe, except at its baſe, to the filament, of two diſtinct parallel lobes, each lobe of two cells, burſting longitudinally, the inflexed edges of their ſuture being originally connected with their internal partition, which laſt finally diſappears; the baſe of each lobe is often not attached to the filament, and occaſionally ends in a ſpur. *Pollen* globoſe, ſmooth.

Corpuſcles two, which are in fact barren ſtamens, ſmall, nearly cylindrical, cloſe to the baſe of the ſtyle, ſometimes combined, rarely wanting.

Germen of three, ſometimes incompletely ſeparated, cells, with the rudiments of many ſeeds in each, which are inſerted, in a double row, into the inner angle of the cell. *Style* thread-ſhaped, received into a channel of the filament. *Stigma* dilated, hollow.

Capſule with three cells, three valves, occaſionally becoming pulpy, and many ſeeds. *Partitions* almoſt always central, inſerted into the axis of the valve, frequently ſeparated therefrom at length, and of a different ſubſtance.

Seeds roundiſh, generally becoming angular by mutual preſſure, either tunicated or naked. *Albumen* farinaceous, of a radiated ſubſtance, deficient at the ſcar. *Vitellus* fleſhy, ſomewhat funnel-ſhaped, contrary to the ſcar, moſtly, perhaps always, perforated at the baſe, for the tranſmiſſion of the radicle. *Embryo* ſheathed by the vitellus, but not attached to it, monocotyledonous, nearly cylindrical. *Radicle* reaching almoſt as far as the ſcar, for the moſt part naked, and not encloſed either in the vitellus or albumen.

Theſe are aromatic *herbs*, of rather a peculiar habit, growing chiefly between the tropics, and ſcarcely reaching ſo far as the thirty-fourth degree of latitude. The *root* is perennial, moſtly tuberous, creeping. *Stem* ſimple, ſometimes very ſhort. *Leaves* ſimple, with a ſingle midrib, ſending off, at acute angles, very numerous, crowded, perfectly ſimple veins; the footſtalk ſheathing, ſplit at one ſide, and either naked at the ſummit, or crowned with a membranous appendage, as in graſſes, which is ſometimes entire, forming a leſſer ſheath above the inſertion of the leaf itſelf. *Infloreſcence* either a denſe ſpike, or a cluſter, or ſomewhat of a panicle, terminating the ſtalk or ſtem, rarely lateral; ſometimes, from the extreme ſhortneſs of the ſtalk, almoſt radical. *Common Bracteas* either permanent or deciduous; *partial ones* ſpathaceous, hooded, moſt uſually two-flowered, one flower earlier than the other, which laſt is ſometimes abortive.

The diſcriminative characters of the order conſiſt in the double perianth; ſolitary ſtamen; two-lobed anther; and ſeeds furniſhed with a vitellus.

Such is Mr. Brown's accurate and full general deſcription of the true *Scitamineæ*, the *Canneæ* being, as above ſaid, excluded. We poſtpone this able writer's obſervations upon the VITELLUS, as well as his elucidation of the fruit of THALIA, till we come to thoſe articles in their proper place hereafter.

Mr. Roſcoe's ideas of a ſcitaminean flower are exactly conſonant with Mr. Brown's, except that he conſiders the inner perianth of the latter as a corolla with a double limb, which is the moſt obviouſly natural mode of conſidering it, and in which we, without heſitation, concur, as may be ſeen in our deſcriptions of any of the genera of this tribe; ſee GLOBBA, HEDYCHIUM, KÆMPFERIA, and ROSCOEA; as well as MARANTA, one of the order of *Canneæ*. Some have called the largeſt ſegment of the inner limb, which uſually makes the moſt conſpicuous and beautiful part of theſe flowers, the lower lip of the *nectary*, and the filament its upper lip. But there is leſs reaſon than uſual for adopting the term nectary here. It is quite unneceſſary, and with regard to the filament, certainly erroneous; for that has no connection, nor ſcarcely any thing in common, with the other; which laſt indeed, on account of its peculiar form, ſituation, and appearance, is ſtill commodiouſly denominated the *lip* of the flower, without any implication of its being a nectary or not. The two ſmall bodies, more or leſs diſcernible, which Mr. Brown has ſo ingeniouſly and ſatisfactorily ſhewn to be incomplete ſtamens, in this tribe, as well is in the *Orchideæ*, have by ſome botaniſts been termed nectaries, but without any thing to warrant ſuch phraſeology. Their preſence ſerves beautifully to preſerve the analogy of both theſe orders with other monocotyledonous plants, in which the ſtamens are uſually three or ſix, and the other parts of the flower correſpondent with them in number; while in the dicotyledonous tribe the numbers five and ten moſt uſually prevail; even in the calyx and corolla of thoſe flowers whoſe ſtamens are profuſely abundant, though their piſtils perhaps, or the cells of their fruits, are moſtly reſtricted to the number which prevails in the two coverings of the flower, and often to ſimple unity.

The *Scitamineæ*, as well as the *Canneæ*, are properly placed in the *Monandria Monogynia* of the Linnæan ſexual ſyſtem. The late profeſſor Vahl, whoſe *Enumeratio Plantarum*, in two octavo volumes, ſo well illuſtrates the two firſt claſſes of this ſyſtem, with the firſt order of the third, has omitted theſe plants altogether in their proper place, and has in his preface, p. 9, declared his opinion that they belong to the claſs *Gynandria*. The ingenious author was doubtleſs glad to get rid, for the preſent, of the extreme difficulty he would have found, in determining their genera and ſpecies, according to his uſual plan of actual obſervation and examination, ſo well diſplayed in what he has accompliſhed. The idea of their being gynandrous is ſupported by no reaſon or argument whatever, but a ſlight connection, not always exiſting, between the margins of the ſtamen and ſtyle in *Canna;* nor can we form any conception how the able French botaniſt Richard, who is recorded to have carefully examined "numerous plants" of this order, (where he obtained them in ſuch profuſion we know not,) could form ſo erroneous an opinion as the above for which he is cited by Vahl.

Mr. Roſcoe arranges as follows, in the form of a table, all the genera of the true *Scitamineæ* known to him, as well as the others which Linnæus and Juſſieu included in that order, but for which Mr. Roſcoe retains Juſſieu's name of *Cannæ*.

CANNÆ. *Anther ſimple. Style erect, not embraced by the anther.*

Sect. 1. Anther united with the petal-like filament.	
Style club-ſhaped; ſtigma obtuſe.	*Canna.*
Style petal-like; ſtigma triangular.	*Maranta.*
Sect. 2. Anther borne by a proper filament.	
Style depreſſed; ſtigma depreſſed, perforated, ringent.	*Thalia.*
Filament awl-ſhaped, ſhort. Style thick, inclined towards the anther.	*Phrynium.*
Style thick, depreſſed, cloven lengthwiſe; ſtigma gaping.	*Myroſma.*

SCITAMINEÆ. *Anther double. Style received into the channel between the lobes of the anther.*

Sect. 1. Filament not elongated beyond the anther.	
Filament woolly at the baſe. Style thick, erect; ſtigma capitate.	*Philydrum.*
Filament bent. Style twice as long as the filament and its anther.	*Hedychium.*
Style erect, the length of the filament and anther.	*Alpinia.*
Sect. 2. Filament extended beyond the anther.	
Apex of the filament awl-ſhaped, with a furrow.	*Zingiber.*
Apex of the filament ovate, flat.	*Coſtus.*
———————— two-lobed.	*Kæmpferia.*
———————— three-lobed, with appendages at the baſe of the filament.	*Amomum.*
Apex of the filament three-lobed, the middle lobe bearing the anther.	*Curcuma.*
Apex of the filament with an appendage. Style very long.	*Globba.*

It muſt be obſerved that Mr. Brown removes *Philydrum*, juſtly we believe, from the *Scitamineæ*, referring it, not without heſitation, to his *Junceæ*. *Hellenia* of this author, and of Willdenow, Sp. Pl. v. 1. 4, is to be added to the ſecond ſection of true *Scitamineæ*, having a very ſhort, ſimple or cloven, rounded lobe, or extenſion of the filament, a little way beyond the anther.

To the firſt ſection are to be added ROSCOEA, which the reader will find in its proper place; and a probably new genus conſiſting of the Leſſer Cardamom, *Amomum repens* of Sonnerat, of which a complete deſcription is given by Mr. White, ſurgeon at Bombay, in Tranſ. of Linn. Soc. v. 10. 229. This laſt was referred by the writer of the preſent article to *Alpinia*, from an examination of very indifferent dried ſpecimens; and not without heſitation, on account of the panicles being radical, inſtead of terminal. Dr. Maton, V. P. L. S. in a learned critical and botanical note to Mr. White's paper, has called this genus *Elettaria*, from *Elettari*, the Malabar name of the plant. But this being of barbarous origin, we ſhould greatly prefer the name of *Matonia*, which we believe it is Mr. Roſcoe's intention to adopt. The eſſential character has not yet been clearly made out; for the tranſverſe pair of appendages to the lip, very ſtriking in the figure, occur alſo, more or leſs conſpicuouſly, in *Alpinia*. The triangular, ſcarcely dilated, ſtigma may perhaps aſſiſt, but the ſtigma of *Alpinia* is not ſo concave or cup-ſhaped as in many other *Scitamineæ*. We can perceive no diſtinction in the filament or anther; nor can we allow the ſituation of the infloreſcence, to offer more than a preſumptive character, however ſtrong with reſpect to habit.

SCITE. See SITE.

SCITHÆ, in *Ancient Geography*, a town of Thrace, near Potidæa.

SCITUATE, in *Geography*, a poſt-town of America, in Plymouth county and ſtate of Maſſachuſetts, on the bay of that name; incorporated in 1637, and containing 2969 inhabitants; 30 miles S.E. of Boſton.—Alſo, a townſhip of Rhode iſland, in Providence county, between Foſter and Johnſton, containing 2568 inhabitants; 27 miles N.W. of Newport.

SCIURIS, in *Botany*, appears to have obtained that name from the reſemblance of its curved ſpike of flowers, at leaſt in Aublet's figure, to a ſquirrel's tail; and not, as De Theis imagines, from the ſhape of the upper lip of the corolla, which could ſcarcely have ſuggeſted any idea of this animal.—Schreb. Gen. 24. Willd. Sp. Pl. v. 1. 153. Vahl. Enum. v. 1. 101. Mart. Mill. Dict. v. 4. (Raputia; Aubl. Guian. v. 2. 670. Juſſ. 421. Lamarck Illuſtr. t. 10.)—Claſs and order, *Diandria Monogynia*. Nat. Ord. unknown.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, ſhort, with five acute teeth. *Cor.* of one petal, many times longer than the calyx, tubular, incurved, two-lipped; upper lip three-cleft, its middle ſegment rather the longeſt; lower ſomewhat ſhorter, in two ſimilar oblong diviſions. *Stam.* Filaments two, ſhort, inſerted into the bottom part of the upper lip, with two ſcales at the baſe of each; anthers vertical, oblong, ſhorter than the corolla, cloven at the baſe. There are three longer abortive filaments, inſerted into the baſe of the upper lip, ſhorter than the anthers of the perfect ſtamens, and hairy at their origin. *Piſt.* Germen ſuperior, pentagonal, ſurrounded by an annular gland; ſtyle incurved, thread-ſhaped, about as long as the corolla ; ſtigma rather depreſſed, three-lobed. *Peric.* Capſules five, connected, depreſſed, rounded externally, with one cell and two valves, burſting towards the inner angle. *Seeds* ſolitary, oblong.

Eſſ. Ch. Calyx five-cleft, ſhort. Corolla five-cleft, two-lipped. Stamens five ; three of them abortive. Capſules five, combined, of one cell and two valves. Seeds ſolitary.

1. S. *aromatica.* Willd. n. 1. Vahl. n. 1. (Raputia aromatica ; Aubl. t. 272.)—Native of the foreſts of Orapu in Guiana, bearing flowers, as well as ripe fruit, in Auguſt. The *trunk* of this ſhrub is about two feet high, and two or three inches in diameter, with a ſmooth, whitiſh aromatic bark. The *wood* is white. *Branches* oppoſite, leafy. *Leaves* oppoſite, on long ſtalks, ternate. *Leaflets* equal, nearly ſeſſile, three inches long, elliptic-lanceolate, pointed, entire, firm, ſmooth, full of pellucid dots, viſible when oppoſed to the light. *Spikes* axillary, ſolitary, ſtalked, many-flowered, about three inches long, ſtrongly curved downward, their common ſtalk channelled along the upper ſide. *Flowers* placed in two rows, on the edges of this channel. *Corolla* greeniſh, about a quarter of an inch long. The kernel of the *ſeeds* is greeniſh and aromatic. Nothing is recorded of the qualities or uſes of any part of the plant. Juſſieu ſuſpects its affinity to MONNIERIA ; ſee that article. The *leaves* indeed are ſimilarly dotted, but leſs copiouſly than in *Monnieria,* whoſe foliage moreover is alternate, and hairy, and whoſe infloreſcence is totally different. There is no aromatic flavour remaining in the bark of Aublet's ſpecimen, but merely a ſlight bitterneſs, perhaps with ſome degree of acrimony.

SCIUROSIA, in *Geography,* a town of Perſia, in the province of Kerman ; 99 miles S.E. of Sirgian.

SCIURUS, the *Squirrel,* in *Zoology,* a genus of animals of the claſs Mammalia, and order Glires. The generic character is, that it has two fore-teeth, of which the upper are wedged, the lower are acute : there are five upper grinders on each ſide, and four lower ones ; the clavicles are perfect ; the tail is ſhed on each ſide ; the whiſkers are long. The animals compoſing this elegant genus are remarkable for the livelineſs of their diſpoſition, the celerity of their motions, and the general beauty and neatneſs of their appearance. They inhabit woods, live entirely on vegetable food, and take up their reſidence in trees, where they prepare their neſts. Some ſpecies are furniſhed with an expanſile lateral ſkin, reaching from the fore-legs to the hind ; by the help of which they are enabled to ſpring to a greater diſtance than the reſt of their genus, and to tranſport themſelves occaſionally from one tree to another : but this momentary ſupport in the air is all that they are capable of ; and though called, from this circumſtance, flying ſquirrels, they are unable to continue that action in the manner of bats. There are two diviſions in this genus, containing about thirty ſpecies, of which we ſhall now give ſome account.

A. *The Squirrels of this Diviſion have Climbers, but no flying Membrane.*

Species.

* VULGARIS, or Common Squirrel. The ears of this ſpecies are bearded at the tip ; the tail has the ſame colour with that of the back : it is large, with lively black eyes ; the head, the body, the legs, and the tail, are of a bright reddiſh-brown ; the breaſt and belly are white ; the hair on each ſide of its tail is flat. It is a native of almoſt all parts of Europe, as well as of the northern and temperate parts of Aſia ; but it is obſerved to vary in the caſt of its colours in different climates, and in the northern regions it becomes grey in winter. It varies in its ſize ; but the general meaſure of the European ſquirrel is about eight inches from the noſe to the root of the tail, and the tail is nearly as long. In the ſpring theſe animals ſeem peculiarly active, purſuing one another in the trees, and exerting various efforts with great agility. They appear to dread the heat of the ſun ; for during the day they commonly remain in their neſts, making their principal excurſions by night. Their habitation is ſo contrived as to be perfectly clean, warm, and impenetrable to the rain ; and it is compoſed of moſs, dried leaves, and other things of a ſimilar nature. It is ſituated in the fork of two branches, having only a ſmall aperture near the top, which is of a conical form, ſo as to throw off the rain. The ſquirrel generally produces three or four in number. It feeds on the buds and young ſhoots of trees, and is ſaid to be particularly fond of thoſe of the fir and pine : it collects likewiſe great quantities of nuts, which it depoſits in the hollows of trees for its winter food, together with beech-maſt, acorns, &c. Thoſe that inhabit Siberia collect various kinds of fungi for this purpoſe. In a ſtate of captivity, nuts form its principal food, but it will eat other vegetable ſubſtances, and is delighted with ſugar and other ſweets. In ſome parts of Siberia the ſquirrel is found entirely white, with red eyes : in other parts, and particularly at Baikal, it is often perfectly black. In this country, and other parts of Europe, it is found with a tail milk-white, the other parts are of the uſual colour. From theſe circumſtances the varieties of this ſpecies are enumerated as follow : 1. The upper parts are reddiſh-brown ; the breaſt and belly are white. 2. The tail of a pure and beautiful white. 3. Thoſe that are, in winter, blueiſh-aſh, in ſummer red and the belly white. 4. Uniformly black. 5. Entirely white, but with red eyes. 6. Gloſſy ſilver-grey. The ſquirrel, if it has more food than it can eat, hides the remainder : it drinks but little : it is ſaid to paſs rivers upon a piece of bark or wood, erecting its tail for a ſail : the fleſh is eſteemed in ſome places as fit food : it is preyed upon by vermin, ſerpents, and many other animals : the ſkins are valuable ; it brings forth young twice a-year, and is gravid a month.

ALBIPES ; White-legged Squirrel. The ears of this ſpecies are ſlightly tufted ; the body above is reddiſh-brown, beneath it is white ; the tail is duſky. It inhabits Ceylon : the tail is ſhorter than that of the laſt.

NIGER ; Black Squirrel. This is without ears ; the body is black. A variety has the noſe, neck, and tip of the tail white. It is entirely of a ſhining black, except that the muzzle and the tip of the tail are ſometimes white : ſpecimens have alſo been ſeen with a white ring round the neck. It inhabits North America and New Spain : it is gregarious ; very miſchievous to fields of maize ; tail ſhortiſh.

VULPINUS, or Cat Squirrel. This is ſaid to be equal in ſize to the grey ſquirrel, which comes next in order. The ears are not bearded ; the body is tawny, mixed with aſh, and large. In a variety the general colour is white ; the throat, inſide of the legs, and thighs black. It inhabits North America, and is the ſize of a ſmall rabbit ; the fur is coarſe ; ears at the tips and tail tawny.

CINEREUS ; Grey Squirrel. The ears of this are not bearded ; the body is cinereous, the belly is white. This ſpecies is confined entirely to North America, in many parts of which it is extremely common. In its general form, as well as in its way of life, it reſembles the European ſquirrel. It is about half the ſize of a full-grown rabbit ;

the whole animal is of an elegant pale grey, with the inſides of the limbs, and the under parts of the body, white; the ears and tail are ſometimes tinged with black; in ſome ſpecimens a yellowiſh caſt prevails. It is frequently ſo numerous as to do incredible miſchief to plantations of corn; hence it is a proſcribed animal, and ſo much as three-pence *per* head have been given for every one killed, and at this rate, it is ſaid, that in the year 1749, eight thouſand pounds were paid in rewards. The grey ſquirrel reſides principally among trees, in the hollows of which it makes its neſt. The great dexterity which it exhibits in changing its place on trees, renders it extremely difficult to kill. It is readily tamed, and in that ſtate will aſſociate with other domeſtic animals.

Hudsonius; Hudſon's Bay Squirrel. Ears naked; back dark grey; belly aſh-coloured; tail dark grey, annulate, and tipt with black. It is a native of the colder parts of North America, and particularly of the region from whence it takes its name. It is found in the pine-foreſts of that country, and feeds chiefly on the cones. It is ſmaller than the common European ſquirrel, and the tail is neither ſo long in proportion nor ſo full of hair. It does not alter its colour during the whole year. In winter it keeps in its neſt, and makes its appearance on the return of the warm ſeaſon.

Carolinensis; Carolina Squirrel. Ears naked; body mixed grey, white, and ruſty; beneath white; tail brown, mixed with black and edged with white. Inhabits Carolina, as its name imports. It is the ſize of the laſt, and has by Dr. Shaw been conſidered as a variety of it.

Virginianus; Virginian Squirrel. The body is a mixed dirty-white and black; the fur is coarſe. It is a native of Virginia, and is about the ſize of the S. cinereus. The throat, inſides of the legs, and thighs, are black; the tail is ſhort, dull, and yellow.

Persicus; Perſian Squirrel. The ears are plain; the body dark, ſides white, belly yellow; the tail is mixed with black and aſh, with a white ring. It inhabits the higher mountains of Perſia. It reſembles the S. vulgaris, but does not vary in colour. It is an inhabitant of the mountainous parts of Perſia.

Anomalus; Georgian Squirrel. Ears plain, rounded; body above yellow, mixed with brown, beneath it is dark tawny; the tail is the ſame as the upper parts. It is a native of Georgia in Aſia. Its mouth is white; the noſe is black at the tip; the cheeks are yellow; whiſkers and orbits brown; the ears are flame-coloured, and within whitiſh.

Bicolor; Javan Squirrel. Ears plain and acute; the body above is black, beneath tawny; the thumb-claw of the fore-feet is large and round. It is found at Java, and is about a foot long.

Erythræus; Ruddy Squirrel. Ears ſlightly bearded at the tip; the body above is mixed yellow and brown, beneath red, mixed with tawny; tail the ſame, with a longitudinal dark ſtripe. It inhabits India, is larger than the S. vulgaris; a large warty protuberance inſtead of the thumb.

Macrourus; Ceylon Squirrel. The tail is grey, and twice as long as the body. It is a native of Ceylon, and is thrice as large as the S. vulgaris.

Maximus; Great Squirrel. This is the largeſt among all the known ſpecies of ſquirrels, it being the ſize of the common cat. It is a native of India, and was firſt deſcribed by M. Sonnerat, who ſays it is found in the Malabar country, where it feeds on fruits, and is particularly fond of the milk of the cocoa-nut, which it pierces when it is ripe, in order to obtain the liquor. The fur on the whole animal is long and full; the top of the head, ears, back, and ſides, are ferruginous; and a ſmall band of a ſimilar colour commences beneath each ear, paſſing along the neck towards the ſides. This animal is ſaid to be eaſily tamed, and is called about the coaſts of Malabar by the name of the great wood-rat.

Abyssinicus; Abyſſinian Squirrel. Body above ruſty-black, beneath cinereous; tail about eighteen inches long. It is, as its ſpecific name imports, a native of Abyſſinia, and has been thought to be only a variety of the maximus. It is very good tempered and ſportive.

Indicus; Bombay Squirrel. Ears tufted; body above dull purple, beneath yellow; tail orange at the tip. It is ſixteen inches long, and is a native of Bombay.

Flavus; Fair Squirrel. Ears plain, roundiſh; body pale yellow; tail round. It inhabits near Carthagena, in America. It is a very ſmall animal; the hair is white at the tips; the fore-thumb conſiſts of only a ſmall nail.

Palmarum; Palm Squirrel. Body greyiſh, with three yellowiſh ſtripes; tail annulate, with whitiſh and black. This is an inhabitant of the hotter parts of Aſia and Africa. It feeds on cocoa-nuts, and is extremely fond of the wine made from the palm-tree. It is not more than three inches long; the tail is erect, not ſhadowing the body; the ears are ſhort, broad, hairy, roundiſh.

Getulus; Barbary Squirrel. The body of this animal is brown, with four whitiſh longitudinal ſtripes. It inhabits Barbary, and is about five inches long.

Badjing; Plantane Squirrel. The body is of a pale cheſnut colour, with a yellow ſtripe along the ſides. It is a native of Java, and is very ſhy.

Striatus; Striped Squirrel. Body is yellowiſh, with five longitudinal brown ſtripes of a blackiſh colour. This is a native of the colder regions of Aſia and North America, and it has been found, but not very frequently, in ſome parts of Europe. It differs from the major part of the ſquirrel tribe in its manner of life, which rather reſembles that of the dormouſe. It reſembles ſome of the mouſe tribe in this, that it is provided with cheek-pouches for the temporary reception of food, a peculiarity not to be found in any other ſpecies of ſquirrel. Its general length is not ſix inches, and its tail is about the ſame. On the upper parts its colour is a reddiſh-brown, and on the under white; down the ridge of the back runs a black ſtreak; and on each ſide the body are two others; the included ſpace between each being of a pale yellow tinge; the tail is marked with circular ſpaces, like that of a mouſe, but the fur ſpreads ſlightly on the ſides, as in other ſpecies. Theſe animals are extremely common in Siberia, inhabiting the maple and birch woods of that country, and generally forming their neſts near the root of ſome tree. They never aſcend trees in the manner of other ſquirrels, unleſs ſuddenly ſurpriſed or purſued, when they will climb with great expedition, and conceal themſelves among the branches. They collect their ſtores during the autumnal ſeaſon, and on the ſetting in of the winter conceal themſelves in their burrows, the entrances of which they ſtop, and paſs the greateſt part of the cold weather in ſleep, and in feeding on their collected ſtores; but if, by the great length of the winter, their proviſions happen to fail, they then ſally out in queſt of freſh ſupplies, and will occaſionally make their way into granaries, and even into houſes. They are very choice in their food, always preferring the ſuperior grain, as wheat to rye or barley. They are very wild, and not eaſily reconciled to a ſtate of captivity, continuing extremely timid, and manifeſting no ſymptoms of incurved, thread-ſhaped, about as long as the corolla; ſtigma rather depreſſed, three-lobed. *Peric.* Capſules five, connected, depreſſed, rounded externally, with one cell and two valves, burſting towards the inner angle. *Seeds* ſolitary, oblong.

Eſſ. Ch. Calyx five-cleft, ſhort. Corolla five-cleft, two-lipped. Stamens five; three of them abortive. Capſules five, combined, of one cell and two valves. Seeds ſolitary.

1. S. *aromatica.* Willd. n. 1. Vahl. n. 1. (Raputia aromatica; Aubl. t. 272.)—Native of the foreſts of Orapu in Guiana, bearing flowers, as well as ripe fruit, in Auguſt. The *trunk* of this ſhrub is about two feet high, and two or three inches in diameter, with a ſmooth, whitiſh aromatic bark. The *wood* is white. *Branches* oppoſite, leafy. *Leaves* oppoſite, on long ſtalks, ternate. *Leaflets* equal, nearly ſeſſile, three inches long, elliptic-lanceolate, pointed, entire, firm, ſmooth, full of pellucid dots, viſible when oppoſed to the light. *Spikes* axillary, ſolitary, ſtalked, many-flowered, about three inches long, ſtrongly curved downward, their common ſtalk channelled along the upper ſide. *Flowers* placed in two rows, on the edges of this channel. *Corolla* greeniſh, about a quarter of an inch long. The kernel of the *ſeeds* is greeniſh and aromatic. Nothing is recorded of the qualities or uſes of any part of the plant. Juſſieu ſuſpects its affinity to MONNIERIA; ſee that article. The *leaves* indeed are ſimilarly dotted, but leſs copiouſly than in *Monnieria,* whoſe foliage moreover is alternate, and hairy, and whoſe infloreſcence is totally different. There is no aromatic flavour remaining in the bark of Aublet's ſpecimen, but merely a ſlight bitterneſs, perhaps with ſome degree of acrimony.

SCIUROSIA, in *Geography,* a town of Perſia, in the province of Kerman; 99 miles S.E. of Sirgian.

SCIURUS, the *Squirrel,* in *Zoology,* a genus of animals of the claſs Mammalia, and order Glires. The generic character is, that it has two fore-teeth, of which the upper are wedged, the lower are acute: there are five upper grinders on each ſide, and four lower ones; the clavicles are perfect; the tail is ſhed on each ſide; the whiſkers are long. The animals compoſing this elegant genus are remarkable for the livelineſs of their diſpoſition, the celerity of their motions, and the general beauty and neatneſs of their appearance. They inhabit woods, live entirely on vegetable food, and take up their reſidence in trees, where they prepare their neſts. Some ſpecies are furniſhed with an expanſile lateral ſkin, reaching from the fore-legs to the hind; by the help of which they are enabled to ſpring to a greater diſtance than the reſt of their genus, and to tranſport themſelves occaſionally from one tree to another: but this momentary ſupport in the air is all that they are capable of; and though called, from this circumſtance, flying ſquirrels, they are unable to continue that action in the manner of bats. There are two diviſions in this genus, containing about thirty ſpecies, of which we ſhall now give ſome account.

A. *The Squirrels of this Diviſion have Climbers, but no flying Membrane.*

Species.

* VULGARIS, or Common Squirrel. The ears of this ſpecies are bearded at the tip; the tail has the ſame colour with that of the back: it is large, with lively black eyes; the head, the body, the legs, and the tail, are of a bright reddiſh-brown; the breaſt and belly are white; the hair on each ſide of its tail is flat. It is a native of almoſt all parts of Europe, as well as of the northern and temperate parts of Aſia; but it is obſerved to vary in the caſt of its colours in different climates, and in the northern regions it becomes grey in winter. It varies in its ſize; but the general meaſure of the European ſquirrel is about eight inches from the noſe to the root of the tail, and the tail is nearly as long. In the ſpring theſe animals ſeem peculiarly active, purſuing one another in the trees, and exerting various efforts with great agility. They appear to dread the heat of the ſun; for during the day they commonly remain in their neſts, making their principal excurſions by night. Their habitation is ſo contrived as to be perfectly clean, warm, and impenetrable to the rain; and it is compoſed of moſs, dried leaves, and other things of a ſimilar nature. It is ſituated in the fork of two branches, having only a ſmall aperture near the top, which is of a conical form, ſo as to throw off the rain. The ſquirrel generally produces three or four in number. It feeds on the buds and young ſhoots of trees, and is ſaid to be particularly fond of thoſe of the fir and pine: it collects likewiſe great quantities of nuts, which it depoſits in the hollows of trees for its winter food, together with beech-maſt, acorns, &c. Thoſe that inhabit Siberia collect various kinds of fungi for this purpoſe. In a ſtate of captivity, nuts form its principal food, but it will eat other vegetable ſubſtances, and is delighted with ſugar and other ſweets. In ſome parts of Siberia the ſquirrel is found entirely white, with red eyes: in other parts, and particularly at Baikal, it is often perfectly black. In this country, and other parts of Europe, it is found with a tail milk-white, the other parts are of the uſual colour. From theſe circumſtances the varieties of this ſpecies are enumerated as follow: 1. The upper parts are reddiſh-brown; the breaſt and belly are white. 2. The tail of a pure and beautiful white. 3. Thoſe that are, in winter, blueiſh-aſh, in ſummer red and the belly white. 4. Uniformly black. 5. Entirely white, but with red eyes. 6. Gloſſy ſilver-grey. The ſquirrel, if it has more food than it can eat, hides the remainder: it drinks but little: it is ſaid to paſs rivers upon a piece of bark or wood, erecting its tail for a ſail: the fleſh is eſteemed in ſome places as fit food: it is preyed upon by vermin, ſerpents, and many other animals: the ſkins are valuable; it brings forth young twice a-year, and is gravid a month.

ALBIPES; White-legged Squirrel. The ears of this ſpecies are ſlightly tufted; the body above is reddiſh-brown, beneath it is white; the tail is duſky. It inhabits Ceylon: the tail is ſhorter than that of the laſt.

NIGER; Black Squirrel. This is without ears; the body is black. A variety has the noſe, neck, and tip of the tail white. It is entirely of a ſhining black, except that the muzzle and the tip of the tail are ſometimes white: ſpecimens have alſo been ſeen with a white ring round the neck. It inhabits North America and New Spain: it is gregarious; very miſchievous to fields of maize; tail ſhortiſh.

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CINEREUS; Grey Squirrel. The ears of this are not bearded; the body is cinereous, the belly is white. This ſpecies is confined entirely to North America, in many parts of which it is extremely common. In its general form, as well as in its way of life, it reſembles the European ſquirrel. It is about half the ſize of a full-grown rabbit;

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the whole animal is of an elegant pale grey, with the inſides of the limbs, and the under parts of the body, white; the ears and tail are ſometimes tinged with black; in ſome ſpecimens a yellowiſh caſt prevails. It is frequently ſo numerous as to do incredible miſchief to plantations of corn; hence it is a proſcribed animal, and ſo much as three-pence *per* head have been given for every one killed, and at this rate, it is ſaid, that in the year 1749, eight thouſand pounds were paid in rewards. The grey ſquirrel reſides principally among trees, in the hollows of which it makes its neſt. The great dexterity which it exhibits in changing its place on trees, renders it extremely difficult to kill. It is readily tamed, and in that ſtate will aſſociate with other domeſtic animals.

Hudsonius; Hudſon's Bay Squirrel. Ears naked; back dark grey; belly aſh-coloured; tail dark grey, annulate, and tipt with black. It is a native of the colder parts of North America, and particularly of the region from whence it takes its name. It is found in the pine-foreſts of that country, and feeds chiefly on the cones. It is ſmaller than the common European ſquirrel, and the tail is neither ſo long in proportion nor ſo full of hair. It does not alter its colour during the whole year. In winter it keeps in its neſt, and makes its appearance on the return of the warm ſeaſon.

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Virginianus; Virginian Squirrel. The body is a mixed dirty-white and black; the fur is coarſe. It is a native of Virginia, and is about the ſize of the S. cinereus. The throat, inſides of the legs, and thighs, are black; the tail is ſhort, dull, and yellow.

Persicus; Perſian Squirrel. The ears are plain; the body dark, ſides white, belly yellow; the tail is mixed with black and aſh, with a white ring. It inhabits the higher mountains of Perſia. It reſembles the S. vulgaris, but does not vary in colour. It is an inhabitant of the mountainous parts of Perſia.

Anomalus; Georgian Squirrel. Ears plain, rounded; body above yellow, mixed with brown, beneath it is dark tawny; the tail is the ſame as the upper parts. It is a native of Georgia in Aſia. Its mouth is white; the noſe is black at the tip; the cheeks are yellow; whiſkers and orbits brown; the ears are flame-coloured, and within whitiſh.

Bicolor; Javan Squirrel. Ears plain and acute; the body above is black, beneath tawny; the thumb-claw of the fore-feet is large and round. It is found at Java, and is about a foot long.

Erythræus; Ruddy Squirrel. Ears ſlightly bearded at the tip; the body above is mixed yellow and brown, beneath red, mixed with tawny; tail the ſame, with a longitudinal dark ſtripe. It inhabits India, is larger than the S. vulgaris; a large warty protuberance inſtead of the thumb.

Macrourus; Ceylon Squirrel. The tail is grey, and twice as long as the body. It is a native of Ceylon, and is thrice as large as the S. vulgaris.

Maximus; Great Squirrel. This is the largeſt among all the known ſpecies of ſquirrels, it being the ſize of the common cat. It is a native of India, and was firſt deſcribed by M. Sonnerat, who ſays it is found in the Malabar country, where it feeds on fruits, and is particularly fond of the milk of the cocoa-nut, which it pierces when it is ripe, in order to obtain the liquor. The fur on the whole animal is long and full; the top of the head, ears, back, and ſides, are ferruginous; and a ſmall band of a ſimilar colour commences beneath each ear, paſſing along the neck towards the ſides. This animal is ſaid to be eaſily tamed, and is called about the coaſts of Malabar by the name of the great wood-rat.

Abyssinicus; Abyſſinian Squirrel. Body above ruſty-black, beneath cinereous; tail about eighteen inches long. It is, as its ſpecific name imports, a native of Abyſſinia, and has been thought to be only a variety of the maximus. It is very good tempered and ſportive.

Indicus; Bombay Squirrel. Ears tufted; body above dull purple, beneath yellow; tail orange at the tip. It is ſixteen inches long, and is a native of Bombay.

Flavus; Fair Squirrel. Ears plain, roundiſh; body pale yellow; tail round. It inhabits near Carthagena, in America. It is a very ſmall animal; the hair is white at the tips; the fore-thumb conſiſts of only a ſmall nail.

Palmarum; Palm Squirrel. Body greyiſh, with three yellowiſh ſtripes; tail annulate, with whitiſh and black. This is an inhabitant of the hotter parts of Aſia and Africa. It feeds on cocoa-nuts, and is extremely fond of the wine made from the palm-tree. It is not more than three inches long; the tail is erect, not ſhadowing the body; the ears are ſhort, broad, hairy, roundiſh.

Getulus; Barbary Squirrel. The body of this animal is brown, with four whitiſh longitudinal ſtripes. It inhabits Barbary, and is about five inches long.

Badjing; Plantane Squirrel. The body is of a pale cheſnut colour, with a yellow ſtripe along the ſides. It is a native of Java, and is very ſhy.

Striatus; Striped Squirrel. Body is yellowiſh, with five longitudinal brown ſtripes of a blackiſh colour. This is a native of the colder regions of Aſia and North America, and it has been found, but not very frequently, in ſome parts of Europe. It differs from the major part of the ſquirrel tribe in its manner of life, which rather reſembles that of the dormouſe. It reſembles ſome of the mouſe tribe in this, that it is provided with cheek-pouches for the temporary reception of food, a peculiarity not to be found in any other ſpecies of ſquirrel. Its general length is not ſix inches, and its tail is about the ſame. On the upper parts its colour is a reddiſh-brown, and on the under white; down the ridge of the back runs a black ſtreak; and on each ſide the body are two others; the included ſpace between each being of a pale yellow tinge; the tail is marked with circular ſpaces, like that of a mouſe, but the fur ſpreads ſlightly on the ſides, as in other ſpecies. Theſe animals are extremely common in Siberia, inhabiting the maple and birch woods of that country, and generally forming their neſts near the root of ſome tree. They never aſcend trees in the manner of other ſquirrels, unleſs ſuddenly ſurpriſed or purſued, when they will climb with great expedition, and conceal themſelves among the branches. They collect their ſtores during the autumnal ſeaſon, and on the ſetting in of the winter conceal themſelves in their burrows, the entrances of which they ſtop, and paſs the greateſt part of the cold weather in ſleep, and in feeding on their collected ſtores; but if, by the great length of the winter, their proviſions happen to fail, they then ſally out in queſt of freſh ſupplies, and will occaſionally make their way into granaries, and even into houſes. They are very choice in their food, always preferring the ſuperior grain, as wheat to rye or barley. They are very wild, and not eaſily reconciled to a ſtate of captivity, continuing extremely timid, and manifeſting no ſymptoms of attachment to their owners. They are caught merely on account of their ſkins, which are highly eſteemed by the Chineſe. It has been doubted, whether thoſe found in America be really of the ſame ſpecies with the European and Aſiatic kind.

ÆSTUANS; Braſilian Squirrel. Body grey above, beneath yellow; a white ſtripe along the belly; the tail is round, annulate, black, and yellow. A variety is deſcribed, as having a body mixed duſky and yellow; the ſides marked with white ſtripes; the tail is black. It is a native of Braſil and Guiana. It is eight or nine inches long, and the tail is ſtill longer; the ears are roundiſh and plain; the fur is ſoft.

DSCHINSCHIOUS; Carnatic Squirrel. Body brick-duſt colour; lateral ſtripes and orbits white; the tail is black. It inhabits the Indian Carnatic, and is larger than the S. vulgaris.

VARIEGATUS; Varied Squirrel. Body above variegated with black, white, and brown; belly yellow. It is a native of New Spain. Burrows and collects ſtores of grain under the roots of trees, and is twice as large as the S. vulgaris. Of this ſpecies the ears are ſhort, plain, white; the mouth is alſo white; the head is orange-colour, mixed with the other colours; the whiſkers are long and black; and the claws are black.

DEGUS; Chileſe Squirrel. Body is of a duſky yellow, with a black line on the ſhoulders. It inhabits, as its trivial name imports, Chili, in large ſocieties. Burrows and lays up ſtores of fruits and roots for winter proviſion. It does not become torpid. The fleſh is ſometimes eaten by the natives. It is larger than the black rat.

MEXICANUS; Mexican Squirrel. The body of this is of a browniſh-aſh, with from five to ſeven whitiſh longitudinal ſtripes. This animal is known only from the figures and deſcription of Seba. It is much ſmaller than the vulgaris, and is of a mouſe-colour, with ſeven white lines or ſtreaks on the back, extending to ſome diſtance down the tail. The female has only five ſtreaks. It inhabits New Spain. There is a variety of this ſpecies, in which the body is uniform in colour: the ſcrotum is large and pendulous.

BANCROFTI; Guiana Squirrel. Body above is of a pale yellowiſh-brown; the ſides and belly are white; the tail is long, hairy, and ſpotted. It is a native of Guiana.

GUAJANENSIS; Cayenne Squirrel. Body reddiſh, and very ſmall. It inhabits Cayenne; lives ſolitary on trees; feeds on ſeeds; it is naturally very fierce, but may be tamed; it brings forth two young once a year; it is the ſize of a rat.

MADAGASCARENSIS; Madagaſcar Squirrel. Middle toe of the fore-foot naked, very long; thumb-nail of the hind-feet rounded. This ſpecies is found on the eaſtern ſide of the iſland of Madagaſcar; it lives under ground, is ſlothful, timid, ſlow; it feeds on worms, which it extracts, by means of its claws, from the hollows of trees.

CAPENSIS; Cape Squirrel. The body above is of a pale ruſty colour, mixed with black; it has a white line from the ſhoulder down each ſide; the tail is black in the middle, the ſides are hoary; the ears are ſcarcely viſible. This ſpecies inhabits the northern mountains beyond the Cape of Good Hope; it lives in burrows; never climbs; feeds on bulbous roots, and is very tame.

B. *Containing Squirrels with a flying Membrane.*

Species.

VOLUCELLA; Virginian flying Squirrel. The membrane is of a moderate ſize; the tail is long and hairy. This ſpecies is much ſmaller than the volans, from which it differs in colour, being of an elegant brown, or ſub-ferruginous mouſe-colour above, and yellowiſh-white beneath; the edges of the flying membrane, as it is called, are of a darker or blacker tinge than the reſt of the fur, contraſting with the white border of the under part; a few duſky undulations are found about the back and ſhoulders; the tail is of a flattened ſhape, or with the hair ſpreading towards each ſide, and the extremity ſomewhat ſharpened; the eyes are large, and the ears rather ſhort, almoſt naked, and ſlightly rounded. It is not more than five inches long to the tail, and the tail itſelf meaſures four inches. It is a native of the temperate parts of North America, and has been found alſo in ſome of the ſouthern parts of the American continent. It is an animal of great beauty, and is frequently kept in a ſtate of captivity, being readily tamed, and ſhewing a conſiderable degree of attachment to its poſſeſſor. It is naturally of a gregarious diſpoſition, and may be ſeen flying, it is ſaid, to the number of ten or twelve together, from tree to tree. It is chiefly a nocturnal animal, lying concealed during the day, and commencing its activity in the evening. It prepares its neſt in the hollow of trees, with leaves, moſs, &c.; ſeveral of them will inhabit the ſame neſt. Theſe animals reſide conſtantly on the upper parts of trees, and never willingly quit them for the ground. They are capable of ſwimming, in caſe of neceſſity, in the ſame manner as other quadrupeds, and after leaving the water, can exert their power of flight as readily as before. They produce three or four young at a time. A variety has its membrane including the chin and ears; the body above is reddiſh; beneath of a yellowiſh-aſh colour. It is a native of Virginia.

HUDSONIUS. The membrane of this does not include the fore-legs; the body above is reddiſh-brown; beneath it is of a yellowiſh-white; the tail is flat and hairy. It is found in North America, about Hudſon's bay.

VOLANS; Lapland flying Squirrel. This has a large membrane, extending to the baſe of the fore-feet; the tail is rounded at the hairy end. This is the European flying ſquirrel of Pennant, and is the only one of the kind that has been diſcovered belonging to this quarter of the globe; and this is extremely rare, being found chiefly in the more northernly regions, as in Finland, Lapland, &c. It alſo occurs in ſome diſtricts of Poland. It is more common in many parts of Aſia, and abounds chiefly in the birch and pine woods of Siberia. It has, by ſome authors, been confounded with the S. volucella, but is a totally diſtinct ſpecies. On the upper parts it is an elegant pale or whitiſh-grey, and on the under parts milk-white. It is not ſo large as the S. vulgaris, is thickly furred, of a ſlightly flattened form, and rounded at the extremity. Previouſly to the obſervations of Dr. Pallas, little more was known of this animal than its general form and manner of flight, or rather of ſpringing, which is performed by means of an expanſile furry membrane reaching from the fore-feet to the hind. For the better management of this part, the thumb of the fore-feet is ſtretched out to a conſiderable length within the membrane, ſo as to appear in the ſkeleton like a long bony proceſs on each of the fore-feet. The flying ſquirrel generally reſides in the hollows of trees towards the upper parts, and it prepares its neſt of the fineſt moſſes. It is a ſolitary animal, and is ſeen in pairs only during the breeding ſeaſon. It rarely makes its appearance by day, emerging only at the commencement of twilight, when it may be ſeen climbing about the trees, and darting with great velocity from one to the other. It feeds chiefly on the young ſhoots, buds, and catkins of the birch, as well as on thoſe of the pine.

In winter it remains in its neſt, coming out occaſionally in mild weather; but it does not become torpid during that ſeaſon. This animal is ſaid to ſpring to the diſtance of full twenty fathoms, and by this motion to convey itſelf from the top of one tree to the middle of another, to which it directs its flight, which is always with a declination. It ſeldom deſcends to the ſurface, and, when taken and placed on the ground, it runs or ſprings aukwardly, with its tail elevated, and as ſoon as it gains a tree, inſtantly begins to climb with great activity, ſometimes elevating, and ſometimes depreſſing the tail. The young are produced about the beginning or middle of May; they are at firſt blind, and almoſt entirely void of hair; and the parent foſters them by covering them with her flying membrane, leaving her neſt only at the approach of evening, and carefully concealing the young with the moſs of the neſt. The young begin to acquire their fur when about ſix days old, but they continue blind for the ſpace of about thirteen days. Theſe animals bear confinement with great difficulty, and for want of the proper food are rarely preſerved any great length of time. In their manner of ſitting and feeding, as well as in the action of waſhing their face with their paws, they reſemble the common ſquirrel. Their voice reſembles that of the mouſe. The fur of this ſpecies, though ſoft and beautiful, is not much eſteemed, on account of the ſlightneſs of the ſkin, and its want of durability.

Sagitta; Javan flying Squirrel. The body of this is ruſty brown above, beneath it is paler; the tail is much flattened and truncate. It is found chiefly in Java.

Petaurista. The body in this ſpecies is of a deep cheſnut, beneath it is pale ruſty; or above black, beneath hoary; the tail is longer than the body, very hairy, round, blackiſh, ruſty in the middle. It inhabits the iſlands in the Indian ocean, and is about eighteen inches long. The head is rounded; whiſkers and claws black; it has ſix pectoral and abdominal teats; the pupils, like thoſe of the cat, are long and narrow, and adapted to climbing animals.

Australis; Southern flying Squirrel. It inhabits New South Wales, and it is the largeſt and moſt elegant of the tribe.

Norfolcensis. Body above dark grey, beneath white, a duſky black dorſal line from the noſe to the tail; the ears are ſhort, tail long and buſhy. It inhabits Norfolk iſland, and is nine or ten inches long.

SCKABAD, in *Geography*, a town of Perſia, in the province of Khoraſan; 288 miles N. of Herat.

SCKAT, a town of Auſtrian Poland, in Galicia; 36 miles S.S.W. of Halicz.

SCKOZOW, or Skalschau, a town of Sileſia, in the principality of Teſchen; 6 miles N.E. of Teſchen. N. lat. 49° 48′. E. long. 18° 43′.

SCLAFANI, a town of Sicily, in the valley of Mazara; 30 miles S.E. of Palermo.

SCLAREA, or Scarlea, in *Botany*, a word whoſe origin or meaning we cannot trace; ſee Salvia *Sclarea*; and in the preceding line read "there are ſeveral Cape ſpecies beſides."

SCLAVI, or Slavi, in *Ancient Geography*, a wild and wandering people of obſcure origin, but of very extenſive ſpread through the northern nations of Europe and part of Aſia. They were comprized by the Greeks and Romans under the comprehenſive and indefinite denomination of Scythians and Sarmatians. Poland, Pruſſia, Lithuania, and the ſouthern parts of Ruſſia, were probably the ancient ſeat of the Slavi. Hence they diffuſed themſelves to Dacia, to Germany, and to the countries lying beyond the Danube. The unqueſtionable evidence of language, ſays Mr. Gibbon, atteſts the deſcent of the Bulgarians, (ſee that article,) from the original ſtock of the Sclavonians, or more properly Slavonian race; and the kindred bands of Servians, Boſnians, Raſcians, Croatians, Walachians, &c. followed either the ſtandard or the example of the leading tribe. From the Euxine to the Adriatic, in the ſtate of captives, or ſubjects, or allies, or enemies, of the Greek empire, they overſpread the land. Prætorius and Jordan deduce the name of theſe people from the term "Slava," denoting *praiſe* or *glory*; whilſt others derive the word from *ſlave*, referring to the condition of the Sclavonians, when they were oppreſſed and abuſed by their conquerors, the Venetians. Thus degrading, ſays Gibbon, the national appellation of the Slaves, either by chance or motive, from the ſignification of glory to that of ſervitude. This converſion, he adds, of a national into an appellative name, appears to have ariſen in the 8th century, in the Oriental France, where the princes and biſhops were rich in Sclavonian captives, not of the Bohemian, (as Jordan exclaims,) but of the Sorabian race. From thence the word was extended to general uſe in the modern languages, and even of the laſt Byzantines. The confuſion of the Σεϱβλοι, or Servians, with the Latin *Servi*, was ſtill more fortunate and familiar. It was in the year 495, when the Heruli, being routed by the Longobards, marched through the territories of the Sclavi, and on occaſion of this event, that this nation is mentioned in hiſtory under that name. The name Sclavi, indeed, appears in the Armenian hiſtorian Moſes of Chorene, who is commonly thought to have lived in the middle of the 5th century, and in the epitomiſer of Strabo; probably alſo in Ptolemy; but the paſſages of theſe hiſtorians, that relate to the ſubject, deſerve (ſays Schlœtzer, cited by Mr. Tooke,) a more accurate inveſtigation. Procopius and Jornandes, two contemporary hiſtorians of the 6th century, are the firſt by whom they are diſtinctly named. At an early period of the Chriſtian era, the Vandals, being ſtraitened for room in their own country, took their route eaſtward, and entered the country lying between the Boſphorus Cimmerius and the Tanais, inhabited at the time by the Sclavi, whom they drove out, and ſeizing on their country, aſſumed the name of the ancient inhabitants, calling themſelves Sclavi. Some of theſe, ſeveral ages after, in the reign of Mauritius, which began in 586, ſettled in Dalmatia and Illyrium, which from them were called Sclavonia. It was in the age of Juſtinian I., about the year 527, that the Slavi on the Danube began their attack on the Roman empire; but they ſoon returned to their ſeats on the northern ſide of the Danube; and did not begin to ſettle on the ſouthern ſide of the river until about the year 602. A complete hiſtory of the Danubian Slavi, from the year 495 to 1222, is given by Mr. Stritter of Moſcow, from the Byzantine writers, in his celebrated work entitled "Memoriæ populorum, olim ad Danubium, &c. &c." See our two next articles.

SCLAVONIA, in *Geography*, a country of Europe, bounded on the N. by the rivers Drave and Danube, which ſeparate it from Hungary; on the N.E. by the river Save, which divides it from the provinces of Servia and Boſnia on the S.W.; and by Stiria and Croatia on the W.; about 150 miles long, and from 25 to 45 broad. This is a fine, level, fertile country, where it is cultivated; but having been for many years a frontier province againſt Turkey, and ſubject to the ravages of the Chriſtians as well as the Turkiſh armies, it has produced but little corn or wine. The eaſtern diviſion of the country is inhabited by the Raſcians; and the natives in general are of a good ſtature, a brave hardy race, ſoldiers from their infancy; their country having been long and often the ſeat of war. The ancient Sclavonia, as we have already obſerved, (ſee Sclavi,) contained many large countries; or, at leaſt, the Sclavi or Sclavonians over-ran many extenſive territories, and ſerved to increaſe their population. Sclavonia derived its name from the Sclavi, who took poſſeſſion of it in the reign of Juſtinian. The Venetians conquered it, and reduced the natives to a very degraded and ſervile ſtate. The Hungarians and Venetians poſſeſſed this country alternately. The king of Hungary was ſovereign of it, when Solyman the Magnificent invaded and ſubdued it in 1540; and the Turks continued in poſſeſſion of it until the year 1687, ſoon after which they loſt this and all the territories which the Auſtrians poſſeſs N. of the Save and Danube.

SCLAVONIANS, or Slavonians, in *Ancient Hiſtory*, a numerous people, called alſo *Sclavi* or *Slavi*, who migrated from the northern parts of Aſia, and eſtabliſhed many colonies in different countries, or rather blended themſelves with the original inhabitants. The Slavonian ſtock is ſaid to be one of the moſt remarkable and moſt widely extended in the world. Next to the Arabians, who formerly prevailed from Malacca to Liſbon, there are no people on the globe who have diffuſed their language, their dominion, and their colonies, to ſo ſurpriſing an extent. From the ſhores of the Adriatic, northwards as far as the coaſt of the Frozen ocean, and from the ſhores of the Baltic through the whole length of Europe and Aſia, as far as America and to the neighbourhood of Japan, we every where meet with Slavonic nations, either governing or governed. Of their ſuppoſed origin, which is dark and doubtful, becauſe it is very ancient, ſee Sclavi and Scythia. Towards the middle of the fourth century the Sclavonians, which before that time had over-run the half of Europe and Aſia, were ſubdued by Ermanarik or Hermanric, whoſe dominions extended from the Baltic to the Euxine, and incorporated with the Oſtrogoths into one government. Soon afterwards, both the dominant Oſtrogoths, and the ſervile Sclavonians, were ſubject to the victorious Huns. In the courſe of the ſucceeding century, when the diſturbers of the world were either exterminated or driven to the farther ſide of the Danube, the Sclavonians began to ſhew themſelves in Dacia, preſſed between the Ungres and the Gepidæ, and occupied a part of the northern ſhore of the Danube. Here they blended themſelves with the barbarians who menaced from the north the downfall of the declining Roman empire; hence they plundered the Roman provinces, commencing their attack in the time of Juſtinian I. (ſee Sclavi): and hence they ruſhed like a torrent on the country of the Gepidæ, who had been almoſt entirely extirpated by the Longobards and Avari. The Avari arrogated to themſelves a kind of ſovereignty over the various Sclavonian tribes, and occaſionally extorted from them a tribute; but theſe people were at length ſwallowed up by the Bulgarians, who extended themſelves over all Dacia. Forced by their oppreſſions, the Dacian Sclavi for the moſt part abandoned their dwellings, and retreated (probably about the middle of the ſeventh century) from the Danube to the North. Some tribes withdrew to Poland, others to Ruſſia, and ſome of them remained on the Danube. In this manner were the countries juſt mentioned peopled by Slavonian colonies; who, continually ſpreading further and further, and founding governments in every place, occaſioned the moſt ſignal revolutions in the north of Europe. All the branches of the grand Slavonian ſtock, who formed peculiar ſtates, may be ranged by their preſent condition in ſeven claſſes, *viz.* Ruſſian, Poliſh, Bohemian, German, Illyrian, Hungarian, and Turkiſh Sclavonians. In every age the ſame race of Sclavonians appears to have maintained the poſſeſſion of the ſame countries. Their numerous tribes, however diſtant or adverſe, uſed one common language, and have been known by the reſemblance of their form, which deviated from the ſwarthy Tartar, and approached without attaining the lofty ſtature and fair complexion of the German. Four thouſand ſix hundred villages, according to the ſtatement of Mr. Gibbon, were ſcattered over the provinces of Ruſſia and Poland, and their huts were haſtily built of rough timber, in a country deficient both in ſtone and iron; and ſituated in the midſt of foreſts, on the banks of rivers, or at the edges of moraſſes. The fertility of the ſoil, rather than the labour of the natives, ſupplied the ruſtic plenty of the Sclavonians. Their ſheep and horned cattle were large and numerous, and the fields which they ſowed with millet and panic, afforded, in the place of bread, a coarſe and leſs nutritive food. The inceſſant rapine of their neighbours compelled them to bury their treaſure in the earth; but on the appearance of a ſtranger, it was freely imparted by a people, whoſe unfavourable character is qualified by the epithets of chaſte, patient, and hoſpitable. As their ſupreme god, they adored an inviſible maſter of the thunder. The rivers and nymphs obtained their ſubordinate honours, and the popular worſhip was expreſſed in vows and ſacrifices. The Sclavonians diſdained to obey a deſpot, a prince, or even a magiſtrate; but their limited experience, and headſtrong paſſions, would not allow their forming a ſyſtem of equal law or of general defence. Some voluntary reſpect was paid to age and valour; but each tribe or village exiſted as a ſeparate republic, and all muſt be perſuaded where none could be compelled. They fought on foot, almoſt naked, and, except an unwieldy ſhield, without any defenſive armour. Their weapons of offence were a bow, a quiver of ſmall poiſoned arrows, and a long rope, which they dextrouſly threw from a diſtance, and entangled their enemy in a running nooſe. In the field, the Sclavonian infantry was dangerous by their ſpeed, agility, and hardineſs: they ſwam, they dived, they remained under water, drawing their breath through a hollow cane; and a river or lake was often the ſcene of their unſuſpected ambuſcade. But theſe were the achievements of ſpies or ſtragglers; the military art was unknown to the Sclavonians; their name was obſcure, and their conqueſts were inglorious. For the name and nation, the ſituation and manners, of the Sclavonians, we refer to Procopius, Goth. l. ii. c. 26. l. iii. c. 14. The preciſe boundaries of the Sclavonians, and alſo of the Bulgarians, who were people of the ſame origin, cannot be preciſely aſcertained; nor do the people themſelves ſeem to have been reſtrained within any definite and fixed limits. Their importance depended on their vicinity to the Roman empire: and in the time of Juſtinian, the level country of Moldavia and Walachia was occupied by a Sclavonian tribe, denominated Antes, whence Anticus is one of the titles of Juſtinian and of his ſucceſſors. Againſt the Antes he erected the fortifications of the Lower Danube; and laboured to ſecure the alliance of a people ſeated in the direct channel of northern inundation, an interval of 200 miles between the mountains of Tranſylvania and the Euxine ſea. But the Antes wanted power and inclination to ſtem the fury of the torrent; and the light-armed Sclavonians, from an hundred tribes, purſued with almoſt equal ſpeed the footſteps of the Bulgarian horſe. The payment of one piece of gold for each ſoldier procured a ſafe and eaſy retreat through the country of the Gepidæ, who commanded the paſſage of the Upper Danube. Three thouſand Sclavonians, who divided themſelves into two bands, paſſed the Danube and the Hebrus, vanquiſhed the Roman generals who dared to oppoſe their progreſs, and plundered with impunity the cities of Illyricum and Thrace. But whatever praiſe the boldneſs of the Sclavonians may deſerve, it is ſullied by the wanton and deliberate cruelty which they are accuſed of exerciſing on their priſoners. Without diſtinction of rank, age, or ſex, the captives were impaled or flayed alive, or ſuſpended between four poſts, and beaten with clubs till they expired, or incloſed in ſome ſpacious building, and left to periſh in the flames, with the ſpoil and cattle which impeded the march of theſe ſavage victors. Such is, as we truſt, the exaggerated relation of the cruelty of theſe people given by Procopius; but for their mild and liberal behaviour to their priſoners, we may appeal to the ſomewhat more recent authority of the emperor Maurice. (Stratagemata, l. ii. c. 5.) Perhaps, ſays Mr. Gibbon, a more impartial narrative than that of Procopius would reduce the number, and qualify the nature, of theſe horrid acts; and they might ſometimes be excuſed by the cruel laws of retaliation. In the ſiege of Topirus, ſituated near Philippi in Thrace, or Macedonia, oppoſite to the iſle of Thaſos, whoſe obſtinate defence had enraged the Sclavonians, they maſſacred 15,000 males; but they ſpared the women and children: the moſt valuable captives were always reſerved for labour or ranſom; the ſervitude was not rigorous, and the terms of their deliverance were ſpeedy and moderate. The Sclavonians and Finns (ſee FINNS) were the aborigines of Ruſſia. (See RUSSIA.) Gibbon's Hiſt. Decl. and Fall Rom. Emp. vols. vii. and x. Tooke's Ruſſian Emp. vol. i.

SCLAVONIC, or SLAVONIC *Language*, the language of the Sclavi, an ancient people of Scythia Europæa, who, about the year 518, quitted their native country, ravaged Greece, and eſtabliſhed the kingdoms of Poland and Moravia, and at laſt ſettled in Illyria, which thence took the name of *Sclavonia;* which ſee.

The numerous tribes who ſpoke this language preſerved their ancient name of Venedi, long after their invaſion of Germany in the fifth or ſixth century, though they were alſo called Slavi or Sclavi. Their ſucceſſors enabled them to reach the Saxons and Franks, but their conqueſts were terminated by the oppoſition of Charlemagne, and their inceſſant civil feuds. See SCLAVI and SCLAVONIANS.

The Sclavonic is held, after the Arabic, the moſt extenſive language in the world; it is ſpoken from the Adriatic to the North ſea, and from the Caſpian to the Baltic, by a great variety of people, who are all the deſcendants of the ancient Sclavi, *viz.* the Poles, Muſcovites, Bulgarians, Carinthians, Bohemians, Hungarians, Pruſſians, Swabians, &c. each of whom, however, have their particular dialect, only the Sclavonic is the common mother of their ſeveral languages, *viz.* the Poliſh, Ruſſian, Hungarian, &c.

The Sclavonic is one of the great ſtocks, of which the languages of the North and weſtern regions of Europe ſeem to be ramifications; the other two being the Celtic and the Gothic. The preſent Ruſſian is thought to be the moſt faithful ſpecimen of the original Sclavonic, which prevailed in thoſe parts of Europe where the ancients placed the Sarmatæ. See SARMATIANS.

By a Latin chronicle of the Sclavi, compoſed by Helmond, a prieſt of Boſow, and Arnold, abbot of Lubec, and corrected by M. Leibnitz, it appears that the Sclavi anciently inhabited the coaſts of the Baltic ſea, and were divided into the eaſtern and weſtern; in the latter of which were the Ruſſians, Poles, Bohemians, &c. and in the former the Vandals.

Dom. Maur. Orbini Rauſer, abbot of the order of Malta, in an Italian hiſtory of the Sclavi, intitled "Il Regno de gli Sclavi," printed in 1601, will have them to be originally of Finland, in Scandinavia. Laur. Pribero, a Dalmatian, in an expreſs diſcourſe on the origin of the Sclavi, maintains them to be originally of Thrace, and the ſame with the Thracians, the poſterity of Thyras, who was the ſeventh ſon of Japhet. Theod. Polycarpowitz, in a Greek, Latin, and Sclavonic dictionary, printed at Moſcow in 1704, obſerves, that the word *Sclava*, whence *Sclavonic* is formed, ſignifies in their language *glory*.

SCLEINS, in *Geography*, a river of Auſtria, which runs into the Danube, oppoſite Tulln.

SCLERANTHUS, in *Botany*, derived from σκληρος, *hard*, and ανθος, *a flower*, on account of the dry and juiceleſs texture of its calyx.—Linn. Gen. 224. Schreb. 302. Willd. Sp. Pl. v. 2. 660. Mart. Mill. Dict. v. 4. Sm. Fl. Brit. 457. Prodr. Fl. Græc. Sibth. v. 1. 278. Ait. Hort. Kew. v. 3. 73. Juſſ. 314. Purſh v. 1. 281. Lamarck Illuſtr. t. 374. Gærtn. t. 126. (Knawel; Dill. Gen. 94. t. 3.)—Claſs and order, *Decandria Digynia*. Nat. Ord. *Caryophyllei*, Linn. *Portulaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, tubular, contracted at the neck, permanent, cloven half way down into five, acute ſegments. *Cor.* none. *Stam.* Filaments ten, awl-ſhaped, erect, very ſmall, ſtanding on the calyx; anthers roundiſh. *Piſt.* Germen ſuperior, roundiſh; ſtyles two, erect, capillary, the length of the ſtamens; ſtigmas ſimple. *Peric.* none. *Seeds* generally two, ovate, encloſed in the hardened tube of the calyx.

Eſſ. Ch. Calyx of one leaf, inferior. Corolla none. Seeds two, encloſed in the calyx.

1. S. *annuus*. Annual Knawel. Linn. Sp. Pl. 580. Willd. n. 1. Engl. Bot. t. 351. Fl. Dan. t. 504.—Calyx of the ripe fruit with ſharp ſpreading teeth. Stems ſpreading.—Extremely common throughout Europe, eſpecially in Great Britain, in fallow fields and a ſandy ſoil; flowering about the middle of ſummer.—*Root* annual, fibrous, ſmall. *Stems* numerous, much ſpreading, round, ſomewhat downy, leafy, branched at the upper part, of a brown or reddiſh colour. *Leaves* oppoſite, united and fringed at the baſe, linear, acute, of a graſſy-green, not glaucous nor ſilvery. *Flowers* of the ſame colour, ſeſſile, in terminal, leafy cluſters.—The Swedes and Germans we are informed by Withering, uſe a decoction of this ſpecies to relieve the tooth-ache.

2. S. *perennis*. Perennial Knawel. Linn. Sp. Pl. 580. Willd. n. 2. Engl. Bot. t. 352. Fl. Dan. t. 563.—Calyx of the ripe fruit with obtuſe incurved teeth. Stems proſtrate.—Native of Europe, but by no means ſo common in this country as the laſt. It is found on the drieſt barren heaths of Norfolk and Suffolk, flowering in the autumn.—*Root* perennial, long, fibrous. The whole plant greatly reſembles the former ſpecies in habit, but its *ſtems* are proſtrate. The herbage is glaucous and rather ſhining, when old aſſuming a reddiſh-brown colour. *Leaves* ſometimes downy. Withering truly ſtates that "the Poliſh cochineal (*Coccus polonicus*) is found upon the roots in the ſummer months; hence Camerarius, Bauhin, and other authors have a variety of this ſpecies, under the name of *Polygonum cocciferum*."

3. S. *polycarpus*. Many-fruited Knawel. Linn. Sp. Pl. 581. Willd. n. 3. Polycarpus; Dalech. Hiſt. 444. f. 1. Vermiculata; Column. Ecphr. 294. f. 1.—Calyx of the fruit much ſpreading, ſpinous. Stem rather villous.—Native of France and Italy; found alſo in Greece by Dr. Sibthorp. —*Root* annual. *Stem* branching and procumbent, a little villous and aſh-coloured, as are the *leaves*. *Flowers* terminal, whitiſh. *Calyx* ſlightly membranous. *Anthers* twice as large as in the firſt ſpecies, but the whole plant is conſiderably ſmaller. Lightfoot appears to have been miſtaken when he conſidered this plant as a native of Scotland.

SCLERIA, was ſo named by Bergius, in the Stockholm Tranſactions for 1765, from σκληρος, *hard;* becauſe of the ſtony hardneſs and poliſh of the ſeed, reſembling *Lithoſpermum.*—Schreb. Gen. 626. Willd. Sp. Pl. v. 4. 312. Mart. Mill. Dict. v. 4. Brown Prodr. Nov. Holl. v. 1. 240. Purſh v. 1. 45. Swartz Ind. Occ. v. 1. 86. t. 3. Lamarck Illuſtr. t. 752. Gærtn. t. 2.—Claſs and order, *Monoecia Triandria.* Nat. Ord. *Calamariæ,* Linn. *Cyperoideæ,* Juſſ.

Gen. Ch. *Male and female flowers* in the ſame ſpikelet, or panicle.—*Male ſpikelets* ſolitary, or androgynous. *Cal.* Glume of from two to ſix valves, many-flowered; valves ovate, acute, keeled, concave, beardleſs, permanent. *Cor.* Glumes numerous, oblong, beardleſs, longer and thinner than thoſe of the calyx, ſeparating the ſtamens. *Stam.* Filaments one or three, within each glume of the corolla; anthers linear.

Female ſpikelets ſolitary, either axillary, terminal; or inſerted between the glumes of the male ones.—*Cal.* Glume of from two to four valves, ſingle-flowered; valves ovate, acute, beardleſs, keeled, concave, permanent. *Cor.* Petals none. Nectary a three-lobed ſcale at the baſe of the germen, permanent. *Piſt.* Germen ſuperior, roundiſh, tapering at the baſe; ſtyle thread-ſhaped, the length of the glumes, either undivided or three-cleft; ſtigmas capillary, reflexed. *Peric.* none. *Seed.* Nut nearly globoſe, or oblong, coloured, poliſhed; kernel roundiſh.

Eſſ. Ch. Male, Calyx of ſeveral valves, many-flowered. Corolla a ſingle beardleſs glume, to each flower.

Female, Calyx of ſeveral valves, ſingle-flowered. Nectary a three-lobed ſcale, beneath the germen. Nut coloured, nearly globular.

Obſ. The analogy of the true graſſes induces us to uſe the term nectary, according to the practice of Linnæus in that tribe, for what Gærtner denominates a corolla, and Brown a ſcale. The latter remarks that there is, in moſt ſpecies, a little exterior undivided "*ſcutellum,*" or diſk, which remains along with the ſpikelet, after the *nut,* and *ſcale* at its baſe, are fallen.

Willdenow defines twenty-three ſpecies of *Scleria,* to which Mr. Brown adds five new ones from New Holland. The following will ſerve to illuſtrate the genus.

S. *Flagellum.* Rough Scleria, or Negroes' Scourge. Swartz Ind. Occ. v. 1. 88. Willd. n. 1. (S. Flagellum nigrorum; Berg. in Stockh. Tranſ. for 1765. 144. t. 4. Schœnus lithoſpermus; Linn. Sp. Pl. 65. Carex lithoſperma; Syſt. Nat. ed. 12. v. 2. 618. Cyperus maximus americanus, lithoſpermi ſemine; Moriſ. ſect. 8. t. 11. f. 16. Gramen cyperoides ſylvaticum maximum geniculatum aſperius, ſemine milii ſolis; Sloane Jam. v. 1. 118. t. 77. f. 1.)—Stem with three very rough angles, climbing. Edges and mid-rib of the leaves rough with reverſed prickles. Panicles lateral and terminal, corymboſe, hairy.—Native of woods in the Weſt Indies. The harſh texture, and cutting edges, of the *ſtems* and *leaves,* render this a choice inſtrument for the puniſhment of refractory negroes. Some perſons may perhaps think Providence had planted it in the Weſt Indies on purpoſe; for an Engliſh lady once obſerved to the writer of the preſent article, that the negroes there were exactly in the place of horſes in Europe, and to be treated accordingly. The *leaves* are from one to two feet long, and an inch or more in breadth, flat, with many ribs; their baſe ſheathing, with a very rough keel. *Panicles* twice compound, at firſt erect, then ſpreading; their ſtalks triangular, hairy, moſtly browniſh. *Bracteas* briſtle-ſhaped, triangular, rough, much longer than the flowers. *Seeds* not quite ſo big as hemp-ſeed, white or brown, highly poliſhed, reſembling porcelain.

S. *bracteata.* Briſtly-ſpiked Scleria. Cavan. Ic. v. 5. 34. t. 457. Willd. n. 5.—Leaves rough-edged. Panicles terminal and axillary. Bracteas tapering, many times longer than the female ſpikes. Nut dotted.—Native of places near the ſea, that are frequently overflowed, at Panama, flowering in November and December. The *ſtem* is nearly ſix feet high, triangular. Radical *leaves* a yard long, half an inch broad; rough at the edges and keel; their ſheaths downy. *Bracteas* ſpreading, above an inch long. *Nut* globoſe, its whole ſurface covered with minute excavations.

S. *ſumatrenſis.* Sumatra Scleria. Retz. Obſ. faſc. 5. 19. t. 2. Willd. n. 9.—Stem ſmooth. Leaves rough-edged. Panicle terminal, repeatedly compound, many-flowered. Nut corrugated.—Native of Sumatra. *Stems* tall and ſtout, triangular, leafy. *Leaves* one-third of an inch broad. *Panicle* about ſix inches long. *Bracteas* ſhort. *Seed* very black, tranſverſely wrinkled. *Retzius.*

S. *filiformis.* Slender Scleria. Swartz Ind. Occ. v. 1. 91. Willd. n. 15.—Stem ſimple, ſlender, ſmooth. Leaves awl-ſhaped, ſeſſile. Cluſter nearly ſimple. Bracteas capillary. Nut ſmooth, rather pointed. Native of very dry ſtony places, in Jamaica and Hiſpaniola. The *ſtems* are only one or two feet high, growing in tufts, lax, acutely triangular. *Leaves* linear, keeled, ſeſſile, not ſheathing, minutely ſerrated with cartilaginous teeth, ſmooth. *Cluſters* (rather than *ſpikes*) terminal, with from two to four alternate ſtalks, and thoſe bearing a few whitiſh alternate ſpikelets. Nut oblong or roundiſh, bluntly triangular, white, very hard.

S. *hirtella.* Little Hairy Scleria. Swartz Ind. Occ. v. 1. 93. Willd. n. 18. Purſh n. 4.—Stem ſimple, ſlender, downy as well as the leaves. Spikes cluſtered, naked. Glumes briſtly. Nut ſomewhat elliptical, pointed, ſmooth.—Native of mountainous woods in Jamaica; *Swartz:* of dry woods, on ſlate rocks, in Virginia and Carolina, flowering in June; *Purſh.* The ſmalleſt ſpecies known, ſcarcely a foot high. *Stem* triangular, lax, ſtriated, downy. *Leaves* very narrow, diſtant, hairy, ſlightly ſheathing at the baſe. *Spike* terminal, ſimple, hairy, with awl-ſhaped hairy *bracteas,* a little longer than the flowers.

S. *pauciflora.* Little Wrinkled Scleria. Willd. n. 21. Purſh n. 6. (S. oligantha; Michaux Boreali-Amer. v. 2. 167.)—Stem ſimple, ſlender. Leaves linear, channelled, rough-edged. Tufts few, of very few flowers. Nut globoſe, pointed, with tranſverſe pointed wrinkles.—Found by Michaux in low graſſy places, in the woods of Carolina: by the Rev. Dr. Muhlenberg near Lancaſter in Pennſylvania. *Root* of a few pale fibres. *Stem* hardly a ſpan high, erect, leafy, ſtriated; ſmooth in our ſpecimens; Willdenow deſcribes it rough. *Leaves* very narrow. Tufts of *flowers* three or four, alternate; one of them terminal; each of two or three ſpikelets. *Nut* ſmall, white, ſhining, with copious tranſverſe acute elevations, of a very elegant appearance under a magnifying glaſs.

Scleria, formed of σκληρος, *hard,* a word uſed by medical writers to expreſs a hardneſs of the inner part of the eye-lids.

SCLERIASIS, or Scleroma, in *Surgery,* a hard tumour.

SCLEROCARPUS, in *Botany,* ſo named from σκληρος, *hard,* and καρπος, *fruit,* in alluſion to the hardneſs of the calyx, after flowering, when it encloſes the ripe ſeeds.—Jacq. fil. in Act. Helvet. v. 9. 34. t. 2. f. 1. Murr. in Linn. Syſt. Veg. ed. 14. 783. Schreb. Gen. 575. Willd. Sp. Pl. v. 3. 2261. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 5. 137. Juſſ. 186. Lamarck Illuſtr. t. 701. Gærtn.

v. 2. 428.—Claſs and order, *Syngeneſia Polygamia-fruſtranea.* Nat. Ord. *Compoſitæ diſcoideæ*, Linn. *Corymbiferæ*, Juſſ.

Gen. Ch. *Common Calyx* roundiſh-ovate, furrowed, of ſeveral oblong, thick, keeled, erect, converging ſcales, externally ſtriated and rough, one to each floret, permanent; thoſe of the fertile florets at length hardened, gibbous, concave, embracing the ſeeds. *Cor.* compound, radiated. Florets of the diſk about eight, perfect, tubular, erect, of one petal, funnel-ſhaped, with five teeth, externally hairy; thoſe of the radius very few, from one to four, their limb ligulate, rounded, emarginate, ſpreading. *Stam.* in the perfect florets, filaments five, very ſhort; anthers five, united into a tube, ſhorter than the petal. *Piſt.* in the ligulate florets, germen thread-ſhaped, very long, hairy, without ſtyle or ſtigma, abortive; in the tubular ones, germen half-obovate, obtuſe, compreſſed; ſtyle thread-ſhaped, longer than the petal; ſtigmas two, revolute. *Peric.* none, except the hardened, involute ſcales of the calyx, each cloſely enfolding one ſeed. *Seeds* to the perfect florets only, half-obovate, compreſſed, black, ſhining, obtuſe, without any down, wing or border; acute at the baſe. *Receptacle* naked, very ſmall.

Eſſ. Ch. Receptacle naked. Seeds without down or border, each encloſed in a hardened concave ſcale of the calyx. Florets of the radius roundiſh, very few.

Obſ. We have taken our characters of this genus from profeſſor Jacquin's original deſcription, compared with the plant itſelf. Schreber, like Juſſieu, appears to have been unwilling to conſider the hardened ſcales which enfold the ſeeds, as any thing elſe than belonging to the receptacle, and has therefore given the name of calyx to what ſeems to us floral leaves. He is followed by Willdenow and Aiton, whoſe eſſential generic character will therefore not accord with our's.

1. S. *africanus.* African Sclerocarpus. Willd. n. 1. Ait. n. 1. Jacq. Ic. Rar. t. 176.—Leaves ovate, ſerrated. Native of Guinea. Seeds were ſent to Kew in 1812, by M. Thouin. The plant is annual, requiring heat to raiſe it, and ſome ſhelter afterwards. It has little beauty to procure general attention. The *ſtem* is branched, ſpreading, about two feet high, hiſpid, clothed with alternate, ſtalked, ovate *leaves,* tapering at each end, coarſely ſerrated, rough and hairy on both ſides, an inch and half or two inches long, with the aſpect of many of the Sun-flower tribe. *Flowers* ſolitary, terminal, yellow, inconſpicuous, except for the round florets of their radius, which are but ſmall. *Calyx* tranſverſely rugoſe, hiſpid, ſurrounded with various unequal leaves.

2. S. *gracilis.* Slender Sclerocarpus. — Leaves linear-lanceolate, entire. Flower-ſtalks leafy.—Gathered by Mr. Menzies, on the weſt coaſt of North America. *Root* annual, ſimple, tapering. *Stem* erect, ſimple, leafy, round, purpliſh, hairy, about a foot high. *Leaves* ſcattered, ſeſſile, narrow, obtuſe, an inch or inch and half long, clothed with ſhort rough hairs. *Flower-ſtalks* four or five at the upper part of the ſtem, alternate, diſtant, moſtly ſingle-flowered, clothed with ſeveral ſmall ſcattered leaves, ſcarcely half an inch long. *Flowers* about a quarter the ſize of the laſt. We have not ſeen the *corolla.* The *calyx* of the fruit is pale, hairy, the keel of each ſcale beſet with prominent glandular briſtles. We perceive ſeveral ſcars at the baſe of the calyx, where *floral leaves* appear to have been, but none remain, to enable us to judge of their figure.

3. S. *exiguus.* Small Sclerocarpus.—Leaves linear-lanceolate, entire. Flower-ſtalks naked, thrice the length of the leaves.—Brought by Mr. Menzies from the ſame country as the laſt. An annual plant, three or four inches high, with the habit, and numerous hairy *leaves,* of a *Myoſotis.* At the top of the ſimple *ſtem* are about three ſimple, leafleſs, hairy *ſtalks,* an inch and half long, each bearing one ſmall *flower,* whoſe ſeed-bearing ſcales are very tumid and hiſpid, but about which we perceive no *floral leaves,* nor any traces of ſuch, though the *corolla* is not fallen. We preſume this circumſtance confirms our's and Jacquin's idea of the generic character, and that the ſcales are the real *calyx.*

SCLERODERMA, from σκληρος, *hard*, and δερμα, *ſkin.* —Perſ. Fung. 150.—Claſs and order, *Cryptogamia Fungi.* Nat. Ord. *Fungi*, Linn. Juſſ. *Fungi dermatocarpi*, Perſoon.

Eſſ. Ch. Peridium with a corky, hardiſh, ſomewhat teſſellated coat, burſting irregularly. (The powder is either purpliſh, brown, or ruſty-coloured.)

Perſoon enumerates twelve ſpecies of this genus, one of which is ſubterraneous. We ſhall notice the whole, ſeveral of them being curious, or important.

1. S. *piſtillare.* (Lycoperdon piſtillare; Linn. Mant. 313.)—Saffron-coloured, club-ſhaped, with a twiſted ſtalk. —Found by Koenig in the Eaſt Indies. A ſpan high, the *ſtalk* making about one-third of the whole, and being about one-third of an inch in diameter, of a fibrous ſpiral texture, ovate at the bottom. *Head* four times as thick, erect, ovate-oblong, obtuſe; its ſkin ſaffron-coloured, full of ruſty *powder.* The whole is of the ſame ruſty brown when dried.

2. S. *herculeum.* (Lycoperdon herculeum; "Pallas's Travels, German edition, v. 1. 553.")—Whitiſh, with a drooping head. Stalk ſcaly, with ſtraight fibres. Our imperfect Engliſh edition of Pallas will not enable us to ſay, where he met with this curious fungus. He deſcribes it as often a foot high, externally white; the *ſtalk* gradually ſwelling upward into a drooping, rather obtuſe *head,* as big as the fiſt. When ripe this head diſcharges a tawny browniſh *powder,* by irregular fiſſures.

3. S. *carcinomale.* (Lycoperdon carcinomale; Linn. Suppl. 453. Thunb. de Medicina Africanorum, 5.)—Club-ſhaped. Peridium burſting at the baſe. Stalk cylindrical, with ſtraight fibres.—Native of argillaceous ant-hills at the Cape of Good Hope. The *powder* is black, and is eſteemed good for cancerous ulcers. *Thunberg.*

4. S. *tinctorium.* (Lycoperdioides album tinctorium, radice ampliſſima; Mich. Gen. 219. t. 98. f. 1.)—White. Stalk cellular, branching downwards. Head roundiſh, ſmooth. Powder in large maſſes.—Native of heaths, barren ground, and fallow fields, in many places about Florence, eſpecially ſuch as are rather hilly, in autumn. A ſpan high; the *ſtalk* above an inch, and the head near three inches, in diameter.

5. S. *arrhizum.* (Lycoperdon arrhizon; Scop. Del. Inſub. v. 2. 40. t. 18. Röm. and Uſter. Mag. v. 1. 66. t. 2. f. 1—5.)—Ruſty-coloured, cellular. Cells filled with a ſpongy filamentous ſubſtance. Powder yellow or tawny, in maſſes of various ſizes.—Found by Scopoli near Mozzate, in the north of Italy, in Auguſt. About two inches high, and the head one and a half in diameter; the *ſtalk* about an inch thick. The grains, or maſſes of *powder,* are ſmalleſt in the lower part, and in the upper larger and more tawny.—Albertini and Schweiniz, in their learned and elaborate *Conſpectus Fungorum*, p. 82. t. 1. f. 3, have eſtabliſhed a genus named *Piſolithus,* which is founded on this ſpecies, or one very near it; to which they would alſo refer our *S. tinctorium.* The character of this new genus conſiſts in the numerous partial, or ſeparate *peridia,* within the common one. See *Lycoperdon capſuliferum,* Sowerb. Fung. t. 425.

6. S. *aurantium.* (Lycoperdon aurantium; Linn. Sp. Pl. 1658. Bulliard. Fung. v. 1. 158. t. 270.)—Globoſe, yellow, teſſellated or ſcaly, with a ſhort ſtalk. Head plaited and pierced at the lower part. Native of woods in France, in autumn. The internal ſubſtance, at firſt yellowiſh and fleſhy, changes to a black *powder.* The orifices through which the *powder* eſcapes, appear to be cauſed by inſects, or other accidents, the ſkin being ſo tough, that it ſcarcely burſts ſpontaneouſly. *Bulliard.*

7. S. *citrinum.* (Lycoperdon defoſſum; "Batſch Fung. cent. 2. 126." L. cervinum; Bolt. Fung. v. 3. 116. t. 144.)—Roundiſh, ſtalked, pale yellow, very ſlightly ſcaly.—Found in oak woods, chiefly on the ground, or on old moſſy trunks, in autumn. *Lycoperdon pertuſum,* Sowerb. Fung. t. 412. f. 2, ſeems akin to this, as diſcharging the *powder* by holes that appear to be the work of inſects, but its texture is more flaccid and delicate, and the colour a browniſh-white. Bolton confounds *S. citrinum* with our n. 12.

8. S. *verrucoſum.* (Lycoperdon verrucoſum; Bulliard. Fung. v. 1. 157. t. 24. Vaill. Paris. t. 16. f. 7.)—Nearly globoſe, reddiſh-brown, minutely and regularly ſcaly. Stalk elongated.—Native of woods and dry ſituations in France, in ſummer and autumn. It varies in ſize. The *ſtalk* is nearly as tall as the *head.* Bulliard ſays this fungus is reported to be a deadly poiſon, and that the duſt is very hurtful to the eyes.

9. S. *ſpadiceum.* (Lycoperdon ſpadiceum; Schæff. Fung. v. 4. 129. v. 2. t. 188. Dickſ. Crypt. faſc. 1. 25.)—Cluſtered, irregularly globoſe, ſomewhat dotted, ſmooth, light reddiſh-brown. Root hard, fibrous.—Found in ſummer about the trunks of beeches. *Perſoon.* On heaths in England, but rare. *Dickſon.* Nearly akin to *S. citrinum,* ſo that Perſoon ſuſpects it may be only a variety. About the ſize of a cheſnut, rather depreſſed at the top. The *powder* is collected into irregular ſmall maſſes, of a dark brown, nearly black. *Stalk* variable in length, from near an inch to almoſt nothing, with many ſtrong fibrous radicles.

10. S. *Cepa.* (Lycoperdon cepæ facie; Vaill. Paris. 123. t. 16. f. 5, 6. Tuber ſolidum; With. v. 4. 372, excluding the reference to Schæffer.)—Roundiſh, depreſſed, nearly ſmooth, poliſhed. Stalk ſhort, tapering, with ſcarcely any root.—Found by Vaillant in Auguſt, at Marli, and in the foreſt of Fontainbleau. Dr. Withering met with it under an oak-tree; by the pool, in his own grounds at Edgbaſton, near Birmingham. Very like the laſt, but internally of a blue-black when young, turning ſubſequently brown. The outſide is a little rough in the upper part; its colour a dirty white.

11. S. *polyrrhizum.* (Lycoperdaſtrum rotundum majus leucophæum, pulpâ ſordidè cæruleâ; Mich. Gen. 219. t. 99. f. 1.)—Globoſe, pale, without a ſtalk. Coat ſplitting ſtar-wiſe, into equal ſegments. Root much branched, with many fibres.—Gathered by Micheli in autumn, in barren or fallow fields, and on heaths, in Tuſcany. About three inches diameter, with innumerable denſe roots. *Coat* revolute, in a number of acute ſegments, ſomewhat like the ſtar puff-ball.

12. S. *cervinum.* (Lycoperdon cervinum; Linn. Sp. Pl. 1653. Lycoperdaſtrum tuberoſum arrhizon fulvum, cortice duriore craſſo et granulato, medullâ ex albo purpuraſcente, ſemine nigro craſſiore; Mich. Gen. 220. t. 99. f. 4. Tuber cervinum; With. v. 4. 371.)—Subterraneous, round or oblong, hard, granulated, without ſtalk or root.—Found generally in fir woods, in the earth, juſt below the ſurface. Not rare in Germany and Italy, though leſs frequent in England. Its ſize and ſhape reſemble a cheſnut. The outſide is tawny, minutely granulated; the *coat* hard. Inner ſubſtance whitiſh or purpliſh, with black *ſeeds.*

Lycoperdon ſcabrum, Willd. Prodr. Berolin. 409, is ſuppoſed by Perſoon to be a rather ſmaller, rougher, or more ſcaly variety of this.

SCLEROLÆNA, from σκληρος, *hard,* and χλαινα, *a covering;* becauſe of the indurated calyx, which makes an outer coat to the ſeed, or a ſort of ſpurious pericarp.—Brown Prodr. Nov. Holl. v. 1. 410.—Claſs and order, *Pentandria Digynia,* near *Chenopodium.* Nat. Ord. *Holeraceæ,* Linn. *Atriplices,* Juſſ. *Chenopodeæ,* Decandolle, Brown.

Eſſ. Ch. Calyx of one leaf, five-cleft. Corolla none. Stamens inſerted into the bottom of the calyx. Seed vertically compreſſed, without albumen, with a ſimple ſkin, tunicated, encloſed in the dry hardened calyx. Embryo curved. Radicle ſuperior.

A genus from the ſouth coaſt of New Holland, compoſed of ſmall, uſually hoary, or ſomewhat woolly, *ſhrubs. Leaves* alternate, linear, narrow. *Flowers* axillary, ſolitary or aggregate.

1. S. *paradoxa.*—Flowers capitate. Calyx of the fruit connate; its ſegments tipped with ſpines.

2. S. *biflora.*—Flowers in pairs. Leaves linear, ſemi-cylindrical.

3. S. *uniflora.*—Flowers ſolitary. Leaves linear, ſomewhat club-ſhaped, imbricated.

We preſume the word *foliis* muſt have been accidentally omitted in Mr. Brown's definition of the third ſpecies.

4. S. *divaricata.*—(Aniſacantha divaricata; Brown ibid.)—Flowers four-cleft. Calyx of the fruit with unequal dorſal ſpines. From the ſame country. We preſume to unite the *Aniſacantha* of our learned friend with his *Sclerolæna,* as differing only in the number of the parts of fructification, and in the ſpines of the *calyx* being dorſal, not terminal. The *ſtamens* are three or four. This is a ſmooth little *ſhrub. Leaves* alternate, ſemi-cylindrical. *Flowers* axillary, ſeſſile, without *bracteas.*

SCLEROPHTHALMIA, from σκληρος, *hard,* and οφθαλμος, *the eye,* in *Surgery,* an inflammation of the eye, in which there is an unuſual dryneſs and hardneſs of this organ.

SCLEROSARCOMA, a hard excreſcence on the gums.

SCLEROSIS, a hard tumour.

SCLEROTHAMNUS, in *Botany,* a genus of papilionaceous plants with ſeparate ſtamens, eſtabliſhed by Mr. Brown in addition to thoſe, by the writer of the preſent article, publiſhed in the firſt volume of Sims and Konig's Annals of Botany, and in the ninth volume of the Linnæan Society's Tranſactions. The name is compoſed of σκληρος, *hard,* and θαμνος, *a ſhrub,* expreſſing the habit of the only known ſpecies.—Brown in Ait. Hort. Kew. v. 3. 16.—Claſs and order, *Decandria Monogynia.* Nat. Ord. *Papilionaceæ,* Linn. *Leguminoſæ,* Juſſ.

Eſſ. Ch. Calyx five-cleft, two-lipped, with a pair of appendages at the baſe. Corolla papilionaceous; keel the length of the wings. Germen ſtalked. Style aſcending, thread-ſhaped. Stigma ſimple. Legume turgid, with two ſeeds.

1. S. *microphyllus.* Small-leaved Sclerothamnus.—Obſerved by Mr. Brown, on the ſouth coaſt of New Holland. It was ſent to Kew, in 1803, by Mr. Peter Good, and flowers from April to June, being treated as a greenhouſe ſhrub. We have ſeen no ſpecimens.

SCLEROTICA, in *Anatomy,* from σκληρος, *hard,* the external denſe and firm membrane of the globe of the eye. See Eye.

SCLEROTICS, medicines proper to harden and conſolidate the fleſh, &c. of the parts to which they are applied.

SCLEROTIUM, in *Botany*, a genus of paraſitical fungi, ſo named by Tode, from σκληροτης, *hardneſs* or *rigidity*, in alluſion to its texture.—Tode Fung. faſc. 1. 2. t. 1. Perſ. Fung. 119.—Claſs and order, *Cryptogamia Fungi*. Nat. Ord. *Fungi*, Linn. Juſſ. *Fungi ſarcocarpi*, Perſoon.

Eſſ. Ch. Simple, oblong, variouſly ſhaped, firm; internally ſmooth and uniform; filled with minute ſeeds.

1. S. *crocorum*. Perſ. n. 1. (Tuber paraſiticum; Bulliard Fung. v. 1. 81. t. 456.)—Subterraneous, tuberous, polymorphous, reddiſh, cohering by long fibrous roots.—This grows paraſitically on the roots of the cultivated Saffron, *Crocus ſativus*, in France, and is ſo pernicious as to have acquired the name of *la mort du Saffran*. Duhamel, who has written on the ſubject, in the Memoires de l'Acad. Royale for 1720, has obſerved the ſame fungus, as he believed, on the roots of *Aſparagus officinalis*, and *Sambucus Ebulus*. Fougeroux de Bondaroy has alſo given a paper on this noxious fungus, in the Mem. de l'Acad. for 1782. It is very deſtructive to Saffron, ſoon cauſing the whole bulb to periſh, and ſpreading with great rapidity over a whole field of that valuable crop, if not ſpeedily ſtopped by a trench, fifteen to eighteen inches deep, to cut off the communication between the infected and the ſound plants. The ſmalleſt quantity of earth from an infected field is ſaid to be capable of communicating this plague, even if the ground were not planted with Saffron till twenty years afterwards. Hitherto this deſtructive paraſite has not been heard of but in France. The plants are of an irregular knobbed figure, from half an inch to an inch long, of a light reddiſh-brown, ſcarcely burſting; granular and paler within. Long, branching, red, capillary *roots* are ſent off in all directions, propagating the plant very extenſively and rapidly, by offſets, which attach themſelves to the ſaffron, and multiplying in the ſubſtance of the bulbs, ſoon deſtroy them.

2. S. *fungorum*. Perſ. n. 2. (S. ſubterraneum β; Tode Fung. faſc. 1. 4. t. 1. f. 5, c, d, e.)—Subterraneous, irregularly lobed, pale.—Found on the roots of decaying fungi; frequently undermining that of *Agaricus tuberoſus*, Bull. t. 256. The plants are whitiſh; at firſt the ſize of muſtard-ſeed, but ſubſequently three to ſix lines long, and unequally ſwelling; the internal ſubſtance white.

3. S. *muſcorum*. Perſ. n. 3. (S. ſubterraneum α; Tode Fung. faſc. 1. 3. t. 1. f. 5, a, b.)—Subterraneous, roundiſh, bright yellow, ſomewhat tuberculated.—Found attached to the roots of moſſes in ſummer. Each plant is two or three lines long, at length varying in ſhape, of the ſame golden hue within and without; its ſubſtance rather ſucculent.

4. S. *lacunoſum*. Perſ. Diſp. Meth. Fung. 15. t. 3. f. 7.—Subterraneous, nearly round, channelled, black.—Found by Perſoon in autumn, adhering, like a root, to the baſe of a remarkable *Agaricus*, called by him *racemoſus*. This ſpecies is the ſize of a ſmall pea.

5. S. *durum*. Perſ. in Uſt. Ann. faſc. 11. 31.—Ovate, hard, ſomewhat ſtriated, of a dull black.—Found in autumn and winter on the dried ſtems of umbelliferous, and other large, herbs.—Generally ovate, but often indeterminate in figure, cloſe preſſed to the ſtem on which it grows, and often covered by the cuticle. Its ſubſtance is firm, internally white; and the ſurface is marked with oblong furrows.

6. S. *complanatum*. Tode Fung. faſc. 1. 5. t. 1. f. 9. Perſ. n. 6.—Erect, pale, ſomewhat pear-ſhaped, compreſſed, with a ſhort ſtalk.—Found in winter, adhering to rotten hay or ſtraw in dunghills. When young it is white, and ſcarcely compreſſed. Afterwards it generally becomes inverſely heart-ſhaped, and of a pale dirty hue.

7. S. *radicatum*. Tode Fung. faſc. 1. 5. t. 1. f. 8. Perſ. n. 7.—Obovate, black, with numerous long roots. Found in September, growing on the earth, in moiſt ſhady places. Each *plant* is about the ſize of a pea, nearly globular, half immerſed in the ground, of a compact rather juicy ſubſtance, with a very black ſmooth *ſkin*, finally burſting in the centre. The *roots* are ſimple, numerous, longer than the fungus itſelf.

8. S. *braſſicæ*. Perſ. Diſp. Meth. Fung. 15.—Oblong, depreſſed, black; dotted with black internally.—Found in winter among rotten cabbage-leaves, laid by in cellars. Two or three lines broad, flattened, thin.

9. S. *varium*. Perſ. n. 9. ("Elvela braſſicæ; Hoffm. Veg. Crypt. faſc. 2. 18. t. 5. f. 2, excluding ſome of the ſynonyms." *Perſ.*)—Roundiſh, or oblong, ſomewhat lobed, rugoſe, variable. White when young; then browniſh, and black.—Upon the ſtems, and ribs of the leaves, of cabbages in winter.—This conſiſts of little tuberous bodies, either ſolitary or from three to ſix crowded together, at firſt appearing in the form of minute ſnow-white globules, then becoming oblong, or kidney-ſhaped, obſcurely lobed, various in ſize, changing to brown and black.

10. S. *Semen*. Tode Fung. faſc. 1. 4. t. 1. f. 6. Perſ. n. 10. (Sphæria braſſicæ; Dickſ. Crypt. faſc. 1. 23. Bolt. Fung. t. 119. f. 2.)—Cluſtered, ſpherical, blackiſh-brown, finally wrinkled; internally white.—On the rotten cabbages and parſneps; as well as, according to Perſoon, on decaying ſtems of potatoes, when heaped up in the fields, in autumn and ſpring. About one or two lines in diameter, rather ſoft, and white, when young; becoming wrinkled by drying. This fungus has been taken for the *ſeed* of cabbages, a truly wonderful mode of propagation, worthy the conſideration of thoſe who want an argument againſt the ſexes of plants, and as good as many that have been advanced!

11. S. *pubeſcens*. Perſ. n. 11.—Cluſtered, globoſe, pale, villous at the baſe.—Among the gills of a rotten Agaric, late in autumn. About a line broad, ſometimes ſlightly depreſſed in the centre.

12. S. *Eryſiphe*. Perſ. Obſ. Mycolog. faſc. 1. 13. (Mucor Eryſiphe; Linn. Sp. Pl. 1656.)—Granules aggregate, browniſh-black, attached by white down to the leaves of plants.—This is found on the leaves of various plants in autumn, which thence appear to be ſprinkled with a white mealy powder, and aſſume a languid condition; except only hazel-leaves, on whoſe backs it ſometimes occurs, without injuring them. The *fungus* itſelf is very minute, globoſe, at firſt ſmooth and yellowiſh, then brown, finally rugged and nearly black. Some ſpecimens, eſpecially thoſe which grow on the hazel, are hollowed, and ſomewhat villous, at the ſummit, evincing an affinity to the *Pezizæ*.

13. S. *quercinum*. Perſ. Diſp. Meth. Fung. 15.—Nearly hemiſpherical, convex, ſmooth, of a dirty or blackiſh hue, ſcattered over the leaves of plants.—Found on dry fallen oak leaves in ſummer. About a line and a half broad, hardiſh, attached to the leaves by about half its ſurface.

14. S. *populneum*. Perſ. Obſ. Mycol. faſc. 2. 25.—Crowded, partly ſunk in the leaves of plants, roundiſh, or angular and confluent; reddiſh fleſh-coloured; at length black.—Found on the backs of dead leaves of the black poplar, in autumn and winter, and on aſpen leaves in ſpring. It appears in the form of little black warts, covering the leaves, and giving them a rough or ſcaly appearance.

When moiſtened, the dried *fungus* reſumes its original fleſh-coloured hue.

15. S. *purpureum*. Tode Fung. faſc. 1. 2. t. 1. f. 2. Perſ. n. 15.—Scattered, minute, oval, perpendicular, very ſmooth.—Found once only by Mr. Tode, early in March, on a fallen branch of oak, under the cuticle. It was viſible by the help of a magnifier only. The ſurface was very ſmooth, and of a ſomewhat ſhining purple; the ſubſtance hard.

16. S? *ſphæroides*. Perſ. n. 16. — Cluſtered, ſmall, roundiſh, or elongated and angular, flattiſh, black.—On young branches of *Populus tremula*, burſting out of the bark, like a *Sphæria*, one-third or half a line in dimenſions, white internally, tumid and ſlightly fleſhy, ſurrounded with the broken cuticle of the bark; its diſk minutely wrinkled. The inſide being neither hollow, nor filled with jelly, Perſoon could not refer this fungus to *Sphæria*, though he allows that its habit, and mode of growth, are not exactly ſimilar to other ſpecies of *Sclerotium*.

SCLOBODA, in *Geography*, a town of Poland, in the palatinate of Braclaw; 52 miles W. of Braclaw.

SCLOPETOPLAGA, from *ſclopetum*, a gun, and *plaga*, a wound, in *Surgery*, a gun-ſhot wound.

SCNIPS, in *Natural Hiſtory*, a name given by authors to the ſmall ſpecies of gnat, always found about the oak-tree, feeding on the juices of its leaves, which it ſucks by means of its ſharp trunk.

It is ſuppoſed by ſome to be hatched of the ſmall oblong white worm, that inhabits the oak-apples.

SCOBS, a word uſed by ſome authors to expreſs the raſpings of ivory, hartſhorn, or other hard ſubſtances. Some alſo have uſed it to expreſs the ſcoriæ of metals; and ſome as a name for the *cineres clavellati*, or *pot aſhes* uſed in ſoap and glaſs-making.

SCOCHETTO, in *Biography*, an Italian muſician, contemporary and friend of Dante; and not only a poet, but an able muſician, as is concluded from the title of an ancient MS. of a ballatella, which informs us, that the words were by Dante, and the tune by Scochetto: "Parole di Dante, e ſuono di Schochetti." Creſcimbeni, Iſ. della Volg. Poeſia, p. 409.

SCODEGHINO, a name given by chirurgical authors to a peculiar ſpecies of inciſion-knife, deſcribed by Scultetus, and uſed by Rouſſet in performing the Cæſarean operation.

SCODINEMA, a word uſed by ſome medical writers to expreſs a heavineſs of the head.

SCODRA, in *Ancient Geography*, a town of Illyria, upon the Drino.

SCODRI, a people of India, near the north of the river Indus.

SCOENUS, a river of Thrace.

SCOLARI, Giuseppe, in *Biography*, an excellent compoſer, who flouriſhed in the laſt century, between 1745 and 1766; during which period he produced twelve or fourteen operas, ſerious and comic, for different theatres, which were chiefly ſucceſsful. He was ſufficiently high in the opinion of the public, to be ſuffered to wreſtle with Piccini, in new ſetting the "Buona Figliuola maritata" of Goldoni.

SCOLD, Common, *Communis rixatrix*, in *Law*, is deemed a public nuiſance to her neighbourhood; for which offence ſhe may be indicted (Mod. 213.); and if convicted, ſhall be ſentenced to be placed in a certain engine of correction, called the trebucket, caſtigatory, or *cucking*-ſtool, which, in the Saxon language, is ſaid to ſignify the ſcolding ſtool; though now it is frequently corrupted into *ducking*-ſtool, becauſe the reſidue of the judgment is, that when ſhe is ſo placed therein, ſhe ſhall be plunged in the water thrice, as ſome ſay, for her puniſhment. 1 Hawk. P.C. 198. 200. 3 Inſt. 219. See Cucking-*Stool.*

SCOLECIA, in the *Materia Medica* of the ancients, a name given to a kind of verdigris.

Of this there were two ſpecies, the one found native in the earth, the other fictitious.

The latter kind was prepared by rubbing a quantity of vinegar in a braſs mortar, with a braſs peſtle, till it became thick and ropy: when it was in this condition, a ſmall quantity of alum and ſea-ſalt, or nitre, were added to it, and it was ſet in the ſun in the heat of the dog-days. It was to ſtand thus till it became ropy, thick, and of a green colour; and then being drawn out into long threads, and dried, it had the reſemblance of worms in ſhape, and thence had its name.

SCOLEX, in *Natural Hiſtory*, a genus of the Vermes Inteſtina claſs and order. The generic character is, body gelatinous, variouſly ſhaped, broadiſh on the fore-part, and pointed behind; ſometimes linear and long, ſometimes wrinkled and ſhort, round, flexuous or depreſſed; the head is protractle and retractile. There are two

Species.

Pleuronectidis. Head with four auricles. It is found in the inteſtinal mucus of the turbot, plaiſe, ſole, gwiniad, and lump-fiſh. It is rarely viſible to the naked eye. Head pellucid, with two oblong ſhining red dots behind; the auricles plaited in various forms; the neck is pellucid, ſhort, with a lunate margin, which is red while the worm is in a living ſtate.

Lophii. This is found in the inteſtinal mucus of the Lophius piſcatorius. The body is minute, and hardly viſible to the naked eye, and is generally ſuppoſed to be a variety of the laſt.

SCOLIA, in *Entomology*, a genus of inſects of the order Hymenoptera. The generic character is as follows: mouth with a curved ſharp mandible, crenate within; jaw compreſſed, projecting, entire, and horny; tongue inflected and trifid, very ſhort; the lip is projecting, membranaceous at the tip, and entire; the feelers are four, equal, ſhort, and filiform, ſituated in the middle of the lip; antennæ thick and filiform, the firſt joint longer than the reſt. There are thirty-nine ſpecies deſcribed in the Syſtema Naturæ.

Species.

Atrata. Hairy, black; wings ferruginous, tipt with violet. It is an inhabitant of the South American iſlands. The antennæ of the male are long and cylindrical, of the female ſhort and incurved; the abdomen is ovate, ſeſſile.

Nigrita. The ſpecies is black; the wings are white, with a black rib. It inhabits Africa. A ſpecimen of it is in ſir Joſeph Banks's muſeum.

Quadri-maculata. Hairy, black; abdomen with fulvous ſpots. It inhabits North America. The abdomen is oblong; the ſecond and third ſegments are marked with two round yellow ſpots; the edges of the ſegments are ciliate; the wings are brown, with a violet gloſs.

Flavifrons. Black; front yellow; abdomen with four yellow ſpots. It is an European inſect. The antennæ are black or ferruginous; the front is yellow, with a brown ſpot in the middle; the thorax is black, with two yellow dots on the ſcutel.

Sex-maculata. Hairy, black; the abdomen is marked with three pair of yellow ſpots. This is found in divers parts of Italy. The eyes have a yellow ſpot before and behind; the wings of the male are teſtaceous, tipt with blue.

Hæmorrhoidalis. Hairy, black; abdomen with two yellow bands; fore part of the thorax and tail with ferruginous hairs. It inhabits Saxony. The wings are ſubteſtaceous, tipt with brown.

Rubiginosa. This is black; the third ſegment of the abdomen with two fulvous ſpots; the hind ones with ferruginous hair; the tail is three-toothed. It inhabits the Eaſt Indies. The wings are blue.

Ruficornis. Black; antennæ fulvous; wings blue. This is an African inſect, and found in Senegal. It is of a large ſize; the firſt joint of the antennæ is black.

Variegata. Black, ſpotted with yellow; the firſt ſegment of the abdomen is yellow; the ſecond, third, fourth, and fifth, with two yellow ſpots; the reſt immaculate; the tail is three-toothed. It inhabits Cayenne, and is large. The antennæ are black; the head and lips are yellow; the thorax is black ſpotted.

Bimaculata. This inſect is hairy and black; the abdomen is marked with two yellow ſpots; the antennæ are yellow. It inhabits North America and Spain. The firſt joint of the antennæ is black; the wings are tipt with brown.

Ciliata. Black; ſegments of the abdomen with a ciliate fulvous margin. Inhabits Spain. This is a large inſect; the legs are black, covered with golden hair.

Aurea. This is a hairy inſect, of a ferruginous colour; the head is black; the wings duſky. It inhabits Barbary. Tail entire.

Ferruginea. This alſo is a hairy inſect, and of a ferruginous colour; the wings are tipt with brown. It inhabits New Holland. A ſpecimen is preſerved in ſir Joſeph Banks's muſeum. The wings are ferruginous; the body is covered with ferruginous hair.

Scutellata. Black; the thorax is fulvous, and ſlightly toothed behind; the abdomen is marked with four fulvous ſpots. It is found at Naples, and is the ſize of the laſt. The thorax is black before, and fulvous behind; the margin is nearly five-toothed; all the legs are black.

Radula. Black, hairy; the abdomen is marked with four yellow bands.

Tridens. This alſo is black, but the abdomen has three yellow bands; the tail is three-toothed. It inhabits Italy. Fore-lobe of the thorax is yellow on each ſide.

Hortorum. Black; abdomen with two yellow bands; the wings are ferruginous, tipt with blue. It is found chiefly in Spain.

Unifasciata. Hairy, black; abdomen with a yellow band; wings ferruginous at the baſe, and brown at the tip. This is found in Barbary, as is the next.

Maura. Deep black; wings blackiſh, but the tips are paler; tail three-toothed.

Collaris. Hairy and black; the crown, fore part of the thorax, and two bands on the abdomen, are cinereous. It inhabits Spain. The wings are of a deep black.

Quini-fasciata. Hairy; abdomen blue, with five yellow bands; the tail is three-toothed. It inhabits Africa. Sir Joſeph Banks has a ſpecimen. The antennæ are black; the head and thorax are downy and cinereous; the wings are browniſh; the legs are of a hairy brown; the fore-ſhanks are yellow without.

Bi-cincta. Hairy, black; abdomen with yellow bands; the wings are of a blackiſh-blue colour. It inhabits America. The ſecond abdominal band is ſometimes interrupted.

Notata. Black; abdomen with two yellow bands, the firſt with a black dot on each ſide. It inhabits Italy. The head is marked with two yellow ſpots on the front, the lateral ones lunate; the abdomen is marked with a pair of ſmall yellow dots behind the bands; the wings are blue.

Quini-cincta. Cinereous, hairy; the fore-edge of the thorax and ſcutel yellow; abdomen blue, with five yellow bands; the tail is three-toothed. It inhabits Italy, and reſembles the quini-faſciata.

Verticalis. Hairy and black; the crown is fulvous. It is a native of New Holland. A ſpecimen of this, and alſo of the next, exiſts in the muſeum of ſir Joſeph Banks. The crown has three ſtemmata; the wings blueiſh.

Quadri-pustulata. Black; abdomen with four rufous dots; the wings are blue. It inhabits Malabar.

Quini-punctata. Black; abdomen rufous in the middle, the tip black, with five white dots. It is a native of Germany, and ſmall. The antennæ petiolate; the head with a ſmall white dot in the orbits; the thorax is marked with a white dot on each ſide; the abdomen with five white dots, the middle ones very ſmall; the legs are ſhort.

Octo-guttata. Black; abdomen with two tranſverſe white dots; the wings are black. It is found chiefly in Spain, on the Allium cepa.

Quadri-guttata. Black; abdomen with four white dots; the wings are hyaline. It inhabits Germany. The antennæ are ferruginous beneath; the head is black; the front white.

Sex-guttata. Black; the abdomen is marked with ſix white dots; the wings are hyaline. It inhabits Germany, and is ſmall. The wings are white, with a black coſtal dot.

Prisma. Black; abdomen with three yellow bands, the firſt and laſt interrupted, and a ſmall yellow dot at the tail. This is a ſmall inſect, and a native of Saxony.

Quadri-punctata. Black; abdomen with four white dots; wings ferruginous, tipt with brown. This is found chiefly in Italy, and is ſmall. The body is hairy; the abdomen is marked with two dots.

Sex-cincta. Black, ſpotted with yellow; abdomen black, with ſix yellow ſtreaks. It is a native of the South American iſlands. The head is black, and tip ferruginous; thorax black, ſpotted with yellow; the legs are ferruginous.

Interrupta. Black, with cinereous hair; abdomen black, with ſix yellow bands, the three upper ones interrupted; the tail is three-toothed. This is an Italian inſect. Lip with a yellow line on each ſide at the baſe; the thorax is marked with three yellow dots on the ſcutel; the fourth band of the abdomen with a black dot on each ſide; the legs are black; the four fore-ſhanks yellow above; wings whitiſh, the rib of the upper pair ferruginous.

Senilis. Cinereous-hairy; tail five-toothed and brown. It is a native of Barbary. Lip yellow, with a black ſpot in the middle; the wings are hyaline, with a ferruginous rib.

Septem-cincta. Cinereous-hairy; the abdomen is blueiſh, with ſeven yellow bands; the tail is three-toothed. It is found in New Holland. A ſpecimen is in the muſeum of ſir Joſeph Banks. The tail has a ſhort recurved ſting; the wings are brown.

Cylindrica. This is a black inſect; the edge of the ſegments of the abdomen and lateral dot near the edge are yellow. It inhabits Italy. In the yellow lateral dot is a ſmall black one; the legs are black; the fore-ſhanks yellow; the ſting ſhort and recurved.

Bifasciata. Black; the ſcutel and the two dots on the thorax are ferruginous; the abdomen is marked with two interrupted ferruginous bands. It is a native of New York.

Vespiformis. This is ferruginous; the five ſegments of the abdomen are black on the fore part; wings are of a dirty yellow, with a black baſe and tip. It inhabits China.

Scolia, or *Songs of the Ancient Greeks.* Vocal muſic is of ſuch high antiquity, that its origin ſeems to have been coeval with mankind; at leaſt, the lengthened tones of pleaſure and pain, of joy and affliction, muſt long have preceded every other language, and muſic. The voice of paſſion wants but few articulations, and muſt have been nearly the ſame in all human creatures; differing only in gravity or acuteneſs, according to age, ſex, and organization, till the invention of words, by particular conventions, in different ſocieties, weakened, and, by degrees, rendered it unintelligible. This primitive and inſtinctive language, or cry of nature, is ſtill retained by animals, and univerſally underſtood, while our artificial tongues are known only to the ſmall part of the globe, where, after being learned with great pains, they are ſpoken. “We talk of love and of hatred,” ſays M. de Voltaire, “in general terms, without being able to expreſs the different degrees of thoſe paſſions. It is the ſame with reſpect to pain and pleaſure, of which there are ſuch innumerable ſpecies. The ſhades and gradations of volition, repugnance, or compulſion, are equally indiſtinct for want of colours.” This cenſure ſhould, however, be confined to written language; for though a word can be accurately expreſſed in writing, and pronounced but one way, yet the different tones of voice that can be given to it, in the utterance, are infinite. A mere negative or affirmative may even be uttered in ſuch a manner, as to convey ideas diametrically oppoſite to the original import of the word.

Muſic, conſidered then as the language of the paſſions, is moſt expreſſive, when its movements are leaſt impeded by difficult articulations; and this accounts for the preference of one language to another, for muſical purpoſes; for the pleaſure we receive from inſtrumental muſic, of the moſt exquiſite kind; and from diviſions in airs that are well executed by the voice.

It has already been obſerved, that ſongs preceded the uſe of letters, and ſerved not only for amuſement, but ſupplied the place of hiſtory in after-ages. Laws were originally ſung, to be the better retained in memory; and prayers offered up to the gods were chanted, in order to add to their ſolemnity and energy. The firſt public uſe, therefore, of muſic was the ſervice of religion; and the firſt private uſe, to alleviate labour and care, or to expreſs hilarity during ſocial happineſs.

Theurgic hymns, or ſongs of incantation, ſuch as thoſe aſcribed to Orpheus, which were performed in the myſteries upon the moſt ſolemn occaſions, were the firſt and moſt ancient of which we have any account in Greece; and theſe are ſuppoſed to have originated in Egypt.

The ſecond ſpecies conſiſted of poetical and popular hymns, that were ſung at the head of an army, or in praiſe of ſome divinity, during the public worſhip of the gods in temples; and theſe were diſtinguiſhed by particular appellations, according to the deities to whom they were addreſſed; as Pæans to Apollo and Mars, and Dithyrambics to Bacchus. Hymns, however, of this kind, in proceſs of time, were laviſhed upon heroes, kings, and generals.

There was ſtill a third claſs, diſtinct from theſe, which may be denominated philoſophic, or allegorical hymns, in which the attributes of the Supreme Being, as the apologiſts for Paganiſm pretended, were celebrated under ſome fable or virtue perſonified.

Of all the different kinds of ſcolia, or feſtive ſongs, that were in uſe among the inhabitants of Greece, and that were diſtinct from religious hymns, thoſe of which we have any remains are chiefly ſuch as were ſung at table, during the time of banquets, or repaſts. We are told, however, by Plutarch, Athenæus, Lucian, and other Greek writers, that in the firſt uſe of theſe, they were real pæans, ſacred canticles, or hymns, ſung by the whole company to ſome divinity. It afterwards was the cuſtom for each of the gueſts to ſing one of theſe ſongs alone, holding a branch of myrtle in his hand, which he paſſed about to his next neighbour, as we do the bottle; and this may be called the ſecond manner of performing theſe ſongs. The third was to the accompaniment of the lyre, and required profeſſed muſicians, ſingers, and citharœdiſts; for muſic was now arrived at a greater degree of perfection among artiſts, who made it their chief employment, than gentlemen who employed themſelves in it, among other exerciſes in the general courſe of education, only as an amuſement.

As there were three ſeveral ways of performing theſe ſcolia, the ſubjects upon which they were compoſed may be likewiſe arranged under three claſſes. The firſt claſs conſiſted of moral ſongs, of which ſeveral are preſerved by Athenæus.

In the following ſcolium, Timocreon gives his opinion of riches.

“Vile riches ſhould no favour find,
By land or ſea, among mankind;
But ſhould be ſent with fiends to dwell,
Down in the deepeſt, blackeſt hell:
For ’tis from them, ere ſince the world began,
The greateſt ills have ſprung, which torture man.”

And Plato, Athenæus, and Lucian, have all quoted a ſong upon the pre-eminence of worldly bleſſings, that is aſcribed to Simonides:

“The firſt of human gifts is health,
The next on beauty’s power attends;
The third, poſſeſſing well-earn’d wealth;
The fourth is youth, enjoy’d with friends.”

Phocylides has given the ſame ſentiment, in different words. And Ariſtotle, having brought it from Delphos, has done it the honour to place it at the head of his Moral Writings. Anaxandrides, however, according to Athenæus, was not ſo partial to it; but, on the contrary, diſputed the ſentiments it contained.

“That health is the firſt of all bleſſings below,
Is a truth which no logic can fairly confute;
But the ſecond on perſonal charms to beſtow,
And on riches the third, I beg leave to diſpute:
Next to health, give me riches; for beauty, though bright,
In hunger and rags is a villainous ſight.”

The ſecond claſs of ſcolia comprehends mythological hymns, and hiſtorical ſongs. Of theſe we ſhall give the following, from Athenæus, as ſpecimens merely of the ſentiments which theſe kinds of compoſitions contained; for as to the meaſure and muſic, they are now equally irrecoverable.

To the Divinities that preſide over Riches and Abundance.

"At the genial board I ſing
Pleaſures which from plenty ſpring:
While the wreath adorns our brows,
Ceres well deſerves our vows.
Plutus too, thy name I'll join,
And thy ſiſter Proſerpine.
Ye our ſocial joys augment,
From your bounty flows content.
Bleſs our city with increaſe,
And our ſong ſhall never ceaſe."

On Latona and her Offspring.

"Latona once, on Delos' iſle,
Gave to the world a matchleſs pair;
Apollo, who makes nature ſmile,
Whoſe ſhoulders glow with golden hair:
And Dian', goddeſs of the chace,
Whoſe ſhafts unerring ever fly,
Sole ſov'reign of the female race,
Nocturnal empreſs of the ſky."

On Pan.

"O Pan, delight of nymphs and ſwains,
Protector of Arcadian plains,
Who lead'ſt the frolic dance;
The laughing fair, who play the prude,
But fly from thee to be purſu'd,
Their favours to enhance.

They love thy ruſtic oaken reed;
They know thy vigour, force, and ſpeed,
And feign a modeſt fear.
Our jocund ſtrains ſhall ſwell for thee,
And render, by their mirth and glee,
Thy name for ever dear."

Among the hiſtoric or patriotic ſongs, there are none more frequently mentioned by ancient authors than thoſe upon Harmodius and Ariſtogiton. See HARMODIUS. See alſo HYMN.

The third and laſt claſs of ſcolia, concerning which we ſhall ſpeak, was upon common and miſcellaneous ſubjects, peculiar to no age or country. The greateſt number, and the beſt of theſe, were upon love and wine. "Love inſpires muſic and poetry:" this was a memorable maxim among the Greeks, and the ſubject of one of Plutarch's Sympoſiacs.

Scolia, written by the greateſt poets of antiquity, are mentioned by ancient authors; and Athenæus has preſerved ſpecimens and fragments of a great number. It muſt, however, be owned, that moſt of them appear now to be unmeaning and inſipid. And Athenæus either has not ſelected them with taſte and judgment, or it would encourage a belief that the genius of the Greeks could not ſtoop to elegance in trifles. Indeed, with reſpect to ſongs upon the ſubjects of love and drinking, thoſe of Anacreon have been long regarded as ſtandards of excellence. They are diſtinguiſhed, by their native elegance and grace, from every other kind of poetical compoſition; and the voluptuous gaiety of all his ſongs is ſo characteriſtic, that his ſtyle and manner have had more imitators than Pindar. Anacreontics are expected to be as joyous and ſportive, as Pindarics daring and ſublime. "His ſmiling and flowery images," ſays M. de la Nauze, "are the more certain to pleaſe, as they are all ſelected with taſte and diſcernment, and faithfully copied from nature." Much leſs can be ſaid, however, in behalf of the moral purity of his ſentiments; for it muſt be owned, that their licentiouſneſs is the more dangerous, in proportion to the art and inſinuating delicacy with which they are clothed. See ANACREON.

Unfortunately, the miſcellaneous and moral ſcolia have the leaſt merit of all thoſe that are preſerved in Athenæus. Indeed, the ſimplicity of many of them will not bear an Engliſh dreſs, unleſs it be very much laced and embroidered by the tranſlator; for ſo little of the ancient genius of Greece appears in them, that nothing but a mixture of modern poetical images is likely to procure them a peruſal. The following ſcolium, for inſtance, when literally and fairly tranſlated, can afford no pleaſure to a modern reader: "Son of Telamon, warlike Ajax! they ſay you are the braveſt of the Grecians who came to Troy, next to Achilles!"—And this is called a ſong!

Nor is either the poetry or morality very exalted of this: "He who does not betray his friend, has great honour both with gods and men—in my opinion." But we muſt not further purſue the ſubject in this place.

SCOLIASIS, in *Surgery*, a diſtortion of the ſpine.

SCOLION, among the *Ancients*, a kind of bacchanal ſong uſed at entertainments.

SCOLLIS, in *Ancient Geography*, a mountain of Triphylia, in the northern part, N. of the river Peneus.—Alſo, a mountain of the Peloponneſus, in Achaia Propria, in which was the ſource of the river Lariſſus.

SCOLOPAX, in *Ornithology*, a genus of birds of the order Grallæ. This genus is characterized by a roundiſh bill, which is obtuſe and longer than the head; the noſtrils are linear; the face covered; the feet are four-toed, the hind toe conſiſting of many joints. There are about fifty ſpecies enumerated by Gmelin, which are ſcattered over different parts of the globe; of theſe, fifteen, as will be found, belong to our own country. This genus includes the curlews, the ſnipes, woodcocks, godwits, whimbrels, and green and yellow ſhanks.

Species.

GUARAUNA; Braſilian Whimbrel. Bill arched, yellowiſh; legs brown; head brown, ſtreaked with white. This is a native of South America, and is twenty-one inches long. The bill is brown, with a yellow baſe; feathers of the head and neck brown, with a whitiſh edge; the back and body beneath cheſnut; ſhoulders, wing-coverts, rump, and tail brown, with a green gloſs; quill-feathers brown, the outer edge gloſſy green.

BOREALIS; Eſquimaux Curlew. Bill and legs black; the body is brown, ſpotted with grey, beneath pale ochre. This inhabits the moiſt and inundated meadows of Hudſon's bay; it is leſs than the common curlew; it feeds on worms and berries.

AFRICANA; Cape Curlew. Bill arched, blackiſh-brown; legs brown; body cinereous, beneath it is white, and the breaſt is marked with ruſty ſpots. This inhabits the Cape of Good Hope, and is the ſize of a ſnipe. The face and rump are white; the edges of the wings are white mixed with grey; the quill-feathers are brown, with white ſhafts; the ſecondary wing-coverts tipt with white.

*PYGMÆA; Pigmy Curlew. Arched bill and legs black; the body is varied with ferruginous, brown, and white; beneath it is white. It is ſometimes found in this country, though not at all common: it is the ſize of a lark; the rump is white; the quill and outer tail-feathers are edged with white.

MADAGASCARENSIS; Madagaſcar Curlew. Arched bill and legs reddiſh ; the back with brown rhomboid ſpots. It inhabits Madagaſcar : in its ſize and appearance it reſembles the arquata, except that the bill is leſs arched ; the chin is white ; and the ſpots on the body are more diſtinct.

* ARQUATA ; Common Curlew. Bill arched, blackiſh ; legs blueiſh ; wings blackiſh, with ſnowy ſpots. This ſpecies inhabits moiſt and fenny places in our own country, and in divers parts of Europe, Aſia, and Africa, in flocks ; it feeds on worms and marſh inſects ; lays four eggs ; it is of an olive colour, with brown ſpots ; the fleſh is very good. It is alſo deſcribed as having the lower mandible reddiſh at the baſe ; the body above and breaſt are marked with duſky-brown ſtreaks ; the chin, rump, belly, and vent white ; the quill-feathers are black ; within ſpotted with white ; the legs are blueiſh ; toes flat and broad, and it is nearly two feet long. There is a variety which is varied with rufous and black ; beneath pale rufous ; the legs are black ; the wings are black, with reddiſh ſpots. It inhabits North America. The body is leſs ; and the bill longer than thoſe of the other.

LUZONIENSIS ; Luzonian Curlew. This ſpecies is white ; the head and neck with black ſtreaks ; the belly and tail with black bands ; the back is brown, with white ſpots ; the crown is black. It inhabits Luzonia, and is leſs than the laſt.

TAHITIENSIS ; Otaheite Curlew. The bill of this is brown, reddiſh at the baſe ; legs blue-grey ; crown brown ; eye-brows pale ; body reddiſh-white, with duſky ſtreaks and ſpots ; the back is black, waved with white. This, as its trivial name denotes, inhabits Otaheite ; it is twenty inches long. The quill-feathers are duſky, with paler edges ; the tail is of a dirty yellow near the baſe, with ſpots, the reſt with duſky bars.

LEUCOCEPHALA ; White-headed Curlew. The bill in this is red ; legs black, cinereous ; head and neck white ; the body is blue ; and the quill-feathers black. This is a native of the Cape of Good Hope.

* PHÆOPUS ; Whimbrel. The bill of this is arched and black ; the legs are blueiſh ; the back is marked with rhomboid brown ſpots ; the rump is white ; lower mandible reddiſh at the baſe ; the body above and breaſt are browniſh, with duſky brown ſtreaks ; the chin, rump, belly, and vent are white ; the tail is brown, with duſky bars ; the quill-feathers are black, ſpotted with white on the inſide. It is about half the ſize of the common curlew, but agreeing with it in appearance and habits. Although found in this country, it is rare.

HUDSONICA ; Hudſonian Curlew. Bill black ; legs blue ; body brown, ſpotted with white ; the belly is white ; the crown is of a cheſnut-brown colour, with a longitudinal white line in the middle. It inhabits Hudſon's bay ; is the ſize of the laſt. The eye-brows are white, and the rump is the colour of the back.

FUSCA ; Duſky Snipe. Bill bent in at the tip ; body black, waved with white ; the rump and wings beneath are white. It inhabits the north of Europe, and is twelve inches long. It migrates ; the bill is black ; the legs are brown ; the lower part of the back and rump are white ; the quill-feathers are brown, ſpotted with grey ; the tail-feathers are brown, tranſverſely ſtreaked with white.

CANCREA ; Terek Snipe. The bill of this ſpecies is black ; the legs are reddiſh-brown ; the body cinereous, beneath white ; wings with a whitiſh tranſverſe band. This is about the Caſpian ſea, is nine inches long, and gregarious ; the bill is a little recurved, and black ; throat and breaſt ſtreaked with cinereous ; the feathers are brown in the middle ; the firſt quill-feathers brown ; ſecondary cinereous.

SUBARQUATA. This has an arched bill, and black ; head, neck, and ſpurious wings brown, waved with pale ruſty ; the body above is cinereous, beneath pale and ruſty ; the chin, vent, and rump, are white. This inhabits the Caſpian ſea, and is about eight inches long. In this ſpecies the lower mandible is the ſhorter of the two ; the tongue is long, arrow-ſhaped, entire ; the eyes are brown ; the orbits whitiſh ; lores brown ; the rump and vent are marked with brown ſpots ; the tail is rounded, and of a brown-aſh colour.

INCANA ; Aſh-coloured Snipe. Bill black ; legs yellowiſh-green ; the body is cinereous ; ſpot behind the bill and eyes, chin, throat, and middle of the belly, white. This is a native of Palmerſton iſland, and is eleven inches long ; the bill is a little incurved at the tip ; the chin is marked with brown ſtripes.

GRISEA ; Brown Snipe. The bill, legs, wing-coverts, and quill-feathers, brown ; the head, neck, and ſhoulders are brown-aſh, ſpotted with black ; the back and belly are white. It inhabits the ſea-coaſts of New York, and is eleven inches long ; the band between the bill and eyes, and ſtripe on each ſide above the eyes, white ; the ſecondary quill-feathers edged with white ; the breaſt is varied with white and brown ; tail and rump with black and white lines ; the back toe is high and long.

NOVEBORACENSIS ; Red-breaſted Snipe. This is varied with black, cinereous, and red ; the back and belly are white ; wings cinereous ; the tail is barred with white and black. It is a native of New York. The bill and legs are brown ; the fore-part of the neck is ferruginous, with black ſpots.

NIGRA ; Black Snipe. The bill and legs of this are red ; the body is black. This ſpecies inhabits the iſlands of the northern countries of Aſia and America.

NUTANS ; Nodding Snipe. The bill is black ; the legs greeniſh ; the body cinereous ; crown and upper part of the back duſky red, ſtreaked ; lower white, ſpotted with black. This ſpecies inhabits Labradore, and is ſeen continually nodding its head. The cheeks are cinereous, ſtreaked with black ; the neck and breaſt mixed with cinereous and ruſty, with duſky ſpots ; the belly is white ; the leſſer wing-coverts cinereous, greater duſky edged with brown ; the quill-feathers are duſky, the ſecondary tipt with white ; the tail with black and white lines, and reddiſh at the tip.

FLAVIPES ; Yellow Shank. Bill black ; legs yellow ; body whitiſh, ſpotted with black ; the throat and breaſt varied with black and white ; the belly and tail-coverts are white. This is found at New York in the autumn of the year, and is eleven inches long ; the bill is a little bent at the tip ; the leſſer wing-coverts are brown ; primary quill-feathers duſky ; the tail is marked with brown and white lines.

MELANOLEUCA ; Stone Snipe. Bill black ; legs yellow ; body varied with black and white. It inhabits, during the autumn, the ſandy ſhores of Labradore, and is twice as large as the S. gallinago, to be hereafter deſcribed : this is perpetually nodding its head. The tail and rump are marked with black and white lines ; the primary quill-feathers are duſky.

SEMI-PALMATA ; Semi-palmated Snipe. Semi-palmate ; legs and bill duſky ; the head and neck are ſtreaked black and white ; the breaſt is white, dotted with black ; the back is cinereous, with black arrow-ſhaped ſpots. This inhabits New York. It is fourteen inches long ; the belly is white ; the flanks are white, with tranſverſe black lines ; the primary quill-feathers are duſky, with an oblique white band ;

band; the ſecondary are white; the middle tail-feathers cinereous, with black lines; the outer ones are white.

* Rusticola; Woodcock. Bill ſtraight, reddiſh at the baſe; legs cinereous; thighs covered; the head has a black band on each ſide. Four varieties are noticed by Gmelin: 1. Body white. 2. Very pale ſtraw-colour. 3. Head reddiſh; body white; wings brown. 4. The body is ſpotted; the wings are ſnowy. It is fifteen inches long, lays four or five eggs, ruſty, with brown ſpots; the fleſh, and even the inteſtines, are good. The woodcock is reckoned very fine food, and is found in this country, and other northern parts of Europe, Aſia, and Africa. In the ſummer theſe birds retreat, in France, to the loftier mountains, and thoſe of our own country towards the mountainous regions of Norway and Sweden. Few birds are more widely ſcattered over the whole continent than the woodcocks. They are found in great plenty as far ſouth as Smyrna and Aleppo; and in the ſame ſeaſon in Barbary, where the Africans call them, from their uncouth ſhapes, the aſſes of the partridge. Towards the Eaſt they are found as far as Japan, where they are common. In the ſummer, they are found in Canada and Cape Breton in ſuch numbers, as renders it highly probable that the greater part of thoſe that frequent Great Britain and Ireland come from that quarter of the globe. On the weſt of Scotland they are far more numerous than on the eaſt, and on the weſtern coaſt of Ireland the obſervation is ſtill more juſt. They arrive there in ſuch vaſt quantities, and are ſo completely exhauſted by their long flight, that they may ſometimes be taken by the hand.

Both in its native country, and during its migrations, the woodcock feeds upon ſmall worms, which it obtains by means of its long bill in ſoft ground and moiſt woods. When theſe birds migrate, they generally fly in flocks, and take the advantage of the night, or of cloudy weather. They are, in ſome reſpects, night birds, for they feed moſt buſily in the evening, and then their flights are moſt diſtant and rapid. Their neſts are careleſsly conſtructed of ſmall twigs mixed with withered graſs, built generally on the ground, at the root of a tree, and in them are found four or five white eggs, of a browniſh-grey, marbled with deeper ſpots of the ſame colour. The young run as ſoon as they leave the ſhell, and fly when they have ſcarcely any other feathers than thoſe of their wings.

Minor; Little Woodcock. Bill ſtraight; legs browniſh; front cinereous; hind-head black, with four tranſverſe yellowiſh lines; chin white; body above black, waved with tawnyiſh; beneath yellow. It inhabits America; is nearly a foot long; the fleſh is reckoned a great delicacy. The lower mandible is much the ſhorter; from the bill to the eyes is a duſky line; the greater wing-coverts are marked with black and red angular lines, the inner are ferruginous; primary quill-feathers duſky; the tail is black, with a brown tip.

Paludosa; Savanna Woodcock. Bill and legs brown; lores and eye-brows black; the body is black, varied with rufous above, beneath with whitiſh. It inhabits the ſavannas of Cayenne. The body beneath is varied with black ſpots.

* Major; Great Snipe. Of this the legs and crown are black; the latter with a pale divided line down the middle, a pale ſtreak above and beneath the eyes; the body varied above, white beneath; the bill like that of the woodcock; the lower feathers of the body, except the middle of the belly, edged with black; quill-feathers duſky; tail-feathers reddiſh, and, excepting the two middle ones, with black lines. It ſometimes is found to weigh eight ounces; it is ſixteen inches long. It inhabits Siberia.

Cayennensis; Cayenne Snipe. Bill duſky, with a reddiſh baſe; the legs are brown; the body above aſhy-brown, ſpotted with yellow; beneath it is white. It inhabits Cayenne, and is thirteen inches long. The greater wing-coverts are whitiſh, the lower ones varied with a duſky kind of white; the quill-feathers are brown, the baſe, and ſome at the tip, are white; the throat is a little ſpotted; the rump is white, the tail is marked with duſky lines and tip.

Gallinago; Common Snipe. Bill ſtraight, tuberculate; legs brown; body varied with blackiſh and tawny; beneath it is white; the front is marked with four brown lines. The weight of this ſpecies is ſeldom more, or indeed ſo much, as four ounces, though the whole length is about twelve inches. It is met with in marſhy ſituations in almoſt every part of the world, and is, in ſome ſeaſons, rather plentiful in our own iſland. When there is very much rain, and for a long continuance, it reſorts to the hills, but in general it is found in marſhy grounds, where it can penetrate with its bill in queſt of worms. Some few remain with us the whole year, and breed in marſhes and bogs. The neſt is formed of the materials eaſily ſupplied by the neighbourhood, ſuch as coarſe graſs, or heath; it is placed on a dry ſpot near a ſwampy place; the eggs, like thoſe of the lapwing, being much pointed, are invariably placed with their ſmaller ends inwards. In the breeding ſeaſon the ſnipe changes its note entirely. The male will keep on the wing for an hour together, mounting like a lark, uttering a ſhrill piping noiſe, and then deſcend with great velocity, making a bleating ſound, ſomething like that of an old goat, which is alternately repeated round the ſpot poſſeſſed by the female, eſpecially while ſhe is ſitting upon her neſt. The young will run off almoſt immediately after they are freed from the ſhell; but the parent bird attends them till their bills have acquired a ſufficient firmneſs to enable them to provide for themſelves. When undiſturbed in its retreat, the ſnipe walks leiſurely, with its head erect, and it keeps moving the tail at ſhort intervals. It is, however, rarely obſerved in this ſtate of tranquillity, being extremely watchful, and perceiving the ſportſman, or his dog, at a great diſtance, and then concealing itſelf, or, as it happens more frequently, ſpringing and taking flight beyond the reach of the gun. When firſt diſturbed, it utters a feeble whiſtle, and generally flies againſt the wind. From its vigilance and manner of flying, which is in a zig-zag direction, it is extremely difficult to ſhoot. It is very highly eſteemed, and indeed very delicious food, and though uſually very fat, it rarely diſagrees even with the weakeſt ſtomach.

Gallinaria; Finmark Snipe. The bill of this ſpecies is ſtraight and tuberculate; the legs are yellow; the head is grey, and the body is variegated. It inhabits, as its trivial name denotes, Finmark.

* Gallinula; Jack-ſnipe. The bill in this ſpecies is ſtraight, tuberculate; the body is variegated; the legs are greeniſh; the lores are brown; the rump is varied with violet. It is found in various parts of Europe, Aſia, and America, and is eight or nine inches long. The bill is black; the body is variegated with teſtaceous, black, violet, and gloſſy green; the head is of a pale yellow, and black lines reaching from the bill to the hind head; the breaſt is ſpotted; the belly and vent are white.

Belgica. This is an inhabitant of the Netherlands. Its bill is very ſtraight, tipt with black; the head, neck, and breaſt are ferruginous; the belly is white; the back, wings, tail, and legs are black. It feeds on land inſects.

Obscura. The bill of this ſpecies is ſtraight and purple. The legs are of a fleſh-colour; the head is cinereous; the quill-feathers are black-grey. It inhabits the ſhores of the Caſpian ſea.

Fedoa; American Godwit. This is found in and about Hudſon's bay, and is full ſixteen inches long. The bill is tipt with black; the eye-brows are white; the lores are duſky; the cheeks and chin are white; the head and neck are varied with duſky and pale brown; the breaſt is marked with black lines; the belly is brown; the back and wing-coverts are varied with ferruginous and duſky; the quill-feathers are ferruginous without; the tail is marked with pale brown and black lines.

* Glottis; Green-ſhank. This inhabits Aſia, America, and Europe, and is fourteen inches long. The bill is black, the lower mandible bends a little upwards; the eye-brows and lower part of the back white; the head, neck, and back pale cinereous; the ſhafts of the feathers are ſpotted with brown; the quill-feathers are duſky, ſpotted within with white; the tail is white, with duſky lines; the legs are very long. This ſpecies is ſometimes found in ſmall flocks, on our coaſts in winter, as alſo in marſhes and fens contiguous to the ſea. Some few are ſuppoſed to remain with us all the ſummer, and to breed in our fens. The greater part, however, retire northward to breed, and are found in Sweden, Ruſſia, and Siberia. Their fleſh, like that of the reſt of the genus, is well-flavoured and reckoned good eating.

* Calidris; Red-ſhank. The bill is ſtraight and red; the legs are ſcarlet; the ſecondary quill-feathers are white. It inhabits Europe and America, and is twelve inches long. The bill is black towards the tip; the irides are of a reddiſh-hazel colour; the head and neck above are cinereous; the back and ſhoulders are of a greeniſh-brown; the wing-coverts cinereous, mixed with duſky brown and ſpotted with whitiſh; the ſecondary quill-feathers, except the two inner ones, are white towards the tip; the primary ones are duſky, the four or five inner ones are tipt with white; the lines over the eyes are white; between the bill and the eyes is a duſky ſpot; the chin and throat with ſhort duſky ſtreaks; the body beneath and the rump are white, with ſmall duſky ſpots; the tail-feathers have each 12 or 13 tranſverſe black lines. There is a variety of this ſpecies of which the body above is grey, beneath it is white; the neck beneath and ſide of the breaſt ſpotted with blackiſh; the rump and tail are barred with black and white. It inhabits China. The calidris is common in many parts of England, in the fens; it lays four eggs; is of a ſolitary diſpoſition, moſtly ſeen alone.

* Totanus; Spotted Snipe; called alſo the red-legged godwit, or ſpotted red-ſhank. This is blackiſh, with white ſpots; it is white beneath; the lines on the breaſt, and bands on the lateral tail-feathers, are blackiſh, and the legs are red. It inhabits this country, and other parts of Europe; feeds on the ſmaller ſhell-fiſh and vermes. It is rather rare in this country.

* Limosa; Leſſer Godwit. Bill a little bent back, red at the baſe; the body is of a grey-brown, varied with rufous, beneath it is white, the quill-feathers are white at the baſe, the firſt four without ſpots; the tail is white at the baſe. It inhabits Europe, and is ſeventeen inches long. It is gregarious, and is but ſeldom ſeen in Britain.

Capensis; Cape Snipe. The bill of this is ſtraight, and with a line on the crown of a reddiſh colour; the band on the breaſt is black; the line on each ſide the back is white. Of this ſpecies there are ſaid to be four other varieties. 1. Olive-green; neck black; crown and throat ferruginous; the orbits, ſcapulars, and belly white; quill-feathers and tail with tawny ſpots. 2. This is waved with cinereous, grey, and black; the head and neck are rufous; the orbits, chin, ſcapulars, and belly white; the pectoral band and eye-brows black; wings and tail with yellow ſpots. 3. White; head and neck black, wings and back green; primary quill-feathers ſpotted with red. 4. The upper part is marked with black ſpots and lunules; the back is blueiſh; the wings are of a cheſnut colour; the lower part of the breaſt is black; the cheeks, chin, and belly white; orbits and line on the ſhoulders yellow. They are all found at the Cape of Good Hope.

Sinensis; Chineſe Snipe. This is variegated with blueiſh, brown, rufous, and black; the eye-brows, line on the crown, chin, and belly white. It inhabits, as its name imports, China, and is about ten inches long.

Madaraspatana; Madras Snipe. The bill is reddiſh; the body above is varied with tawny and blackiſh; beneath it is white; the ſtreak on the middle of the crown and each ſide the head black-brown; the throat is tawny, ſpotted with blackiſh. It inhabits Madras.

Indica; White Indian Snipe. Bill and legs black; the body is of a dirty grey, waved with browniſh; beneath whitiſh; the band acroſs and beneath the eyes is grey. It inhabits divers parts of the Eaſt Indies.

* Lapponica; Red Godwit. The bill is a little recurved, yellowiſh; the legs are black, the body beneath reddiſh-ruſty. In a variety of this ſpecies the head and neck are cinereous; the chin and belly are white. It inhabits Europe and America, and is about eighteen inches long. Though found in this country, it is by no means common.

* Ægocephala; Common Godwit. The bill is ſtraight, reddiſh-yellow; the legs are greeniſh; the head and neck reddiſh; the three quill-feathers are black, with a white baſe. This is found in many parts of Europe, Aſia, and Africa, as well as in this country. With us it continues the whole year, and reſorts to the fens in ſpring for breeding. In the winter it is found on our ſhores, particularly at the mouths of large rivers and inlets, where the mud and ſand become bare at low water, where it feeds on inſects. It is highly eſteemed by epicures, and ſells very high. It is caught in nets, to which it is allured by a ſtuffed bird in the ſame manner, and at the ſame ſeaſon, as the ruffs and reeves.

* Leucophæa; Godwit. This is brown, edged with whitiſh; the neck is whitiſh, with ſmall brown ſpots; the chin and belly are white, the quill-feathers are marked with black bands. The bill is a little turned up, brown with a purple baſe; the tail-feathers are white; the two middle ones wholly, the reſt barred with brown on the outer ſide. This ſpecies is found in many parts of Europe as well as in our country. They are all migratory, appearing in this iſland in September, and continuing the whole winter. They are taken in the fens of Lincolnſhire with neſts, and fattened for the London market with bread and milk, hemp-ſeed, &c.

* Canescens; Cinereous Godwit. Legs long, cinereous; head, neck, and back varied with cinereous and white; the chin and breaſt are white, and ſpotted with aſh. Found chiefly in Lincolnſhire.

* Cantabrigiensis; Cambridge Godwit. Legs orange; the bill is red; the body above is of a brown-aſh colour; beneath it is white; the wing-coverts and tail-feathers barred with black. This is found chiefly in Cambridgeſhire.

Candida; White Red-ſhank. Straight, bill and legs orange; the body is whitiſh; tail-feathers white, barred with grey. This inhabits Hudſon's bay, and is eleven inches long.

Curonica. This is ſpotted with grey; the wings and bill are blackiſh; the lower mandible from the baſe to the middle ſcarlet; the legs are of a brick-duſt colour.

Marmorata; Marbled Godwit. This is variegated with blackiſh and pale rufous ſpots; the middle of the belly, eye-brows, and chin whitiſh; the breaſt is waved with brown; quill-feathers reddiſh, the firſt four without are tipt with black. This inhabits Hudſon's bay, as does the next.

Hudsonica; Hudſonian Godwit. Brown, with white ſpots, beneath ruſty cheſnut, with brown bars; the eye-brows, chin, rump, and baſe of the tail white. Of this ſpecies the bill and legs are blackiſh; the tail is ſhort and black, with a white baſe.

Scolopax, in *Ichthyology*, a ſpecies of *Centriſcus*; which ſee. See alſo Trumpet-*Fiſh*.

SCOLOPENDRA, in *Natural Hiſtory*, a genus of inſects of the order Aptera: the generic character is, antennæ ſetaceous; feelers two, filiform and united between the jaws; lip toothed and cleft; body long, depreſſed, conſiſting of numerous tranſverſe ſegments: the legs are numerous; there are as many on each ſide as there are ſegments of the body. There are thirteen ſpecies, ſcattered over different parts of the globe, three of which are common to this country. In the Latin language they have obtained the name of centipes, from the number of their feet or legs: one of the ſpecies has literally a hundred legs on each ſide, for ſo numerous are the ſegments into which their bodies are divided. Of this hideous race, ſome live beneath the bark of decayed trees, or are found below ſtones and garden boxes; others inhabit freſh and ſalt waters; and they are all remarkable for the quickneſs of their motions: they prey on other inſects.

Species.

* Lagura. This ſpecies has twelve legs on each ſide; the body is oval; the tail has a white pencil of hairs. It inhabits Europe, under the bark of old trees. The body is brown; the head black; the ſides with nine tufts of hairs.

Coleoptra. Legs long, and fourteen on each ſide; the body is ſcutellate. It is found in many parts of Europe. The antennæ are yellow, as long as the body; the thighs are prickly; the ſhanks are rough.

* Forficata. Legs fifteen on each ſide, the laſt longer than the reſt, and turning backwards, form a forked tail; the body is of a dun colour, ſmooth, and compoſed of nine ſcaly ſegments, without reckoning the head. It is found in divers parts of Europe and America, as well as in this country, generally under ſtones and flower-pots.

Gigantea. Legs ſeventeen on each ſide; tail with two hooked ſtyles. This is an American inſect.

Morsitans. The legs are twenty on each ſide; the eyes are eight in number. It inhabits various parts of the Eaſt Indies. This is ſaid to be the moſt venomous of the whole tribe.

Ferruginea. Legs twenty-two on each ſide; the body is ferruginous. It inhabits Africa. The body is divided into twenty ſegments; the legs are of a pale yellow.

Dorsalis. Legs thirty on each ſide; the body is brown, with a ferruginous dorſal line. It inhabits Tranquebar, and is a large inſect.

Clypeata. This has thirty legs on each ſide; the body is brown and rough; the head ſhielded. This alſo is found in Tranquebar, and is leſs than the dorſalis. The body is divided into ſixteen narrow ſegments, which are ſubſtriate and rough, with raiſed dots; the head is covered with a rounded entire ſhield; the antennæ are ſhort and pale; the tail is emarginate; the legs are pale.

* Electrica. This ſpecies has ſeventy legs on each ſide; the body is linear. It inhabits Europe, and our own country, in decayed wood, and ſhines in the dark. The body is very flat, tawny, with a black line down the back.

Phosphorea. This has ſeventy-ſix legs on each ſide. It is an Aſiatic inſect, and ſhines like a glow-worm in the dark: it has been known to fall from the air into a veſſel ſailing on the Indian ocean, a thouſand miles from any land. The head is ovate, yellowiſh, with two grooved lines, and another tranſverſe one; the antennæ are ſubulate and ferruginous, with fourteen articulations; the body is filiform, and about as thick as a gooſe-quill, purpliſh, with two parallel lines.

Occidentalis. This has one hundred and twenty-three legs on each ſide. It inhabits America. The body is ferruginous; the antennæ have fourteen articulations.

Gabrielis. This ſpecies has one hundred and forty-eight legs on each ſide; the body is yellowiſh. It inhabits Italy, and is four times as large as the S. electrica. The antennæ are ſhort, of fourteen articulations; the tail is ſemioval, with an appendage and two ſhort ſtyles.

Marina. The number of legs in this ſpecies is doubtful; the body is pale, with a rufous dorſal line. It inhabits the Atlantic ocean. In ſhape it reſembles, in a conſiderable degree, the leech; and it builds ſmall edifices, of a brittle and porous texture, on the ſhore at low water. Theſe little maſſes are compoſed of a number of ſmall funnels, each having the aperture cloſed with a covering of ſand, to protect the inhabitant from danger.

It is ſaid that in the Eaſt Indies, and alſo in America, there are ſcolopendræ from four to ſix inches long, and as thick as the finger: when of this bulk, they appear truly hideous, and their bite, particularly in hot climates, is reckoned dangerous. Some of theſe animals are ſaid to be without eyes, and to direct their courſe by means of two feelers, that extend beyond the head. It has been aſſerted too, that in ſome of them, when cut to pieces, the ſegments, like thoſe of the polypi, are capable of reproducing entire animals, but the fact is not at all certain.

This remarkable inſect, taken in the Iriſh ſea, is evidently the ſame animal deſcribed by Oligerus Jacobæus, in the Acta Medica Haffnenſia, under the name of *vermis aureus*, or *erucæ marinæ ſpecies rarior*. Phil. Tranſ. N° 224.

Dr. Peyſſonel deſcribes a marine ſcolopendra of very ſmall bulk, and ſquare figure, whoſe body and head were formed of eighty rings, and which had a power of occaſionally throwing out its inteſtines. The four ſides of this animal were armed with prickles, and every ring had four bundles of them, which are ſometimes ſpread out like fans: thoſe under the body ſerved the inſect as feet. Theſe ſcolopendræ, being placed upon the fingers, thruſt a great number of their prickles into the ſkin, and cauſed a ſharp pain, reſembling the effect of fire, of ſome continuance. Phil. Tranſ. vol. li. art. 6.

Mr. Maloet relates the hiſtory of a man, who for three years had a violent pain at the lower part of the forehead, near the root of the noſe; at length he felt an itching, and afterwards ſomething moving within his noſtril, which he brought away with his finger: it was a worm of the centiped kind, an inch and a half long, which ran ſwiftly. It lived five or ſix days among tobacco. The patient was free of his pain ever after.

Mr. Littre mentioned a like caſe, in 1708, of a larger centiped voided at the noſe, after it had thrown the woman, in whoſe frontal ſinus it was, into convulſions, and had almoſt taken away her reaſon. Hiſt. Acad. Scienc. 1733.

SCOLOPENDRA *Scutata*, the name of an animal of the inſect kind, found in the year 1736, by Klein, in Pruſſia, and at the ſame time by Mr. Brown, in ſome parts of Kent.

It was met with in Pruſſia in vaſt abundance, in the places where they take cray-fiſh, and having not been met with there before, ſurpriſed the people employed in that fiſhery ſo much, that they brought home many of them.

In Kent, its appearance was attended with greater ſingularity. Mr. Brown found it in a pond on Bexly Common, where the country people had obſerved vaſt numbers of them for five or ſix weeks before. This pond was quite dry on the 24th of June that year, but being filled by the thunder ſhower on the 25th of the ſame month, the pond was obſerved to ſwarm with them in two days, by a farmer watering his cows there; and what is very obſervable is, that there appears no channel into this pond that could convey them from any other place.

The creature is about an inch and a half in length, and ſomewhat leſs than an inch in breadth, and though ſo ſmall, yet bears a great reſemblance, in many of its parts, to the great Molucca crab, called by ſome the *buckler crab*. When the back is viewed, it is ſeen to be covered with a caſe or ſhield, ſo that it in ſome meaſure reſembles a tortoiſe, only it is remarkably gibbous, or prominent all along the middle of the back, and has a triangular opening in the ſhell near the tail. On the head it has two ſhort horns, ſtanding in the common place of the antennæ. When the caſe or ſhell is taken off, the rings on the body are found to be about thirty in number. The legs are very extraordinary; they are forty-two on each ſide; the twenty that ſtand next the head are nearly of the ſame ſize, but then they grow gradually ſmaller towards the tail. The feet conſiſt each of five membranaceous claws; theſe are flat, and have a ſtiff rib in the middle, and are beſet at the edges with hairs, in the manner of the legs of a crab. The whole ſtructure of the legs ſeem calculated for ſwimming rather than walking. Philoſ. Tranſ. N° 447. p. 151.

SCOLOPENDRITES. See ECHINUS.

SCOLOPENDRITES *Lapis*, a name given by ſome authors to a ſpecies of the *lapis ſyringoides*, or pipe-ſtone, the tubules of which they ſuppoſe to reſemble the figure of the body of the ſcolopendra.

SCOLOPENDRIUM, in *Botany*, a name applied by the ancients to ſeveral herbs, whoſe long hairy ſtems, or roots with numerous fibres, bore ſome reſemblance to the inſect called Σκολοπενδρα, *Scolopendra*, or Forty-foot. It has remained with the fern called *Lingua Cervina*, or Harts'-tongue, as a ſpecific name, and is retained as a generic one for the ſame plant, on its being ſeparated from *Aſplenium*, by the writer of the preſent article.—Sm. Mem. de l'Acad. de Turin, v. 5. 410. t. 9. f. 2. Tracts, 236. t. 1. f. 2. Fl. Brit. 1133. Swartz Fil. 89. Willd. Sp. Pl. v. 5. 348. Ait. Hort. Kew. v. 5. 518.—Claſs and order, *Cryptogamia Filices*; ſect. *annulatæ*. Nat. Ord. *Filices dorſiferæ*.

Eſſ. Ch. Fructification in ſcattered double lines, between two veins. Involucra originating from each vein, continued, folding over each other; at length ſeparating longitudinally.

1. S. *vulgare*. Common Hart's-tongue. Sym. Syn. 193. Engl. Bot. t. 1150. (Scolopendria vulgaris; Trag. Hiſt. 549. S. officinarum; Swartz. n. 1. Willd. n. 1. Aſplenium Scolopendrium; Linn. Sp. Pl. 1537. Bolt. Fil. 18. t. 11. Curt. Lond. faſc. 1. t. 67. Woodv. Suppl. t. 272. Phyllitis; Ger. Em. 1138. Matth. Valgr. v. 2. 186. Camer. Epit. 579.)—Frond ſimple, tongue-ſhaped; heart-ſhaped at the baſe; ſmooth at the back.—Common in moiſt ſhady places, on rocks, walls, or banks; but more eſpecially about the mouths of caves, deſerted mines, or the borders of wells, where there is a current of cold or moiſt air. It is perennial; the fronds annual, bearing fructification in ſummer. *Root* ſcaly, tufted, ſomewhat creeping. *Fronds* numerous, erect, twelve or eighteen inches high, of a full graſs-green, ſmooth, pliant, lanceolate, acute, waved; occaſionally cloven, or even branched and comoſe, at the top; their *ſtalks*, and back of the *rib*, ſcaly. *Capſules* in an oblique ſeries of parallel lines on each ſide the rib, each line covered with the folding white membranous *involucrum*, and at length ſwelling ſo much, as to turn that covering back on each ſide. *Capſules* innumerable, ſtalked, globoſe, bound by a vertical jointed ring. The name *vulgare*, previouſly publiſhed in Fl. Brit. ought to have been preferred by ſubſequent writers to that of *officinarum*, as the plant is deſtitute of medicinal qualities, and out of uſe.

2. S. *Ceterach*. Common Scaly Spleenwort. Sym. Syn. 193. Roth. Germ. v. 3. 48. Fl. Brit. n. 2. Engl. Bot. t. 1244. (Scolopendria vera; Trag. Hiſt. 551. Ceterach officinarum; Willd. Sp. Pl. v. 5. 136. Grammitis Ceterach; Swartz Fil. 23. Ait. Hort. Kew. v. 5. 503. Aſplenium Ceterach; Linn. Sp. Pl. 1538. Bolt. Fil. 20. t. 12. A. five Ceterach; Ger. Em. 1140. Aſplenium; Matth. Valgr. v. 2. 251. Camer. Epit. 640.)—Frond pinnatifid, lanceolate; ſcaly at the back.—On old walls, or limeſtone rocks; moſt frequent in the north and weſt of England. Common and very luxuriant in the Levant.—*Root* fibrous, black. *Fronds* numerous, from four to ten inches high; ſmooth, and rather glaucous, above; covered beneath with innumerable, lax, lanceolate, tawny, or ſhining brown, ſcales, which cover the lines of *capſules*. On the moſt careful examination, we formerly thought we diſcovered a continued entire *involucrum*, at each ſide of the lines of fructification, but Dr. Swartz and Mr. Brown in Hort. Kew. refer this fern to *Grammitis*, whoſe character is to have no *involucrum*. However this may be, no one ſurely will adopt Willdenow's new genus of *Ceterach*, founded merely on the lines being more or leſs oblique. We have not examined *Ceterach canarienſis* nor *aſpidioides* of this writer. *Aſplenium Hemionitis* of Linnæus, referred to *Scolopendrium* by Swartz, Cavanilles, and others, has nothing of the character of the genus, except when two lines, originating in different lobes, or rudiments of lobes, rarely and accidentally meet in oppoſition to each other. By an attention to this circumſtance, *Aſplenium* may always be known from *Darea*, the *Cænopteris* of Bergius. See DAREA, and correct the error of the preſs, line 22, to Cænopteris.

SCOLOPIA, σκολοπιξ, having the form of a *ſcolopendra*; from σκολοψ, *a ſharp ſtake*, in alluſion probably to the numerous ſtrong thorns of this ſhrub.—Schreb. Gen. 335. Willd. Sp. Pl. v. 2. 981. Mart. Mill. Dict. v. 4. (Limonia; Gærtn. t. 58. Scopolia; Lamarck Illuſtr. t. 423.)—Claſs and order, *Icoſandria Monogynia*. Nat. Ord. *Aurantia*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, in three or four deep, ovate, obtuſe, concave, ſpreading, permanent ſegments. *Cor.* Petals three or four, oblong, rather coriaceous, obtuſe, ſpreading, permanent, twice the length of the calyx. *Stam.* Filaments numerous, thread-ſhaped, ſpreading, permanent, inſerted into the calyx, as long as the corolla, flattened below, villous at the baſe; anthers linear. *Piſt.* Germen ſuperior, roundiſh; ſtyle cylindrical, ſtraight, longer than the ſtamens; ſtigma thick, three-lobed, with three little depreſſions at the top. *Peric.* Berry roundiſh, crowned with the permanent ſtyle, of one cell, with three prominent internal ribs. *Seeds* ſix, roundiſh, ſomewhat quadrangular, tunicated; the tunics membranous, thin, pulpy, angular, attached in pairs to each rib of the berry.

Obſ. The ribs eaſily ſeparate from the berry, and part into ſix unequal threads, from whoſe ſummits the tunics are ſuſpended.

Eſſ. Ch. Calyx inferior, in three or four deep ſegments. Petals three or four. Berry crowned with the ſtyle, of one cell, with ſix tunicated ſeeds.

1. S. *puſilla.* Willd. n. 1. (Limonia puſilla; Gærtn. v. 1. 279.)—Native of Ceylon. We know nothing of the habit of this plant, except that Gærtner conjectures, from the Ceylon name, *Khatu-Kurundu*, attached to the ſpecimen he deſcribed at Leyden, and which means Thorny Cinnamon, that the plant is ſimilar in leaves, and general habit, to Cinnamon, differing in having thorns. If ſo, the ſynonym of Plukenet, quoted by Gærtner, which belongs to Rheede's Hort. Malab. v. 4. t. 14, can have nothing to do with the *Scolopia*, but is to be referred to the *Limonia acidiſſima* of Linnæus, which perhaps is the ſame as Roxburgh's *crenulata;* Ait. Hort. Kew. v. 3. 43. Both of them have pinnate *leaves*, with a winged common *footſtalk*. After all, Koenig's opinion, quoted by Linnæus, of the *Limonia acidiſſima* being a *Cratæva*, induces a ſtrong ſuſpicion of its being our identical *Scolopia*, which would not ill accord with his probable ideas of the character of *Cratæva*. Its parts of fructification however appear eſſentially different from thoſe of either of the above *Limoniæ*, in Roxburgh, Rheede or Rumphius.—Lamarck, who copies Gærtner's figure, has by accident changed *Scolopia* to *Scopolia*.

SCOLOPOMACÆRIUM, in *Surgery*, an inciſion-knife.

SCOLOSANTHUS, in *Botany*, a name of Vahl's, derived by profeſſor Martyn from σκολοψ, *a thorn*, or rather *a ſharp ſtake*, and ανθος, *a flower*. De Theis deduces it from σκολιος, *oblique*, or *twiſted*, ſuppoſing it alludes to the recurved ſegments of the corolla. The former of theſe explanations moſt ſatisfies us, as the author evidently alludes to a circumſtance mentioned in his deſcription, that the thorns themſelves, with which the branches are copiouſly beſet, as with ſharp and ſtrong paliſades, ſometimes bear the flowers.—Vahl. Eclog. v. 1. 11. Willd. Sp. Pl. v. 1. 607. Mart. Mill. Dict. v. 4.—Claſs and order, *Tetrandria Monogynia.* Nat. Ord. *Rubiaceæ*, Juſſ.

Gen. Ch. *Cal.* Perianth ſuperior, of one leaf, in four deep, equal, linear-lanceolate, acute, permanent ſegments. *Cor.* of one petal, tubular, ſeveral times longer than the calyx; tube quadrangular; limb in four equal, deep, ovate, revolute ſegments, about the length of the tube. *Stam.* Filaments four, awl-ſhaped, erect, ſlightly connected with the corolla and with each other, hairy at the baſe; anthers linear, erect, the length of the tube. *Piſt.* Germen inferior, roundiſh; ſtyle capillary, a little longer than the corolla; ſtigmas two, ſmall, obtuſe. *Peric.* Drupa globoſe, ſmooth, ſucculent, crowned with the enlarged calyx. *Seed.* Nut oblong, hard, of one cell.

Eſſ. Ch. Calyx four-cleft, ſuperior. Corolla of one petal, quadrangular, tubular, with a revolute border. Drupa with one ſeed.

1. S. *verſicolor.* Vahl. Eclog. v. 1. 11. t. 10. Willd. n. 1. (Cateſbæa parviflora; Lamarck Illuſtr. t. 67. f. 2.)—Native of Santa Cruz. A branched *ſhrub*, two feet high. The young thorns generally bear *flowers*, after the fall of which they grow to their full ſize. Thoſe *flowers*, however, that are produced by the thorns, are purple and abortive; the axillary ones, of a ſaffron colour, are perfect, and ripen their *fruit*, which is of a pure white.

Vahl diſtinguiſhes from this the *Cateſbæa parviflora* of Swartz Ind. Occ. v. 1. 236. See Willd. Sp. Pl. v. 1. 608.

SCOLUS, in *Ancient Geography*, a town placed by Strabo in the vicinity of Olynthus.

SCOLYMUS, in *Botany*, σκολυμος, the ancient Greek name of a large plant of the thiſtle kind, uſually ſuppoſed to be our Artichoke, ſee CYNARA, is adopted by Tournefort and Linnæus, for a genus of the ſame tribe.—Linn. Gen. 407. Schreb. 536. Willd. Sp. Pl. v. 3. 1630. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 4. 471. Sm. Prodr. Fl. Græc. Sibth. v. 2. 147. Juſſ. 171. Tourn. t. 273. Lamarck Illuſtr. t. 659. Gærtn. t. 157.—Claſs and order, *Syngeneſia Polygamia æqualis.* Nat. Ord. *Compoſitæ ſemi-floſculoſæ*, Linn. *Cichoraceæ*, Juſſ.

Gen. Ch. *Common Calyx* imbricated, ovate, of numerous lanceolate, ſharp-pointed, lax ſcales. *Cor.* compound, imbricated, uniform; florets numerous, all perfect, equal, each of one ligulate, linear, abrupt petal, with five minute terminal teeth. *Stam.* Filaments five, capillary, very ſhort; anthers united into a hollow cylinder. *Piſt.* Germen oblong; ſtyle thread-ſhaped, longer than the ſtamens; ſtigmas two, reflexed. *Peric.* none, except the unchanged calyx. *Seeds* ſolitary, rather oblong, triangular, pointed at the baſe; down none. *Recept.* chaffy, convex; ſcales roundiſh, flat, three-toothed at the ſummit, longer than the ſeeds, which they ſeparate from each other.

Eſſ. Ch. Receptacle chaffy. Calyx imbricated, ſpinous. Down ſcarcely any.

Obſ. *S. grandiflorus* only has briſtles at the top of each ſeed.

1. S. *maculatus.* Annual Golden Thiſtle. Linn. Sp. Pl. 1143. Willd. n. 1. Ait. n. 1. Sm. Fl. Græc. Sibth. t. 824, unpubliſhed. (S. chryſanthemus annuus; Dodart Mem. 613. t. 29. S. Theophraſti narbonenſis; Cluſ. Hiſt. v. 2. 153. Carduus chryſanthemus narbonenſis; Ger. Em. 1155.)—Stem winged, toothed. Upper leaves even, and nearly ſmooth. Flowers from the forks of the branches.—Native of the ſouth of Europe and north of Africa, on ſunny ſandy banks, and among rubbiſh, flowering in ſummer. The *root* is annual. *Stem* much branched, three feet high, winged with ſeveral rows of a leafy border, furniſhed with copious ſpinous teeth; the ribs and edges white. *Radical leaves* obovate, ſlightly lyrate, roughiſh, bordered with nearly uniform ſpinous teeth; *ſtem-leaves* ſolitary under each branch, ſeſſile, recurved, pinnatifid, ſtrongly ſpinous. *Flowers* from the forks of the crowded upper branches, ſolitary, an inch and half broad, beſet with copious ſpinous leaves. *Corolla* of a golden yellow. *Calyx-ſcales* bordered with white.

2. S. *hiſpanicus.* Perennial Golden Thiſtle. Linn. Sp. Pl. 1143. Willd. n. 2. Ait. n. 2. Sm. Fl. Græc. Sibth. t. 825, unpubliſhed. Mill. Ic. t. 229. (S. Theophraſti hiſpanicus; Cluſ. Hiſt. v. 2. 153. Carduus chryſanthemus hiſpanicus; Ger. Em. 1155.)—Leaves rough, with minute briſtles, decurrent; the midrib hairy. Flowers at the ends of ſhort leafy branches.—Native of the ſouth of Europe and north of Africa. Dr. Sibthorp found this ſpecies extremely common in Greece, and the circumjacent iſlands; and judged it to be the σκολυμος of Dioſcorides, ſuch being its denomination, variouſly corrupted, among the preſent inhabitants of Greece. The *root* is perennial; Willdenow thought it biennial, though he does not appear to have ſeen it alive. The *ſtem* is not ſo much branched, immediately from

the baſe, as in the laſt ; the *leaves* are rougher, ſtrongly decurrent, in a tapering manner, the *branches* not being ſo uniformly and uninterruptedly winged. *Flowers* much like the former in ſize and colour, numerous, each at the end of a ſmall lateral branch, not axillary.

3. S. *grandiflorus*. Large-flowered Golden Thiſtle. Desfont. Atlant. v. 2. 240. t. 218. Willd. n. 3.—Stem ſcarcely branched, villous, winged. Flowers lateral, ſolitary, ſeſſile.—Native of Egypt and Barbary, very common in uncultivated fields, flowering early in the ſpring. *Root* perennial. *Leaves* narrower than in either of the former. *Flowers* twice as large. *Seeds* crowned with two or three brittle deciduous briſtles, an exception to the generic character. The plant is milky. The Arabs eat the ſtalks, either raw or boiled.

SCOLYMUS, in *Natural Hiſtory*, a ſpecies of *Murex;* which ſee.

SCOLYTES, in *Entomology*, a ſpecies of *Boſtrichus*, which lodges under the bark of the elm, and is very deſtructive.

SCOMBER, the *Mackarel*, in *Ichthyology*, a genus of fiſhes of the order Thoracici, of which the generic character is; head compreſſed and ſmooth; body ſmooth; the lateral line carinate behind; between the dorſal fin and tail are frequently ſeveral ſpurious fins. There are twenty-two ſpecies, in three diviſions, which are diſtinguiſhed either by having or not having ſpurious fins; and thoſe that have ſpurious fins are divided into thoſe that have them diſtinct and connected.

A. *Spurious Fins diſtinct.*

Species.

* SCOMBER; Common Mackarel. This has five ſpurious fins; is marked with numerous tranſverſe black lines; and has a ſilvery abdomen. This very beautiful fiſh is a native of the American ſeas, generally appearing at ſtated ſeaſons, and ſwarming, in vaſt ſhoals, round particular coaſts; but its great reſort is within the arctic circle, where it reſides in innumerable troops, grows to a larger ſize than elſewhere, and is ſuppoſed to find its favourite food, conſiſting chiefly of marine inſects, in far greater plenty than in the warmer latitudes. In the ſeverity of winter it is ſaid to be imbedded in the ſoft mud, beneath the vaſt cruſts of ice ſurrounding the polar coaſts, being thus ſufficiently protected from the effects of the froſt; and on the return of ſpring, it is generally believed to migrate in enormous ſhoals, of many miles in length and breadth, and to viſit the coaſts of more temperate climates, in order to depoſit the ſpawn. Its route has been deſcribed as ſimilar to that of the herring, paſſing between Iceland and Norway, and proceeding towards the northern part of our iſland, where a part throws itſelf off into the Baltic, while the grand column paſſes downwards, and enters the Mediterranean through the ſtraits of Gibraltar. It muſt, however, be noticed, that this theory is ſubject to diſpute, and by ſome writers it is thought more probable that the ſhoals which appear in ſuch abundance round the more temperate European coaſts, in reality reſide during the winter at no very great diſtance; immerſing themſelves in the ſoft bottom, and remaining in a ſtate of torpidity, from which they are awakened by the warmth of the returning ſpring, and gradually recover their former activity. In proof of this theory, it is ſaid that at their firſt appearance their eyes are obſerved to appear remarkably dim, as if covered with a kind of film, which paſſes off as the ſeaſon advances, when they are ſeen in their full perfection of colour and vigour. The length of the mackarel is from ten to fifteen inches; but in the Northern ſeas it is ſtill larger: the colour of this fiſh, on the upper parts, as far as the lateral line, is a rich deep blue, accompanied by a varying tinge of green, and marked by numerous black, tranſverſe ſtreaks, which in the male are nearly ſtraight, but in the female beautifully undulated; the jaws, the gill-covers, and abdomen, are of a bright ſilver-colour, with a ſlight varying caſt of gold-green along the ſides, which are generally marked by a row of long duſky ſpots; the ſcales are very ſmall, oval, and tranſparent; the ſpurious fins are ſmall, and five in number, both above and below. The ſhape of the mackarel is ſo elegant, as to be regarded as one of the moſt beautiful of European fiſhes. As an article of food, its value has been maintained through a long ſucceſſion of ages. It was highly eſteemed by the ancients, who prepared from it the particular ſauce known to the Romans by the name of *garum*, and which was made by ſalting the fiſh, and after a certain period ſtraining the liquor from it. This preparation is now, and has been for a long time, ſuperſeded by the introduction of the anchovy for ſimilar purpoſes. The garum is, however, ſtill in faſhion at Conſtantinople; it was formerly prepared from various kinds of fiſhes, but that procured from the mackarel was always deemed preferable: the beſt was ſaid to be manufactured at Carthagena, vaſt quantities of mackarel being taken near an adjacent iſle, called from that circumſtance *Scombraria*. (See GARUM.) The mackarel is eaſily ſnared by a variety of baits; but the capture is ſaid to ſucceed beſt in a gentle gale of wind. See FISHERY.

COLIAS. The body of this ſpecies is varied with fine green and blue. It inhabits about the coaſts of Sardinia. It is nearly allied to the common mackarel, but is ſmaller.

JAPONICUS, or Blueiſh Mackarel, with five ſpurious fins. It is alſo nearly allied to the common mackarel, ſo much ſo as to lead authors to doubt if it be a diſtinct ſpecies. It inhabits near the Japan iſlands; is ſhaped more like a herring, and is not above eight inches long; the ſcales are very ſmall; each jaw is ciliate with teeth, and the head is ſilvery.

AURATUS. This is denominated the gold-coloured mackarel, with five ſpurious fins. It is very like the common mackarel, but differs in colour, as well as in the number of rays in the anal fin, which amounts to ſix only. It is a native of the Japaneſe ſeas.

ALATUNGA. The pectoral fins are very ſmall; it has ſeven ſpurious fins. It inhabits the Mediterranean, appearing in conſiderable ſhoals, and is in high eſtimation as an article of food: it is periodical and migratory.

PELAMIS. The ſpurious fins in this ſpecies are ſeven; the body has four black lines on each ſide. It inhabits between the Tropics and the Atlantic.

* THYNNUS; Thunny or Tunny. In this the ſpurious fins are from eight to eleven. It is found in moſt ſeas, and is from two to ten feet long; the body is ſpindle-ſhaped and ſilvery; above it is of a ſteel-blue colour, and a little convex; it is extremely voracious, and ſwims with great velocity; it ſpawns in May or June, and periodically frequents the ſhores of the Mediterranean in vaſt ſhoals, ſwimming in a regular parallelogram, and making a prodigious hiſſing noiſe. It is an animal of great ſtrength and fierceneſs, preying on all kinds of ſmaller fiſhes, and is ſaid to be the peculiar perſecutor of the mackarel and the flying-fiſh. Its fleſh is coarſe, but was much eſteemed by the ancient Greeks and Romans, who eſtabliſhed their tunny fiſheries, as in modern times, on many parts of the Mediterranean coaſts, where this fiſh ſtill

continues to be taken in great plenty, more eſpecially round the iſland of Sicily. In the Britiſh ſeas it is rarely obſerved in ſhoals; the individuals which occur being rather conſidered as accidental ſtragglers. In the Indian ocean this ſpecies is ſaid to be ſeen of an enormous ſize, and to aſſemble in vaſt ſhoals. According to Pliny, the fleet of Alexander the Great was impeded in its progreſs by a ſhoal of tunnies, and ſo ſtrongly wedged together, that he found it neceſſary to diſpoſe his ſhips in battle array, in order to force through the oppoſing phalanx of fiſhes. The tunny fiſhery is of equal importance to the inhabitants of the countries on the Mediterranean coaſts, as the herring fiſhery is to thoſe of the more northern parts of Europe. The ſmaller fiſhes are chiefly ſold freſh, while the larger are cut to pieces, ſalted, and barrelled up for ſale.

The general colour of the tunny is a dark or dull blue on the upper parts, and ſilvery, with a caſt of fleſh-colour, on the ſides and abdomen; the firſt dorſal fin and the tail are of a deep grey, the ſecond, together with the pectoral, ventral, anal, and ſpurious fins, yellow; the pectoral fins are of a lanceolate ſhape, and the tail pretty ſtrongly lunated; the ſpurious fins vary in number, in different ſpecimens, and conſequently can afford no ſpecific mark.

CORDYLA. In this the ſpurious fins are ten in number; the lateral line is mailed with bony plates; it inhabits the American coaſts; the body is compreſſed and broad.

FULVO-GUTTATUS. This has a ſingle two-rayed ſpurious fin before the anal. It is found on the Arabian coaſts; the body is of a ſhining pale blue, with golden ſpots at the ſides; the crown is hollow before the eyes; the iris is golden; from the head to the dorſal fin is a poliſhed, naked, glaucous membrane; the lateral line is arched at the beginning; the firſt dorſal fin, when folded, is hid in a cavity; the ventral is approximate; the tail is very widely arched in an obtuſe angle.

B. *The Fiſhes of this Diviſion are without ſpurious Fins.*

Species.

GLAUCUS. The ſpecific character of this is, that the dorſal ſpines are recumbent. It is found chiefly near Aſcenſion iſland, hence it is named by ſome naturaliſts S. aſcenſionis. The ſecond ray of the dorſal fin is extremely long.

SPECIOSUS. Pale golden; bands on the crown oblique; on the body are ſeven black alternate bands. This is found on the coaſts of Arabia; the body is oval-lanceolate, it has no teeth, above it is brown, beneath pale; the ſcales are ſmall, entire, deciduous; the crown is convex, naked, ſmooth; the iris is ſilvery and golden on the fore-part; the lips are equal, obtuſe, the upper one is protractile; the gill-covers are of three pieces, the anterior is ſcaled and the poſterior naked; the lateral line nearer the back is arched at the beginning, and ſtraight from the fifth band; the fins are yellow and the tail bifid.

FERDAU. This is oblong-oval, ſilvery, with golden dots on the ſides; the body is marked with five obſolete tranſverſe brown bands. There is a variety of this ſpecies, of which the pectoral fins are hyaline. It inhabits Arabia; the body above is blueiſh; the ſcales are ſmall and deciduous.

IGNOBILIS. Silvery; the back is blueiſh; the pectoral and ventral fins are reddiſh. It inhabits Arabia; the ſcales are ſmall and deciduous; before the anal fin there are two ſpines, connected into a ſpurious fin; the poſterior ſpine is twice as large as the firſt.

SANSUM. Shining ſilvery, without ſpots; the tail with an elevated equal ridge. It inhabits Arabia, and very much reſembles the S. fulvo-guttatus. The crown has branched veins; each jaw with a row of teeth, the upper with numerous ſetaceous ones behind them; the ventral and pectoral fins are white, the reſt brown; the dorſal one is black on the upper edge; the anal and caudal are yellow on the lower edge.

ALBUS. White; ſides and tail yellow. This inhabits the Red ſea; the body is lanceolate, covered with fixed ſcales; before the anal fin there are two ſpines connected into a ſmall fin; the hinder ſpine is the longer.

FALCATUS. Body rhomboidal; the ſecond dorſal and anal fins are falcate. This ſpecies is found in the Red ſea; the body is half as long again as it is broad; it is ſmooth, ſilvery, and the upper part is brown; the ſcales are thin, fixed, elevated at the tip; under the ſkin in the middle of the back are a few ſpines reaching to the dorſal fin, and before them a ſtrong horizontal ſpine turned forwards and ſometimes hidden under the ſkin, and before the anal fin are two ſpines.

FILAMENTOSUS. The breaſt of this is naked; the ſecond dorſal and anal fins are filamentous. It inhabits Sumatra; the body is ſilvery; above it is blueiſh; the ſcales are ſmall and fixed.

C. *In this Diviſion the ſpurious Fins are connected.*

Species.

* TRACHURUS; the Scad, or Horſe Mackarel. The dorſal ſpine is recumbent; the lateral line prickly. This fiſh inhabits the European, American, and Pacific ſeas, and is from four inches to two feet long; the body is ſilvery; the front and back is of a mixed green and blue colour; the fiſh is long, compreſſed, and covered with thin, round, ſoft ſcales; the fleſh is eatable, but tough. It is found frequently on our own coaſts.

HIPPOS. Gill-covers with a black ſpot on the hind-part; the poſterior dorſal fin is red; the ventral and anal are yellow. This ſpecies inhabits Carolina and Otaheite. The teeth are in one row, the two front ones are larger; the lateral line bends very much; it is ſomewhat ſpiny or mailed as it approaches the tail; the dorſal fin is red; the ventral and anal are yellow.

CHRYSURUS; Yellow-tailed Mackarel. The ſpurious fins are of a pale yellow, the mouth is without teeth. It inhabits Carolina; the ſpines before the anal fin are remote.

AMIA. The laſt ray of the poſterior dorſal fin is the longer.

PELAGICUS. The ſpurious fins and dorſal, in this ſpecies, are connected into one.

SCOMBRARIA, in *Ancient Geography*, a promontory of Spain, in the Tarragonenſis, upon the coaſt of the Conteſtani, between New Carthage and the mouth of the Tader. Ptolemy.

SCOMBRARIA, in *Geography*, a ſmall iſland in the Mediterranean, at the entrance into the harbour of Carthagena.

SCOMBROARIA, or SCOMBRARIA, in *Ancient Geography*, an iſland on the coaſt of Spain, 80 ſtadia from New Carthage.

SCOMIUS, the name of a part of mount Hæmus, in the vicinity of Rhodope, and N. of it. The river Strymon took its ſource in this mountain.

SCONCES, ſmall forts, built for the defence of ſome paſs, river, or other place.

Some ſconces are made regular, of four, five, or ſix baſtions; others are of ſmaller dimenſions, fit for paſſes, or rivers; and others for the field. See FORT.

SCONE, or SCOON, in *Geography*, a village in a pariſh of the ſame name, in Perthſhire, Scotland, is ſituated at the diſtance of a mile and a half north from the town of Perth. Though reduced to comparative inſignificance, it was anciently of great diſtinction, the chief ſeat of the Scottiſh monarchs, and the place where the ſtates of the nation met to deliberate on all important occaſions. Some writers aſſert, that it was alſo the capital of the Pictiſh dominions. Kenneth II. removed hither from Argyle the ſtone chair which the kings of Scotland occupied during the ceremony of coronation. On a tumulus ſtill in exiſtence they held their courts of juſtice, and promulgated laws. Here they ſat to determine the pleas of their barons, whence the hill was denominated "Mons Placiti de Scona, Omnis Terra, or the Mote Hill of Scone." It is uſually called by the vulgar Boothill, from a tradition that at the "coronation of a king, every man who aſſiſted, brought ſo much earth in his boots, that every man might ſee the king crowned ſtanding on his own land." It has been ſaid that Malcolm II., ſeated in the inaugural chair on this mount, "gave and diſtributed all his lands of the realm of Scotland among his men, and reſerved nothing in propertie for himſelf, bot the royall dignitie, and the Mutehill in the towne of Scone." This diſtribution, however, as Guthrie juſtly remarks, ought to be taken in a limited ſenſe, it being incredible, that any prince ſhould totally diveſt himſelf of all his royal demeſnes. It is moſt probable, therefore, that it referred to ſome general confirmation to his barons of the grants of their lands, which before that they probably held precariouſly, and at the will of the crown.

An abbey was founded at this place by Alexander I., in the year 1114, and was dedicated to the Holy Trinity and St. Michael; but long previous to that period, Buchanan and other authors affirm, that its ſcite was occupied by a Culdee monaſtery, and their ſtatement is far from improbable, as it does not ſeem likely, that a place of ſo much celebrity as Scone ſhould have been deſtitute of ſome religious eſtabliſhment till the era of Alexander's foundation. The inmates of the new building were canons regular of the order of St. Auguſtine, and were entruſted with the cuſtody of the "fatal ſtone, the palladium of the Scottiſh monarchy," which was carried off by king Edward I. and ſtill remains in Weſtminſter Abbey church. The annual revenues of this abbey, even ſo late as the time of the reformation, were very conſiderable, amounting to 1140*l.* 6*s.* 6*d.* Scots, beſides "16 chaldrons and 2 firlots of wheat, 73 chaldrons, 13 bolls, 2 firlots, and 2 pecks of beave; 62 chaldrons of meal, 18 chaldrons and 3 bolls, and 1 laſt of ſalmon." The buildings of the abbey were very extenſive and magnificent. Connected with them was the palace where the Scottiſh monarchs reſided when at Scone; the whole being encloſed by a wall compriſing within it an area of twelve acres. Both the abbey and palace were burnt to the ground by a fanatical mob, during the fury of the reformation; ſo that ſcarcely any traces of them can now be diſcovered, and even the ſcite of the palace is uncertain. It is ſuppoſed, however, that part of it at leaſt lies under the preſent palace, the ſeat of the earl of Mansfield. This ſtructure was begun by the earl of Gowrie, and was finiſhed by ſir David Murray of Goſpatrick, (the favourite of king James VI.), to whom that monarch had granted it; and the new poſſeſſor, in gratitude, put up the royal arms in ſeveral parts of the houſe. It is in the mixed ſtyle of architecture generally prevalent in the ſeventeenth century, both in England and Scotland. The length of it in front is about ſeventy yards, and its depth about thirty. The gallery, which looks towards the eaſt, meaſures one hundred and forty feet long, and has a ceiling of arched timber-work. "On the one ſide of it is painted the hunting of a ſtag in all its different ſtages; on the other are repreſented the exerciſe of hawking, the hunting of the wild boar, and the wild bull. It is ſaid that king James VI. appears in every ſcene; and that the groups of figures attending him are the nobles of the court, and that all of them are exact repreſentations of the originals. The ſpaces between the different ſcenes are filled up with the arms of the family, with fruit and flower-pieces, and other ornaments." In a chamber adjoining this gallery, on the north, is a canopy of ſtate, uſed by the ſecond earl of Mansfield, when ambaſſador at the court of Verſailles; and in another, called the king's room, is a curious old bed of orange-coloured damaſk ſattin, and ſeveral antique chairs. A third room, on the weſt ſide of the houſe, is named the queen's room, and contains a bed of flowered crimſon velvet, ſaid to have been the work of Mary queen of Scots, while a priſoner in the caſtle of Loch Leven. All theſe chambers are decorated with hangings of fine tapeſtry, and with portraits of the anceſtors of the family, and other perſonages of celebrity. In the dining-room, a ſpacious and elegant apartment, are two full-length portraits of their preſent majeſties.

The poſition of this houſe is in the midſt of an extenſive lawn, ſloping gradually towards the river Tay, which flows gently beneath. Except on the ſouth-weſt, it is ſhaded by a grove of young trees, intermixed with ſome old ones, which rank among the largeſt in Scotland. On all ſides, but particularly to the weſtward, it commands very fine proſpects. "On the left hand, at the diſtance of two or three miles, the hills above the Tay and the Earne ſeem to unite, forming a vaſt theatre decorated with plantations and corn-fields. On the right, at the diſtance of fifteen miles, the Grampian mountains aſſume a ſimilar form, and in the middle, induſtry and ſkill have given a gay and cultivated aſpect to a very extenſive tract of country."

Some years after the deſtruction of the abbey, an elegant pariſh church was erected on the top of the Mote-hill, by the firſt viſcount Stormont; but that ſtructure being much out of repair, and too ſmall for the pariſh, the preſent church was erected about thirty years ago in the village. In an aiſle of the old church, which is ſtill ſtanding, are ſeveral handſome monuments to the memory of members of the Murray family. One of them, commemorating the founder, merits deſcription. It is compoſed wholly of marble, and ſeems to have been deſigned to repreſent the interior of a chapel. In the middle, towards the lower part of it, is a ſtatue of his lordſhip as large as life, clad in armour, kneeling on a cuſhion before an altar, a book lying open before him, and the palms of his hands joined, as if earneſtly engaged in devotion. On each ſide ſtands the figure of a man in armour, ſomewhat ſmaller than the life; the one ſaid to be the marquis of Tullebardine, and the other the earl mareſchall; above theſe are ſeveral emblematical figures; towards the top are the arms of the family, and over all, the figure of an angel.

Scone pariſh extends three Engliſh miles in every direction, compriſing about 4600 Scots acres, of which 3000 are under tillage, and 700 planted. The ſoil, though various, is in general extremely fertile; and the air is ſo dry and ſalubrious, that Scone has been ſtyled the Montpellier of Perthſhire. Here are ſeveral quarries of excellent free-ſtone for building; alſo an extenſive bleaching-field, called Stormont Bleach-field, which is connected with the Tay by a canal three miles in length. The other principal employment of the inhabitants, beſides agriculture, is the linen manufacture, which gives work to about ſeventy weavers. According to the late parliamentary returns (1811), this pariſh contains

318 houſes, and 1953 inhabitants, of whom 500 reſide in the village, which conſiſts of two wide interſecting ſtreets, and ſeveral lanes.

The remains of antiquity here, independent of thoſe above mentioned, are two ſtone circles, placed within fourteen yards of each other, near the eaſtern boundary of the pariſh ; a part of the Roman military way from the camp of Ardoch to the foot of the Grampians ; the foundations of the ancient town of Bertha, and a fortification called Silver Caſtle, the hiſtory of which is unknown. The veſtiges of the houſe of the famous John Hay, chief of the Hays, are ſtill religiouſly preſerved, and are pointed out by the inhabitants with exultation, that their pariſh ſhould have given birth to a man, whoſe heroic conduct, aided by that of his ſons and followers, retrieved the diſaſters of the field of Lancarty, and changed the inglorious flight of the Scottiſh army into a deciſive victory.—Scone alſo boaſts of having been the birth-place of the celebrated earl of Mansfield, lord chief juſtice of the court of king's bench.

For notices of the more important hiſtorical events which have occurred at Scone, the reader is referred to the article SCOTLAND.—The Statiſtical Account of Scotland, by Sir John Sinclair, Bart. vol. xviii. 8vo. 1796. Pennant's Tour through Scotland, vol. iii. 4to. Lond. 1790. Beauties of Scotland, vol. iv. 8vo. 1806. Carliſle's Topographical Dictionary of Scotland, 2 vols. 4to. Lond. 1813.

SCOODIAK, a river of America, which bounds the province of Maine on the ſide of New Brunſwick, and runs into the Paſſamaquady bay, N. lat. 45° 10′. W. long. 67°.

SCOONIE, a town of Scotland, in the county of Fife ; 10 miles S.W. of St. Andrews.

SCOOP, in *Sea Language*, a ſmall hollowed piece of wood, or a ſmall box open at one end and at top, with a long handle fixed obliquely into its cloſed end ; and uſed to throw water out of a boat into the ſea, uſually called bailing the boat ; or on other occaſions, when it is required to empty any hole or place of water.

SCOOP-*Wheel*, a machine uſed in China for lifting water upon the banks of rivers for agricultural purpoſes. Theſe wheels, which are common in the ſouthern provinces, are made entirely of bamboo ; they are put together without a nail, and are from fifteen to forty feet in diameter. They come neareſt to the Perſian or bucket-wheel, but are materially different in the principle and conſtruction. A wheel thirty feet in diameter will lift, in the courſe of twenty-four hours, near 70,000 gallons of water. Sir George Staunton has given a figure of it in the folio volume of plates annexed to his "Chineſe Embaſſy."

SCOPAMENE, in *Geography*, a town of the department of Liamone, in the iſland of Corſica, and chief place of a canton, in the diſtrict of Sartene.

SCOPARIA, in *Botany*, ſo called from *ſcopæ*, a broom, becauſe the plant is uſed, in the Weſt Indies, for making brooms.—Linn. Gen. 58. Schreb. 77. Willd. Sp. Pl. v. 1. 652. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 1. 257. Brown Prodr. Nov. Holl. v. 1. 443. Juſſ. 118. Lamarck Illuſtr. t. 85. Gærtn. t. 53.—Claſs and order, *Tetrandria Monogynia.* Nat. Ord. *Perſonatæ*, Linn. *Scrophulariæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, concave, in four deep, narrow, rough, equal ſegments. *Cor.* of one petal, wheel-ſhaped, ſpreading, concave, in four deep tongue-ſhaped, obtuſe, equal ſegments ; bearded at the throat. *Stam.* Filaments four, equal, awl-ſhaped, ſhorter than the corolla ; anthers ſimple, roundiſh. *Piſt.* Germen ſuperior, globoſe ; ſtyle awl-ſhaped, the length of the corolla ; ſtigma abrupt. *Peric.* Capſule nearly globular, pointed, with two cells and two valves ; partition membranous, parallel with the valves, bordering the central column. *Seeds* ſeveral, minute, obovate.

Eſſ. Ch. Calyx in four deep equal ſegments. Corolla wheel-ſhaped, deeply four-cleft. Capſule globular, with two cells, two valves, and many ſeeds.

1. S. *dulcis.* Sweet Scoparia. Linn. Sp. Pl. 168. Willd. n. 1. Ait. n. 1. Br. n. 1. Jacq. Amer. 17. (Veronica americana erecta fruteſcens et ramoſa, folio verbenæ ; Herm. Parad. 241, with a plate. V. fruticoſa erecta dulcis, hexangulari caule, flore dilutè cæruleo ; Sloane Jam. v. 1. 195. t. 108. f. 2.)—Leaves three together. Flowers ſtalked.—Common throughout the Weſt Indies, in waſte ground, dry fields, &c. Mr. Brown met with it alſo in the tropical part of New Holland. The plant has long been known in our greenhouſes or ſtoves, but being an annual, of no great beauty, is not generally cultivated. It flowers all ſummer long. The *ſtem* is very buſhy, angular. *Leaves* ſtalked, an inch long, light green, ſmooth, coarſely and bluntly ſerrated, tapering at the baſe. *Flowers* very numerous, axillary, ſolitary, on ſhort ſlender ſtalks, ſmall, white. *Capſule* the ſize of hemp-ſeed. Sloane ſays the leaves have a ſweet taſte, like liquorice, whence the name of Wild Liquorice, or Sweet Weed, by which this herb is known in Jamaica. He adds, that three ſpoonfuls of the expreſſed juice of theſe leaves, evening and morning for three days, is counted an infallible remedy for any cough.—Mr. Browne ſuſpects this to be the only genuine ſpecies of its genus. The two following are referred to the ſame by authors.

2. S. *procumbens.* Procumbent Scoparia. Jacq. Amer. 18. Linn. Sp. Pl. 168. Willd. n. 2.—Leaves four together. Flowers ſeſſile.—Native of the ſandy ſea-coaſt near Carthagena. Scarcely ſix inches long, like the former in habit, but the *ſtems* are forked, and nearly procumbent. *Leaves* ſmall, four together, awl-ſhaped, rather rigid ; the two oppoſite ones interior, and a little the ſhorteſt. *Flowers* ſmall, white, ſeſſile, axillary, and in the forks of the ultimate branches. Tube of the *corolla* fringed in the upper part, but there are no hairs at the baſe of the ſegments ; otherwiſe the fructification agrees in character with the foregoing. *Jacquin.*

3. S. *arborea.* Tree Scoparia. Linn. Suppl. 125. Willd. n. 3. Thunb. Prodr. 29.—Leaves oppoſite, nearly entire ; hoary beneath. Panicle corymboſe, repeatedly compound, many-flowered.—Found by Thunberg, at the Cape of Good Hope. A *tree*, with the habit of an *Olea* or *Phillyrea.* *Branches* quadrangular. *Leaves* certainly oppoſite, whatever Thunberg or the younger Linnæus may ſay to the contrary, each two or three inches long, entire, or obſcurely crenate, ſtalked ; ſmooth and ſhining above ; white and downy beneath. *Panicle* terminal, of innumerable ſmall *flowers.* *Stalks* angular, bracteated, hoary as well as the *calyx*, which has four angles, and four expanded teeth.

SCOPAS, in *Biography*, an eminent Grecian artiſt of the iſle of Paros, flouriſhed in the year before Chriſt 430. He was equally diſtinguiſhed as a ſtatuary and ſculptor, and was the author of many works which placed his name on a level with thoſe of Phidias and Praxiteles. One of the columns in the temple of Epheſus was his performance ; alſo one of the four ſides of the famous tomb of Mauſolus. Rome poſſeſſed ſeveral fine works the productions of Scopas, among which the moſt admired was the great group of Neptune, and other marine deities in the Flaminian circus, which, of themſelves, might, according to Pliny, have been the labour of a whole life. The ſame writer ſpeaks of a Venus the work of Scopas, ſurpaſſing that of Praxiteles. Horace, in one of his odes, refers to Scopas as an artiſt at the head of his profeſſion:

> " —— Divite me ſcilicet artium
> Quas aut Parrhaſius protulit, aut Scopas
> Hic ſaxo, liquidis ille coloribus
> Solers nunc hominem ponere, nunc Deum."
> Horat. Od. 8. lib. iv.

SCOPELISMUS, σκοπελισμος, an audacious crime practiſed by ſome villains among the Arabians.

It conſiſted in placing a certain number of ſtones upon the farm or field of perſons theſe miſcreants had a pique at; which ſtones ſerved as a denunciation of utter deſtruction to thoſe, who for the future ſhould attempt to till the ground on which they were laid. And ſuch terror attended this malevolent and clandeſtine threatening, that none ever ventured to till ſuch fields.

SCOPELO, and more commonly written *Scopoli*, the *Scopelos* of the ancients, in *Geography*, the principal of a group of iſlands in the Grecian Archipelago, ſituated near the coaſt of Great Greece. It is fertile, and would be an agreeable abode, if it ceaſed to loſe, through the viciouſneſs of its adminiſtration, the ſavours laviſhed on it by nature. The wine of Scopoli is ſtill one of the beſt of the Archipelago; but a ſtrong flavour of tar renders it unpalatable to many. Off the town, or rather the village, ſhips find a harbour, which is not very ſafe; they in general prefer the anchorage of a great road, formed by a few ſhoals, and the iſland of Scopoli. N. lat. 39° 26′. E. long. 23° 52′.

SCOPELOS, in *Ancient Geography*, an iſland of the Ægean ſea, near the coaſt of Macedonia, 2 leagues from Sciathus, and 6 leagues N. of the iſle of Eubœa.

SCOPELUS, a town of Aſiatic Sarmatia, upon the river Varadanus. Ptolemy.

SCOPEN, in *Geography*, a town of Pruſſia, in the palatinate of Culm; 12 miles S.E. of Culm.

SCOPER-HOLES, or SCUPER-HOLES, in a *Ship*. See SCUPPERS.

SCOPIUM, in *Ancient Geography*, a town of Greece, in Theſſaly, according to Polybius.

SCOPIUS, a mountain of Macedonia.—Alſo, a river of Aſia, in Bithynia.

SCOPOLIA, in *Botany*, was named by the writer of this article, in memory of his worthy friend John Anthony Scopoli, the celebrated author of the *Flora Carniolica*, *Entomologia Carniolica*, *Deliciæ Inſubricæ*, and many other learned works in every department of natural hiſtory. Jacquin and Linnæus, who well knew his merits, had long ago inſcribed a plant to his honour, which proved a ſpecies of *Hyoſcyamus*. The younger Linnæus choſe another, which on more careful examination was found to be a *Daphne*. The *Scopolia* of Forſter has been changed by himſelf, or his ſon, to *Griſelinia*, becauſe the latter ſuppoſed the genus of the younger Linnæus to be well founded. The poſſeſſor of the Linnæan herbarium therefore, in publiſhing the *Scopolia* of the *Supplementum* by the name of *Daphne pendula*, Pl. Ic. ex Herb. Linn. t. 34, was anxious to eſtabliſh another; and ſelected, for that purpoſe, what Juſſieu and Lamarck had called by an inſufferably barbarous, as well as inappropriate, name, *Toddalia*, and Schreber had dedicated to profeſſor Crantz, though Swartz had already publiſhed a *Crantzia*. In publiſhing this preſent *Scopolia*, occaſion was taken to commemorate the unfortunate fate of Scopoli, who, after ſome domeſtic chagrin, and much public perſecution, died Profeſſor of Botany at Pavia, May 8, 1788. He had been concerned with all the moſt eminent men of that univerſity, Volta, Fontana, and others, in detecting the miſconduct of their colleague, the celebrated Spallanzani, who had robbed the public muſeum. But the emperor, loth to diſmiſs ſo able a profeſſor, contented himſelf with a perſonal rebuke at Vienna to the culprit, and his accuſers were ſilenced, in a manner which honeſt men could ill brook, and which was ſuppoſed to have cauſed the death of Scopoli. The ſurvivors told their ſtory, as explicitly as they durſt, in a circular letter to the learned of Europe.—Sm. Pl. Ic. ex Herb. Linn. faſc. 2. p. 34. Willd. Sp. Pl. v. 1. 1115. Ait. Hort. Kew. v. 2. 23. (Crantzia; Schreb. Gen. 143. Toddalia; Juſſ. 371. Lamarck Dict. v. 7. 692. Illuſtr. t. 139.)—Claſs and order, *Pentandria Monogynia*. Nat. Ord. *Terebintaceæ*, Juſſ. Rather perhaps *Rutaceæ*.

Gen. Ch. *Cal.* Perianth of one leaf, inferior, ſmall, in five deep, ovate, acute, concave, ſpreading, permanent ſegments. *Cor.* Petals five, oblong, ſeſſile, erect, bluntiſh, concave, keeled at the upper part behind. Nectary none. *Stam.* Filaments five, awl-ſhaped, erect, oppoſite to the petals, and rather longer, dilated and triangular at the baſe; anthers roundiſh, incumbent. *Piſt.* Germen ſuperior, roundiſh, with five furrowed lobes; ſtyle ſcarcely longer than the germen, furrowed lengthwiſe, ſwelling in the middle; ſtigma three-lobed, obtuſe. *Peric.* Capſule of five cells, nearly globoſe, dotted, with a ſucculent coat, ſome of the cells often abortive. *Seeds* ſolitary, oblong, ſomewhat kidney-ſhaped.

Eſſ. Ch. Calyx inferior, five-cleft. Petals five. Nectary none. Stigma capitate. Capſule ſucculent, of five cells. Seeds ſolitary.

1. S. *aculeata.* Prickly Scopolia. Sm. as above. Willd. n. 1. Ait. n. 1. (Paullinia aſiatica; Linn. Sp. Pl. 524. Jacq. Obſ. faſc. 3. 11. t. 62. f. 1. Kaka-toddali; Rheede Hort. Malab. v. 5. 81. t. 41.)—Stem prickly. Leaflets obovate, bluntly pointed. Panicles axillary.—Native of the Eaſt Indies, the iſle of Bourbon, &c. A ſtove plant, introduced at Kew by ſir J. Banks, in 1790. We ſaw it at Meſſrs. Lee and Kennedy's in 1792. The *branches*, and often the *footſtalks*, are armed with hooked prickles, like thoſe of a roſe. *Leaves* alternate, ternate; *leaflets* equal, an inch and half long, obſcurely crenate, ſmooth, coriaceous, rather glaucous, when bruiſed ſmelling like rue. *Panicles* axillary, often in pairs, alternately branched; their partial ſtalks moſtly umbellate. *Flowers* ſmall, white, ſaid to be ſtrongly ſcented. *Fruit* brown, acrid. Every part of the plant is beſprinkled with glandular dots.

2. S. *inermis.* Blunt-leaved Scopolia. Willd. n. 2. (Toddalia paniculata; Lamarck Dict. n. 2. Illuſtr. f. 2.)—Stem without prickles. Leaflets obovate, obtuſe, entire. Panicle terminal. Flowers four-cleft.—Native of the iſland of Mauritius. A *ſhrub*, reſembling ſome of the Cape ſpecies of *Rhus*. *Fruit* with four furrows. The above character ſhews the differences between this ſpecies and the former. We have ſeen no ſpecimen.

3. S. *lanceolata.* Lanceolate-leaved Scopolia. (Toddalia lanceolata; Lamarck Dict. n. 3. Vepris inermis; Commerſon MSS.)—Stem without prickles. Leaflets lanceolate, taper-pointed. Panicle terminal. Flowers four-cleft.—Native of the iſlands of Mauritius and Bourbon.—The *leaflets* of this are near three inches long, tapering at each end, very acute, ſhining, elegantly veined; ſomewhat criſped at the edges. *Panicle* terminal, many-flowered, with hairy ſtalks. We have in the Linnæan herbarium a ſpecimen, which ſeems to be this plant in fruit, with rather leſs tapering *leaflets*. The *capſules* have three, four, or five cells, and are, like the *leaves*, beſprinkled with glandular dots. By a ticket annexed, it ſhould ſeem that this ſpecimen came from the Cape of Good Hope.

4. S. *anguſtifolia.* Narrow-leaved Scopolia. (Toddalia anguſtifolia; Lamarck Dict. n. 4.)—Stem without prickles. Leaflets linear-lanceolate, rather acute. Branches downy. Cluſters axillary, much ſhorter than the leaves.—Gathered by Sonnerat in the Eaſt Indies.—The *leaflets* are deſcribed by Poiret, in Lamarck's work, as narrow, ſhining, veiny, eſpecially beneath, entire. *Cluſters* ſmall, very much ſhorter than the leaves, moderately branched. *Flowers* five-cleft. *Fruit* very ſmall, with four or five cells.

SCOPPELLO, in *Geography*, a town of France, in the department of the Seſia; 10 miles W. of Vercelli.

SCOPS, in *Ornithology*, a ſpecies of *Strix;* which ſee.

SCOPULUS, in *Ancient Geography*, an iſland of the Ionian ſea, near that of Cephalenia.

SCOPUS, in *Ornithology*, a genus of birds of the order Grallæ. Bill long, thick, compreſſed, a little hooked; the noſtrils are linear and oblique; the feet are four-toed and cleft. There is but a ſingle

Species.

Umbretta; Tufted Umbre. It inhabits Africa, and is twenty inches long. The bill is brown, with a longitudinal furrow on each ſide, in which are placed the noſtrils; the lower mandible is narrower towards the end, and a little truncate; the creſt is thick, tufted, and lax; the body is brown; the tail is obſcurely barred; legs longiſh, brown; toes connected at the baſe. The female is not creſted.

SCORBOLO, in *Geography*, a town of the duchy of Parma; 6 miles E.N.E. of Parma.

SCORBUTUS, in *Medicine.* See Scurvy.

SCORCHING Fennel, in *Botany.* See Thapsia.

SCORDÆ, in *Ancient Geography*, a people of Aſia, in Bactriana, S. of the Tochares, or Trochares. Ptolemy.

SCORDICES, a Celtic or Gauliſh people, who inhabited the territory S. of the Danube, and were ſome of the moſt warlike people in all Illyria. Some of them occupied the banks of the Noarus, on the coaſt of the town of Segeſte; and others were ſituated near the confluence of the Danube and Save. Their limits extended to the mountains of Thrace and of Macedonia. Theſe people were ultimately ſubdued by Tiberius, when he commanded the armies of Auguſtus in Pannonia.

SCORDISCUS Mons, a mountain of Cappadocia. Ptolemy.

SCORDIUM, in *Botany.* See Germander.

SCORE, in *Agriculture*, a term ſignifying twenty pounds in ſpeaking of the weight of cattle, ſwine, and many other things.

Score, in *Muſic*, the parts of a compoſition placed over each other, and a perpendicular line or bar drawn through the whole, whence the term *ſcore;* in which with a glance may be ſeen the movement and agreement of the ſeveral parts in the melody, and combination in the harmony. See Partition and Bars.

SCORF, in *Geography*, a river of France, in the department of the Morbihan, which runs into the ſea about ſix miles S. of L'Orient.

SCORIA, in *Metallurgy*, the recrements of metals in fuſion, or, more determinately ſpeaking, the maſs, or part of the maſs, of a melted metal, converted by the action of the fire into a body, which, when cold, is brittle, fixed, not diſſoluble in water, but melts again when expoſed to the fire, and is properly a kind of glaſs.

Some authors call by this name that ſaline maſs, which is produced by melting ores and metals together, with ſaline and reducing fluxes. But the word ſcoria is not properly to be underſtood of all this maſs, but only of the vitrified particles which are lodged between, and adhere to the ſmall maſſes of the ſalts, and which may be ſeparated from them by water.

SCORIFICATION, the art of reducing a body either entirely, or in part, into ſcoriæ.

It is uſed by metallurgiſts, in order that any metal, impriſoned in a ſolid body, may, on account of its weight, deſcend and ſeparate itſelf from it, and finally if that be required by itſelf either wholly or in part, converted into ſcoriæ.

All fixed bodies are ſubject to this alteration, not totally excepting even gold and ſilver. There are alſo, among the volatile bodies, ſome that may be fixed, and which aſſume the form of ſcoriæ, by adding fixed bodies to them.

It is often proper to make this ſcorification in a veſſel that may abſorb the ſcoriæ, and retain only the metallic part of the maſs under trial. In this caſe the operation is called *coppelling*, and veſſels made of aſhes, called *teſts* and *coppels*, ſerve for this purpoſe. It is evident in theſe proceſſes, that a great attenuation of the ſcoriæ is neceſſary, that they may be able to paſs through the veſſel; nor is there any fitter body to promote this operation than lead, which, by its undergoing itſelf a like attenuation in the fire, diſpoſes other bodies to be reduced into ſubtle ſcoriæ for the ſame attenuation.

SCORING, in *Agriculture*, a provincial term, ſignifying the glazing, gloſſing, or making the furrow-ſlice ſhine in ploughing or turning land up, by the plough acting as a trowel. Mr. Marſhall ſays it may be prevented by the uſe of a ſtrong rope-yarn round the mould-board. It is ſometimes written ſcowring. Ploughs ſhould be prevented, as much as poſſible, from having this effect, as the friction or power of draught is thereby greatly increaſed. See Plough.

SCORITH, a word uſed by the chemical writers to expreſs ſulphur.

SCORODOPRASUM, in *Botany*, compounded of σκοροδον, *garlick*, and πρασον, *a leek*, becauſe the plant which bears this name is ſomewhat intermediate, in appearance and character, between both. See Allium, n. 16.

SCORPÆNA, in *Ichthyology*, a genus of fiſhes of the order Thoracici. The generic character is as follows: the head is large, aculeate, cirrous, obtuſe, without ſcales, ſubcompreſſed; the eyes are near to each other; teeth in the jaws and palate; the gill-membrane is ſeven-rayed; the body is thick and fleſhy; the dorſal fin is ſingle, long; the anterior rays are ſpinous. According to Gmelin there are nine ſpecies, but by other naturaliſts ſixteen have been enumerated.

This genus is diſtinguiſhed by a peculiar uncouthneſs of appearance; the head, in ſome ſpecies, being abruptly truncated in front, of vaſt ſize, and armed with protuberances and ſpines.

Species.

Porcus. Cirri near the eyes and noſtrils. This ſpecies is common in the Mediterranean, where it chiefly frequents the ſhores, lying in ambuſh among ſtones, ſea-weeds, &c. and preying on the ſmaller fiſhes and ſea-inſects; the head is large; the mouth is wide, with many rows of ſmall ſharp teeth; the eyes are large; the gill-covers are armed with ſtrong ſpines intermixed with cirri; the body is covered with ſmall rough ſcales of a duſky colour, varied with black on the back, and beneath pale, with a reddiſh caſt. The dorſal fin is furniſhed with very ſtrong ſpiny rays, which the fiſh when caught erects, and thus wounds its adverſary. It is generally, when full grown, from twelve to fifteen inches long.

Scrofa. The lower lip has two cirri. This, in its general appearance, is very nearly allied to the porcus, ſo much ſo that it might be miſtaken for it; but it is larger, and has larger ſcales; it has alſo ſeveral cirri or proceſſes diſpoſed along the lateral line; the colour likewiſe is rather rufous than brown, as in the former kind. Of this ſpecies it is reported, that it preys not only on the ſmaller fiſhes, but even on marine birds, that happen to come within its reach. It ſometimes attains the length of four feet; it muſt, conſequently, prove a formidable enemy to ſmaller marine animals. It is ſaid to be an edible fiſh, notwithſtanding its forbidding appearance.

Horrida. The body of this is beſet with callous tubercles. It inhabits and is found about the coaſts of India. The body is variegated with brown and white, devoid of ſmall ſcales, and all ſides rough with cirri. The head is very large, covered with tubercles and prickles, and disfigured with cavities; eyes very ſmall, the pupil is black, iris yellow, placed above a deep hollow; the mouth above is large, the inſide is armed with numerous ſmall ſharp teeth; the lateral line beginning at the nape and bent downward near the anal fin, and ending in the middle of the tail; the fins are covered with a thick ſkin; the rays are forked. This is ſaid to be one of the moſt uncouth and hideous animals emboſomed in the deep, reſembling rather ſome imaginary monſter than a natural deformity or unſightlineſs.

Volitans. Pectoral fins are larger than the body. It inhabits the freſh waters of Amboina and Japan. It is leſs than the river perch; it has the power of raiſing itſelf out of the water, and ſuſpending itſelf in the air a ſhort time by means of its long pectoral fins, when purſued by larger fiſh; the body is varied with brown bands, and intermediate orange and white lines, and covered with ſmall imbricate ſcales. The fleſh of this ſpecies is reckoned extremely delicious. It probably uſes its fins for the purpoſes of occaſional flight.

Antennata. This is known chiefly by a band acroſs the eyes; it is variegated with brown and yellow; it has large violet-coloured pectoral fins. It is nearly allied to the volitans in its general appearance, but is ſomewhat larger, and with a ſloping head; the body is variegated with numerous brown and yellow tranſverſe ſtripes; the eyes are larger than thoſe of the preceding fiſh, and immediately over the eyes are ſeated two long cylindrical tentacula or cirri, ſurrounded by ſeveral fibrous brown bars; upper jaw is longer than the lower; pectoral fins ſmaller than the flying ſcorpæna, and of a deep violet colour, with the rays projected greatly beyond the membrane; the ſcales on the body are larger than thoſe on the flying ſcorpæna, and the head is nearly plain or whitiſh in front. It is a native of the rivers of Amboina.

Didactyla; Brown Scorpæna. Blotched and ſpotted with yellow, with two diſtinct appendages near the pectoral fin. This is not more than about a foot long; the form is extremely groteſque; the general colour is a duſky brown, varied above by tranſverſe yellow ſtreaks, and beneath by roundiſh ſpots of the ſame colour; the ſkin is deſtitute of ſcales; the head is depreſſed, and furniſhed on different parts with ſeveral abrupt fleſhy cirri; the eyes are large, and ſituated on two protuberances; the ſnout is truncated, and marked on the ſides by ſeveral angular wrinkles, as are alſo the lower parts of the gill-covers; the lower jaw is longer than the upper; the tongue is prominent, and marked with yellow granulations and black ſtreaks; the cirri are fleſhy, a very large one on each ſide on the lower jaw; the lateral line is parallel with the back; the vent is placed behind the end of the ventral fins; the fins are formed of numerous rays terminating in filaments; the pectoral fins are large, oval, and with rounded tail barred with black; the dorſal reaching from the head to the tail. This fiſh was firſt deſcribed by Dr. Pallas. It is a native of the Indian ſeas, and preys on the ſmaller fiſhes, ſea-inſects, &c. It is an edible fiſh.

Capensis. The head of this ſpecies is marked on each ſide over the eyes with four teeth or proceſſes, and nearly an even tail. This is about a foot long; it is covered with ſmall, rough, imbricated ſcales; the head is large; ſo alſo are the eyes, which are ſituated on each ſide; the mouth is wide; the jaws are equal; the gill-covers are each compoſed of two very large ſcaly plates, the upper of which terminates in four denticulations, and the lower in a ſingle point; the back is arched and carinated; the pectoral fins are large and ovate. It is a native of the Cape of Good Hope, and was deſcribed by Gronovius.

Spinosa. The dorſal fin of this is continued from head to tail, and it has a ſpiny lateral line. According to Dr. Shaw, the body is compreſſed; the head is ſpiny, and the lateral line is marked with ſpiny points; the dorſal fin is longer than in moſt of the genus, reaching from between the eyes to the tail.

Americana. The mouth of this is bearded; the head ſpiny, and the pectoral fins ſuborbicular. The head is armed with protuberances and ſpines; it has two ſpines on the upper lip, and five or ſix on the lower; the laſt fifteen rays of the dorſal fin form a portion more elevated than the reſt of the fin, and they are of a rounded figure; the anal fin, which is ſituated juſt beneath this part, is of a ſimilar ſhape; the pectoral fins and tail are alſo rounded. It is a native of the American ſeas.

Such are the ſpecies deſcribed by Gmelin; the following have been added ſince.

Plumieri. Blackiſh, with feathered cirri on the head and lateral line. The upper part and ſides of the head, together with the gill-covers, armed with triangular, flat, and ſharp ſpines; between the eyes are ſituated four fringed cirri; and four others of ſimilar form, but ſmaller, are placed on the upper lip; while ſeveral are diſpoſed along a lateral line; the body is covered with ſcales of a moderate ſize; the firſt part of the dorſal fin, which is of a rounded form, is furniſhed with ſpiny rays, and the tail is alſo rounded; the general colour of the fiſh is of a very deep or blackiſh-brown, and on the pectoral fins are a few ſmall brown ſpots. It is a native of the American ſeas.

Commersonii. The body and fins of this ſpecies are tranſverſely banded with brown and yellow; the eye-brows are ſerrated, and the upper lip bearded. This ſpecies has been deſcribed by M. Cépéde from the manuſcripts of Commerſon. The back is arched and carinated; the lateral line curving downwards; the body is covered with ſmall ſcales; the head is large, and armed with numerous ſpines; the orbits of the eyes are elevated, and forming two denticulated creſts, with a furrow between them; the lower is ſomewhat longer than the upper, which is extenſile, and furniſhed on each ſide with three or four beards; the teeth are very ſmall and cloſe; the noſtrils are each marked with a ſmall filament; the gill-covers are compoſed of two plates; the dorſal fin is marked in different parts by large unequal ſinuations; the pectoral fins are ſo long as almoſt to reach as far as the extremity of the back fin, and the tail is of a rounded ſhape; the body is raiſed with brown and yellow tranſverſe bands, and all the fins are variegated.

This ſpecies was obſerved by Commerſon about half a century ago near the iſlands of Mahè.

Bicapillata. This ſpecies has an abrupt ſubdepreſſed head, furniſhed at the back part with two extremely long filaments. It is about four inches long; the body is rather thick, and covered with minute ſcales; the head is large, and ſomewhat depreſſed, and marked with protuberances; the lower lip is much elevated, ſo as to make the head appear truncated in front; the eyes are ſmall and near; and the pectoral fins very large, and ſo long as to reach as far as the middle of the body. It is a native of the Indian ſeas. The colour is not mentioned by Cépéde, whoſe deſcription is taken from Commerſon.

Brachiata. The head of this is abrupt and depreſſed; the ventral fins are attached to a brachial proceſs. It is allied to the laſt, which it reſembles in the ſhape of the head; the ſize and ſituation of the eyes; the conformation of the jaws; the ſmallneſs of the ſcales on the body, and rounded tail; but it differs in being deſtitute of the two filaments, ſo remarkable in the other ſpecies, as well as in having the membrane of the dorſal fin much leſs deeply ſcalloped; while each of the pectoral fins forms as it were a band, which reaches from the fore part of the branchial aperture to the vent.

Aculeata. The ſpecific character of this fiſh is, that it has four ſpines above the eyes; and both plates of the gill-covers are ſpiny. This is diſtinguiſhed from the other ſpecies by having four very ſtrong recurved ſpines above the eyes; both plates of the gill-covers are aculeated; the dorſal and anal fins are more elevated on one part than the other; the elevated part being of a rounded form, as well as the pectoral fins and tail. This is deſcribed by M. Cépéde, who does not mention its colour or country.

Barbata. The head of this ſpecies is marked in ſome parts by ſeveral protuberances, and in others by pretty large depreſſions or cavities; on the upper lip are two beards; and the pectoral fins are united to each other by a ſmall membrane; the tail is almoſt rectilinear.

SCORPIACA, the name of an antidote recommended by Galen againſt the ſtinging of ſcorpions.

SCORPIO, Scorpion, in *Aſtronomy*, the eighth ſign of the zodiac, denoted by the character ♏.

The ſtars in Scorpio, in Ptolemy's catalogue, are 24; in that of Tycho, 10; in that of Hevelius, 20; in that of Mr. Flamſteed and Mr. Sharp, 44. See Constellation.

Scorpio, in *Botany*, a name by which ſome of the old authors have called the *geniſta ſpinoſa*, or common furze buſh. Ger. Emac. Ind. 2.

Scorpio, *Scorpion*, in *Entomology*, a genus of inſects of the order Aptera. The generic character is, that it has eight legs, beſides two chelæ, or hands, ſeated on the forepart of the head; the eyes are eight in number; three of them are placed on each ſide of the thorax, and two on the back; it has two feelers, projecting cheliform; lip bifid and no antennæ; the tail is long, jointed, and terminated by a ſharp crooked ſting; on the underſide, between the breaſt and abdomen, are two inſtruments reſembling a comb. The inſects of this tribe are all armed with a ſlightly pungent ſting; none of them, however, are dangerous, except thoſe in very hot climates; they prey upon worms, ſpiders, flies, &c.; and even on one another; the larva and pupa are eight-footed, nimble, and reſembling the perfect inſect. There are ten ſpecies, all of which are of warmer climates than our own.

Species.

Australasia. Combs with ſix teeth; the hands are ſmooth. It inhabits the Pacific iſlands, and is a very ſmall inſect. The body is depreſſed, above it is of a brown colour, the laſt joint of the tail is paler; beneath and legs are of a paler hue.

Carpathicus. Combs with ſix teeth; hands ſlightly heart-ſhaped and glabrous. This ſpecies is found in the Carpathian and Helvetic mountains, and by ſome authors is thought to be a variety of the auſtralaſia.

Maurus. This ſpecies has combs with eight teeth; the hands are ſlightly heart-ſhaped and punctured. It inhabits Africa.

Afer; African Scorpion. The combs of this ſpecies have thirteen teeth; the hands are ſlightly heart-ſhaped and hairy. It inhabits Perſia, India, and ſome parts of Africa. The body is of a gloſſy browniſh-black; the inciſures of the abdomen are yellow; the firſt joint of the tail ſerrate. Of the ſeveral ſpecies of the ſcorpio, none are ſo remarkable for ſize and the malignity of their poiſon as this. It has been ſeen ten inches long, when meaſured from the end of the claw to the extremity of the tail. The general colour being of a dark brown, it is not eaſily diſtinguiſhed from the rotten wood and furniture under or within which it lurks. The tail is the inſtrument which renders this animal formidable; and the reſervoir which contains the poiſon is ſituated near the extremity, from whence it is ejected through two very ſmall holes, one on each ſide the tip of the ſting. Theſe holes are ſo very minute, as to elude the ſight of any but a very accurate obſerver, with the aſſiſtance of glaſſes. This ſpecies is dreaded in Africa, where the activity of the venom is frequently productive of very ſerious evils; and in ſome caſes, where the evil has been neglected, the conſequences have proved fatal.

Americanus. Combs with fourteen teeth; the hands are ſubciliate, with filiform claws. It inhabits South America. The body is ſpotted with brown.

Chilensis. This ſpecies has combs with ſixteen teeth; the hands are ſubangular. It inhabits Chili, as its ſpecific name denotes.

Europæus; or Italian Scorpion. This has combs with eighteen teeth; the hands are angular. It inhabits the ſouthern parts of Europe, and is ſaid to be viviparous, and is remarkably fond of ſpiders as a food, but with the larger kinds it has often very ſevere conteſts. The ſcorpion, after having ſtung its adverſary to death, cuts off his limbs with his claws, and ſucks the juice from his body.

Hottentotta. Combs with twenty-two teeth only; the hands are ſmooth, and the tail is rough. It is found in Sierra Leona. The body is brown, and covered with ſmall raiſed dots; the tail is marked with rough raiſed lines; the legs are paler.

Criseus. Combs with twenty-five teeth; the hands are ſubciliate and ovate. It inhabits the American iſlands; body pale teſtaceous; the tail is as long as the body.

Australis. The combs of this ſpecies are divided into thirty-two teeth; the hands are ſmooth. The body is brown; the legs are rufous; the hands are long and rufous, with filiform claws.

All the ſpecies of this genus are capable of ſtinging in a leſs or greater degree, and they all ſeem actuated by a ſimilar malignant ſpirit, for they will attack each other with fury if confined in the ſame glaſs, and the ſurvivor will devour the conquered. We are indebted to M. Maupertuis for the firſt accurate and philoſophical account of the habits of theſe animals. According to him they are all viviparous; the body of the pregnant female exhibiting, when diſſected, between 40 and 50 young. Each of theſe is ſeparated from the reſt by a thin membrane, while all are united by a common filament. This philoſopher, in order to aſcertain adverſary. It is generally, when full grown, from twelve to fifteen inches long.

Scrofa. The lower lip has two cirri. This, in its general appearance, is very nearly allied to the porcus, ſo much ſo that it might be miſtaken for it; but it is larger, and has larger ſcales; it has alſo ſeveral cirri or proceſſes diſpoſed along the lateral line; the colour likewiſe is rather rufous than brown, as in the former kind. Of this ſpecies it is reported, that it preys not only on the ſmaller fiſhes, but even on marine birds, that happen to come within its reach. It ſometimes attains the length of four feet; it muſt, conſequently, prove a formidable enemy to ſmaller marine animals. It is ſaid to be an edible fiſh, notwithſtanding its forbidding appearance.

Horrida. The body of this is beſet with callous tubercles. It inhabits and is found about the coaſts of India. The body is variegated with brown and white, devoid of ſmall ſcales, and all ſides rough with cirri. The head is very large, covered with tubercles and prickles, and disfigured with cavities; eyes very ſmall, the pupil is black, iris yellow, placed above a deep hollow; the mouth above is large, the inſide is armed with numerous ſmall ſharp teeth; the lateral line beginning at the nape and bent downward near the anal fin, and ending in the middle of the tail; the fins are covered with a thick ſkin; the rays are forked. This is ſaid to be one of the moſt uncouth and hideous animals emboſomed in the deep, reſembling rather ſome imaginary monſter than a natural deformity or unſightlineſs.

Volitans. Pectoral fins are larger than the body. It inhabits the freſh waters of Amboina and Japan. It is leſs than the river perch; it has the power of raiſing itſelf out of the water, and ſuſpending itſelf in the air a ſhort time by means of its long pectoral fins, when purſued by larger fiſh; the body is varied with brown bands, and intermediate orange and white lines, and covered with ſmall imbricate ſcales. The fleſh of this ſpecies is reckoned extremely delicious. It probably uſes its fins for the purpoſes of occaſional flight.

Antennata. This is known chiefly by a band acroſs the eyes; it is variegated with brown and yellow; it has large violet-coloured pectoral fins. It is nearly allied to the volitans in its general appearance, but is ſomewhat larger, and with a ſloping head; the body is variegated with numerous brown and yellow tranſverſe ſtripes; the eyes are larger than thoſe of the preceding fiſh, and immediately over the eyes are ſeated two long cylindrical tentacula or cirri, ſurrounded by ſeveral fibrous brown bars; upper jaw is longer than the lower; pectoral fins ſmaller than the flying ſcorpæna, and of a deep violet colour, with the rays projected greatly beyond the membrane; the ſcales on the body are larger than thoſe on the flying ſcorpæna, and the head is nearly plain or whitiſh in front. It is a native of the rivers of Amboina.

Didactyla; Brown Scorpæna. Blotched and ſpotted with yellow, with two diſtinct appendages near the pectoral fin. This is not more than about a foot long; the form is extremely groteſque; the general colour is a duſky brown, varied above by tranſverſe yellow ſtreaks, and beneath by roundiſh ſpots of the ſame colour; the ſkin is deſtitute of ſcales; the head is depreſſed, and furniſhed on different parts with ſeveral abrupt fleſhy cirri; the eyes are large, and ſituated on two protuberances; the ſnout is truncated, and marked on the ſides by ſeveral angular wrinkles, as are alſo the lower parts of the gill-covers; the lower jaw is longer than the upper; the tongue is prominent, and marked with yellow granulations and black ſtreaks; the cirri are fleſhy, a very large one on each ſide on the lower jaw; the lateral line is parallel with the back; the vent is placed behind the end of the ventral fins; the fins are formed of numerous rays terminating in filaments; the pectoral fins are large, oval, and with rounded tail barred with black; the dorſal reaching from the head to the tail. This fiſh was firſt deſcribed by Dr. Pallas. It is a native of the Indian ſeas, and preys on the ſmaller fiſhes, ſea-inſects, &c. It is an edible fiſh.

Capensis. The head of this ſpecies is marked on each ſide over the eyes with four teeth or proceſſes, and nearly an even tail. This is about a foot long; it is covered with ſmall, rough, imbricated ſcales; the head is large; ſo alſo are the eyes, which are ſituated on each ſide; the mouth is wide; the jaws are equal; the gill-covers are each compoſed of two very large ſcaly plates, the upper of which terminates in four denticulations, and the lower in a ſingle point; the back is arched and carinated; the pectoral fins are large and ovate. It is a native of the Cape of Good Hope, and was deſcribed by Gronovius.

Spinosa. The dorſal fin of this is continued from head to tail, and it has a ſpiny lateral line. According to Dr. Shaw, the body is compreſſed; the head is ſpiny, and the lateral line is marked with ſpiny points; the dorſal fin is longer than in moſt of the genus, reaching from between the eyes to the tail.

Americana. The mouth of this is bearded; the head ſpiny, and the pectoral fins ſuborbicular. The head is armed with protuberances and ſpines; it has two ſpines on the upper lip, and five or ſix on the lower; the laſt fifteen rays of the dorſal fin form a portion more elevated than the reſt of the fin, and they are of a rounded figure; the anal fin, which is ſituated juſt beneath this part, is of a ſimilar ſhape; the pectoral fins and tail are alſo rounded. It is a native of the American ſeas.

Such are the ſpecies deſcribed by Gmelin; the following have been added ſince.

Plumieri. Blackiſh, with feathered cirri on the head and lateral line. The upper part and ſides of the head, together with the gill-covers, armed with triangular, flat, and ſharp ſpines; between the eyes are ſituated four fringed cirri; and four others of ſimilar form, but ſmaller, are placed on the upper lip; while ſeveral are diſpoſed along a lateral line; the body is covered with ſcales of a moderate ſize; the firſt part of the dorſal fin, which is of a rounded form, is furniſhed with ſpiny rays, and the tail is alſo rounded; the general colour of the fiſh is of a very deep or blackiſh-brown, and on the pectoral fins are a few ſmall brown ſpots. It is a native of the American ſeas.

Commersonii. The body and fins of this ſpecies are tranſverſely banded with brown and yellow; the eye-brows are ſerrated, and the upper lip bearded. This ſpecies has been deſcribed by M. Cépéde from the manuſcripts of Commerſon. The back is arched and carinated; the lateral line curving downwards; the body is covered with ſmall ſcales; the head is large, and armed with numerous ſpines; the orbits of the eyes are elevated, and forming two denticulated creſts, with a furrow between them; the lower is ſomewhat longer than the upper, which is extenſile, and furniſhed on each ſide with three or four beards; the teeth are very ſmall and cloſe; the noſtrils are each marked with a ſmall filament; the gill-covers are compoſed of two plates; the dorſal fin is marked in different parts by large unequal ſinuations; the pectoral fins are ſo long as almoſt to reach as far as the extremity of the back fin, and the tail is of a rounded ſhape; the body is raiſed with brown and yellow tranſverſe bands, and all the fins are variegated.

This ſpecies was obſerved by Commerſon about half a century ago near the iſlands of Mahè.

BICAPILLATA. This ſpecies has an abrupt ſubdepreſſed head, furniſhed at the back part with two extremely long filaments. It is about four inches long; the body is rather thick, and covered with minute ſcales; the head is large, and ſomewhat depreſſed, and marked with protuberances; the lower lip is much elevated, ſo as to make the head appear truncated in front; the eyes are ſmall and near; and the pectoral fins very large, and ſo long as to reach as far as the middle of the body. It is a native of the Indian ſeas. The colour is not mentioned by Cépéde, whoſe deſcription is taken from Commerſon.

BRACHIATA. The head of this is abrupt and depreſſed; the ventral fins are attached to a brachial proceſs. It is allied to the laſt, which it reſembles in the ſhape of the head; the ſize and ſituation of the eyes; the conformation of the jaws; the ſmallneſs of the ſcales on the body, and rounded tail; but it differs in being deſtitute of the two filaments, ſo remarkable in the other ſpecies, as well as in having the membrane of the dorſal fin much leſs deeply ſcalloped; while each of the pectoral fins forms as it were a band, which reaches from the fore part of the branchial aperture to the vent.

ACULEATA. The ſpecific character of this fiſh is, that it has four ſpines above the eyes; and both plates of the gill-covers are ſpiny. This is diſtinguiſhed from the other ſpecies by having four very ſtrong recurved ſpines above the eyes; both plates of the gill-covers are aculeated; the dorſal and anal fins are more elevated on one part than the other; the elevated part being of a rounded form, as well as the pectoral fins and tail. This is deſcribed by M. Cépéde, who does not mention its colour or country.

BARBATA. The head of this ſpecies is marked in ſome parts by ſeveral protuberances, and in others by pretty large depreſſions or cavities; on the upper lip are two beards; and the pectoral fins are united to each other by a ſmall membrane; the tail is almoſt rectilinear.

SCORPIACA, the name of an antidote recommended by Galen againſt the ſtinging of ſcorpions.

SCORPIO, SCORPION, in *Aſtronomy*, the eighth ſign of the zodiac, denoted by the character ♏.

The ſtars in Scorpio, in Ptolemy's catalogue, are 24; in that of Tycho, 10; in that of Hevelius, 20; in that of Mr. Flamſteed and Mr. Sharp, 44. See CONSTELLATION.

SCORPIO, in *Botany*, a name by which ſome of the old authors have called the *geniſta ſpinoſa*, or common furze buſh. Ger. Emac. Ind. 2.

SCORPIO, *Scorpion*, in *Entomology*, a genus of inſects of the order Aptera. The generic character is, that it has eight legs, beſides two chelæ, or hands, ſeated on the forepart of the head; the eyes are eight in number; three of them are placed on each ſide of the thorax, and two on the back; it has two feelers, projecting cheliform; lip bifid and no antennæ; the tail is long, jointed, and terminated by a ſharp crooked ſting; on the underſide, between the breaſt and abdomen, are two inſtruments reſembling a comb. The inſects of this tribe are all armed with a ſlightly pungent ſting; none of them, however, are dangerous, except thoſe in very hot climates; they prey upon worms, ſpiders, flies, &c.; and even on one another; the larva and pupa are eight-footed, nimble, and reſembling the perfect inſect. There are ten ſpecies, all of which are of warmer climates than our own.

Species.

AUSTRALASIA. Combs with ſix teeth; the hands are ſmooth. It inhabits the Pacific iſlands, and is a very ſmall inſect. The body is depreſſed, above it is of a brown colour, the laſt joint of the tail is paler; beneath and legs are of a paler hue.

CARPATHICUS. Combs with ſix teeth; hands ſlightly heart-ſhaped and glabrous. This ſpecies is found in the Carpathian and Helvetic mountains, and by ſome authors is thought to be a variety of the auſtralaſia.

MAURUS. This ſpecies has combs with eight teeth; the hands are ſlightly heart-ſhaped and punctured. It inhabits Africa.

AFER; African Scorpion. The combs of this ſpecies have thirteen teeth; the hands are ſlightly heart-ſhaped and hairy. It inhabits Perſia, India, and ſome parts of Africa. The body is of a gloſſy browniſh-black; the inciſures of the abdomen are yellow; the firſt joint of the tail ſerrate. Of the ſeveral ſpecies of the ſcorpio, none are ſo remarkable for ſize and the malignity of their poiſon as this. It has been ſeen ten inches long, when meaſured from the end of the claw to the extremity of the tail. The general colour being of a dark brown, it is not eaſily diſtinguiſhed from the rotten wood and furniture under or within which it lurks. The tail is the inſtrument which renders this animal formidable; and the reſervoir which contains the poiſon is ſituated near the extremity, from whence it is ejected through two very ſmall holes, one on each ſide the tip of the ſting. Theſe holes are ſo very minute, as to elude the ſight of any but a very accurate obſerver, with the aſſiſtance of glaſſes. This ſpecies is dreaded in Africa, where the activity of the venom is frequently productive of very ſerious evils; and in ſome caſes, where the evil has been neglected, the conſequences have proved fatal.

AMERICANUS. Combs with fourteen teeth; the hands are ſubciliate, with filiform claws. It inhabits South America. The body is ſpotted with brown.

CHILENSIS. This ſpecies has combs with ſixteen teeth; the hands are ſubangular. It inhabits Chili, as its ſpecific name denotes.

EUROPÆUS; or Italian Scorpion. This has combs with eighteen teeth; the hands are angular. It inhabits the ſouthern parts of Europe, and is ſaid to be viviparous, and is remarkably fond of ſpiders as a food, but with the larger kinds it has often very ſevere conteſts. The ſcorpion, after having ſtung its adverſary to death, cuts off his limbs with his claws, and ſucks the juice from his body.

HOTTENTOTTA. Combs with twenty-two teeth only; the hands are ſmooth, and the tail is rough. It is found in Sierra Leona. The body is brown, and covered with ſmall raiſed dots; the tail is marked with rough raiſed lines; the legs are paler.

CRISEUS. Combs with twenty-five teeth; the hands are ſubciliate and ovate. It inhabits the American iſlands; body pale teſtaceous; the tail is as long as the body.

AUSTRALIS. The combs of this ſpecies are divided into thirty-two teeth; the hands are ſmooth. The body is brown; the legs are rufous; the hands are long and rufous, with filiform claws.

All the ſpecies of this genus are capable of ſtinging in a leſs or greater degree, and they all ſeem actuated by a ſimilar malignant ſpirit, for they will attack each other with fury if confined in the ſame glaſs, and the ſurvivor will devour the conquered. We are indebted to M. Maupertuis for the firſt accurate and philoſophical account of the habits of theſe animals. According to him they are all viviparous; the body of the pregnant female exhibiting, when diſſected, between 40 and 50 young. Each of theſe is ſeparated from the reſt by a thin membrane, while all are united by a common filament. This philoſopher, in order to aſcertain the ſtrength of their venom, bred a great number together; and let them looſe upon dogs and other animals, and he found that ſometimes the ſting was ſo poiſonous as to cauſe the whole body of the wounded animal to ſwell, the conſequences of which were frequently violent reaching, convulſions, and death. At other times he found the ſtings of the ſame ſpecies almoſt harmleſs.

Theſe animals are ſaid to caſt their ſkins from time to time, and to live chiefly on worms and inſects, with which, if they are well provided, they will live a long time in a ſtate of confinement.

The opinions of authors are very different as to the ſting of the ſcorpion; ſome aſſerting that there is an opening in it, through which a poiſonous liquor is thrown into the wound made by it, as is the caſe in the tooth of the viper, &c. and others affirming that there is no ſuch opening.

Galen affirms that there is none, but moſt of the writers of the middle ages aſſert that there is. But the whole is ſet in the cleareſt light by ſignior Redi, who took the pains of examining microſcopically the ſtings of ſcorpions, brought alive from Tunis, Egypt, and Italy, and found in all the trials which he made with ſeveral of them, a ſmall drop of white liquor upon the ſting. And Mr. Leeuwenhoek diſcovered an opening on each ſide of the ſting of this creature, for the emiſſion of the poiſon, which he ſuppoſes is not diſcharged till the ſting is buried in the wound. Baker's Microſcope, p. 213.

M. de Maupertuis having cauſed ſcorpions to bite ſeveral animals, of which very few died, or ſuffered any more than the pain of the ſting, is of opinion, that oil of ſcorpions, and other vulgar antidotes to the poiſon of theſe animals, have rather got their reputation from the innocence of the ſting of theſe creatures than from any conſiderable virtue in the medicines. Mém. de l'Acad. des. Sciences, 1731.

However this be, moſt families in Morocco, which is much infeſted with this reptile, keep a bottle of ſcorpions, infuſed in olive oil, which is uſed whenever any perſon is ſtung by them; for though, it is ſaid, the ſcorpion carries an antidote in itſelf, it is not always to be caught, as it often ſtings a perſon while aſleep, and diſappears before he awakes, or thinks of looking for it; in which caſe the body of the live ſcorpion cannot be procured. It is neceſſary to bind the part, if poſſible, above the place ſtung, then to cauterize, and afterwards ſcarify the puncture, to prevent the venom from pervading the ſyſtem: this method is ſometimes effectual, and ſometimes fails, according to the ſituation of the part wounded, or the nature of the ſcorpion, ſome being more poiſonous than others; but where the fleſh of the reptile can be procured, the cure is ſaid to be certain and effectual.

Scorpio, a ſpecies of *Curculio;* which ſee.—Alſo, a ſpecies of *Cerambyx;* which ſee. See alſo the preceding article.

Scorpio, in *Ichthyology*. See Scorpæna.

SCORPIOIDES, the name of the Blennius *Ocellaris*, deſcribed by Artedi as having a furrow between the eyes, and a large ſpot on the dorſal fin, being of a faint green, variegated with black ſpots; and either wanting the eye fins, or elſe having them extremely minute.

Scorpioides, in *Botany*, ſo named by Tournefort, from the reſemblance of its contorted and jointed legume, to the tail of a ſcorpion. See Scorpiurus.

SCORPIOFERA Regia, in *Ancient Geography*, a country of Aſia, in Aria, according to Ptolemy.

SCORPION, in *Entomology*. See Scorpio.

Scorpion, *Water*, *Scorpio paluſtris*, a name given to a very remarkable genus of water-inſects. See Nepa.

Scorpion *Fly*, in *Natural Hiſtory*, a name given by Mouffet, and other writers, to a kind of fly, remarkable for carrying the end of its tail turned up in the form of the ſcorpion's ſting.

Its diſtinguiſhing characters are theſe; its roſtrum, or trunk, is of a cylindric figure, and of a horny ſtructure; and its tail is furniſhed with a weapon of the cheliform kind.

There are two very beautiful ſpecies of theſe. The one has ſilvery wings, variegated with three tranſverſe ſtreaks of black towards the ends; the head is black; and the breaſt, ſhoulders, and feet, whitiſh; the reſt of the body is black; the tail, which repreſents a ſting, has five joints, three of which are red, and the others black; the end of the tail alſo is forked, and the forks black, and turned up like the ſting of a ſcorpion.

The other reſembles this in many reſpects; but the end of the tail is thicker, and the forks blunter; the head is dunniſh, the mouth long, and each wing variegated with ſix black ſpots, of a large ſize.

Scorpion, *Scorpio*, is alſo the name of an ancient military engine, uſed chiefly in the defence of walls, &c.

Marcellinus deſcribes the ſcorpio, as conſiſting of two beams bound together by ropes. From the middle of the two, roſe a third beam, ſo diſpoſed, as to be pulled up and let down at pleaſure; and on the top of this were faſtened iron hooks, where was hung a ſling, either of iron or hemp; and under the third beam lay a piece of hair-cloth full of chaff, tied with cords.

To uſe the engine, a round ſtone was put into the ſling, and four perſons on each ſide, looſening the beams bound by the ropes, drew back the erect beam to the hook; when, the engineer ſtanding on an eminence, giving a ſtroke with a hammer on the cord to which the beam was faſtened with its hook, ſet it at liberty; ſo that hitting againſt the ſoft hair-cloth, it ſtruck out the ſtone with a vaſt force.

It had its name *ſcorpio*, becauſe when the long beam or tiller was erected, it had a ſharp top, in manner of a ſting. More modern times have given it the name *onager*, *wild aſs*, becauſe that animal, when hunted, flings back ſtones. For a deſcription of the ſcorpion, which was only a large croſsbow, and a figure illuſtrating it, as this inſtrument was conſtructed and uſed about the time of the Norman invaſion, we refer to Groſe's Mil. Antiq. v. i. p. 367.

Scorpion *Graſs*, in *Botany*. See Scorpiurus.

Scorpion *Graſs*, *Mouſe-ear*. See Myosotis.

Scorpion *Senna*. See Coronilla.

Scorpion's *Thorn*. See Furze.

Scorpion, *Mountain of*, or of *Acrabim*, in *Ancient Geography*, a place of Paleſtine, towards the extremity of the Dead ſea, S. of the tribe of Juda, according to the book of Joſhua.

SCORPIURUS, in *Botany*, a name which occurs in Pliny, borrowed from the Greeks. Σκορπιουρος, *having the tail of a ſcorpion*, alludes to the twiſted ſhape of the legume. The Engliſh name of this genus, Caterpillar, has a ſimilar meaning.—Linn. Gen. 382. Schreb. 504. Willd. Sp. Pl. v. 3. 1159. Mart. Mill. Dict. v. 4. Sm. Prodr. Fl. Græc. Sibth. v. 2. 81. Ait. Hort. Kew. v. 4. 335. Juſſ. Gen. 361. Lamarck Illuſtr. t. 631. Gærtn. t. 155. (Scorpioides; Tournef. t. 226.)—Claſs and order, *Diadelphia Decandria*. Nat. Ord. *Papilionaceæ*, Linn. *Leguminoſæ*, Juſſ.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, erect, inflated, very ſlightly compreſſed, acute, cloven half way down into five, nearly equal, teeth, the upper ones leſs divided. *Cor.* papilionaceous: Standard roundiſh, emarginate,

ginate, reflexed, ſpreading: Wings nearly ovate, lax, with an obtuſe appendage: Keel creſcent-ſhaped, or gibbous, pointed, erect, cloven at the lower part. *Stam.* Filaments in two parcels (one and nine) aſcending; anthers ſmall. *Piſt.* Germen ſuperior, oblong, round, a little reflexed; ſtyle inflexed upwards; ſtigma a terminal point. *Peric.* Legume oblong, roundiſh, leathery, ſtriated, rough, revolute, divided internally into numerous tranſverſe cells, knotted obſcurely at the outſide, with contracted joints. *Seeds* ſolitary, roundiſh.

Eſſ. Ch. Legume jointed, divided by tranſverſe partitions, revolute, cylindrical.

1. S. *vermiculata.* Common Caterpillar. Linn. Sp. Pl. 1050. (Campoides; Riv. Tetrap. Irr. t. 96.)—Stalks ſingle-flowered. Legumes covered all over with obtuſe ſcales.—Native of the ſouth of Europe, flowering in June and July.—*Root* annual, fibrous. *Stem* from ſix to twelve inches in height, trailing, jointed. *Leaves* alternate, ſtalked, lanceolate, decurrent, hairy, pointed, entire. *Bracteas* in pairs, erect, narrow, attenuated. *Flower-ſtalks* axillary, each bearing a ſingle yellow *flower*, which is ſucceeded by a thick, twiſted *legume* of the ſize and appearance of a large green caterpillar.

2. S. *muricata.* Two-flowered Caterpillar. Linn. Sp. Pl. 1050. (Scorpioides bupleuri folio, corniculis aſperis et rugoſis ſive rigidis, ſtriatis ſive ſulcatis, litui inſtar contortis et in ſe convolutis; Moriſ. Hiſt. v. 2. 127. ſect. 2. t. 11. f. 4.)—Stalks two-flowered. Legumes prickly on the outſide.—Native of the ſouth of Europe, flowering with the laſt.—*Root* annual, ſlender. *Stems* ſimilar in habit, but ſtronger, than in the Common Caterpillar. *Leaves* broader. *Flowers* ſomewhat ſmaller, two on a ſtalk. *Legumes* longer, and more twiſted, ſpinous externally, or rough with angular, ciliated lines.

3. S. *lævigata.* Smooth Caterpillar. Sm. Prodr. Fl. Græc. Sibth. n. 1743. Fl. Græc. t. 718, unpubliſhed. (Scorpioides bupleuri folio, ſiliquis lenibus; Tourn. Inſt. 402.)—Stalks three or four-flowered. Legumes furrowed, perfectly ſmooth. Found by Dr. Sibthorp in the fields of the Archipelago. In the Prodromus Floræ Græcæ, it is ſaid "ſcarcely to differ from *S. muricata*, except in the *Legumes* being altogether ſmooth; the *flowers* two, three, or four together, according to the luxuriancy of the plant." Hence it may poſſibly be only a variety of that ſpecies.

4. S. *ſulcata.* Three-flowered Caterpillar. Linn. Sp. Pl. 1050. Fl. Græc. t. 719, unpubliſhed.—Stalks generally three-flowered. Legumes with diſtinct, acute ſpines on the outſide.—Native of the ſouth of Europe, and in the iſlands of the Archipelago, flowering in June and July.—*Root* annual, ſlender, fibrous. *Stems* rather proſtrate, ſmall, ſmooth. *Leaves* on ſhort ſtalks, decurrent, lanceolate, pointed, fringed. *Flower-ſtalks* long, ſlender, moſtly bearing three yellow *flowers*. *Legumes* ſcarcely ſo much twiſted as in the foregoing ſpecies.

5. S. *ſubvilloſa.* Four-flowered Caterpillar. Linn. Sp. Pl. 1050. "Schkuhr. Handb. v. 2. 382. t. 208. α."—Stalks moſtly four-flowered. Legumes with numerous, acute ſpines on the outſide.—Native of the ſouth of Europe, and of Algiers. It flowers in June and July.—*Root* annual. *Stems* ſtriated, villous, procumbent. *Leaves* ſtalked, broadly lanceolate, entire, acute. *Stipulas* narrow. *Flower-ſtalks* axillary, naked, ſtriated, much longer than the leaves. *Flowers* moſtly four together, terminal, yellow. *Legumes* very much twiſted.

Desfontaines has another ſpecies which he calls *S. purpurea.* It is nearly allied to the firſt, having like that a ſolitary *flower*, but of a purple colour; the *ſtems* and *leaves* hairy; the legume grooved, and very ſhortly muricate, not ſcaly.

Miller mentions one of rather a dwarfiſh habit and with pinnate *leaves*, which he therefore calls *S. pinnata.*

Linnæus was of opinion that all the plants of this genus, which were known to him, were originally derived from one and the ſame ſpecies.

Scorpiurus, in *Gardening*, contains hardy herbaceous plants of the annual kind, of which the ſpecies cultivated are, the common caterpillar (S. vermiculata); the two-flowered caterpillar (S. muricata); and the furrowed caterpillar (S. ſulcata).

Method of Culture.—Theſe plants may be increaſed by ſowing the ſeeds in the places where they are to remain in the early ſpring months, three or four ſeeds being put in in a place, the plants ſhould be thinned properly, and kept clean from weeds afterwards, when they will produce flowers, and pods having the reſemblance of caterpillars, about the month of June. The firſt ſort is moſt deſerving of cultivation, as being the largeſt in the pods, and moſt perfectly formed.

They afford ornament and variety in their curious pods in the different garden departments.

SCORPIUS. See Scorpæna.

Scorpius *Marinus*, in *Ichthyology.* See Cottus, and Father-*laſher*.

SCORTICK, in *Geography*, a lake of North America. N. lat. 62° 5′. W. long. 106° 20′.

SCORTIUM, among the Romans, a meaſure of capacity of a round form, which uſed always to be heaped.

SCORTUM. See Scrotum.

SCORZAROLA, in *Geography*, a town of Italy, in the department of the Mincio; 14 miles S.S.W. of Mantua.

SCORZONERA, in *Botany*, a word of barbarous origin, which nevertheleſs has been generally received by all the moſt claſſical writers in this ſcience. Tournefort gives its derivation from the Catalan name of a viper, *eſcorſo;* De Theis writes it *ſcurzon*, adding that this plant paſſes in Spain for a certain remedy againſt the bite of that reptile; an idea which, as he juſtly ſays, may have ariſen from the ſnake-like form of the root, rather than from any powerful qualities in that, or any other part of a plant, which is in ſuch common uſe as a mild eſculent vegetable.—Linn. Gen. 399. Schreb. 526. Willd. Sp. Pl. v. 3. 1498. Mart. Mill. Dict. v. 4. Ait. Hort. Kew. v. 4. 434. Sm. Prodr. Fl. Græc. Sibth. v. 2. 122. Purſh v. 2. 497. Juſſ. 170. Tourn. t. 269. Lamarck Illuſtr. t. 647. Poiret in Lamarck's Dict. v. 7. 14. Gærtn. t. 159.—Claſs and order, *Syngeneſia Polygamia-æqualis.* Nat. Ord. *Compoſitæ ſemifloſculoſæ*, Linn. *Cichoraceæ*, Juſſ.

Gen. Ch. *Common Calyx* imbricated, long, nearly cylindrical, of about fifteen ſcales, with membranous edges. *Cor.* compound, imbricated, uniform; florets all perfect, monopetalous, ligulate, linear, abrupt, five-toothed, the outermoſt rather the longeſt. *Stam.* Filaments five, capillary, very ſhort; anthers united into a cylindrical tube. *Piſt.* Germen oblong; ſtyle thread-ſhaped, the length of the ſtamens; ſtigmas two, reflexed. *Peric.* none, except the ovate-oblong cloſed calyx, finally ſpreading and reflexed. *Seeds* ſolitary, oblong, cylindrical, ſtriated, half as long as the calyx; down feathery, its points more or leſs naked. *Recept.* naked.

Eſſ. Ch. Receptacle naked. Down feathery, with naked points. Calyx imbricated; its ſcales with membranous edges.

The thirty-two ſpecies in Willdenow, and their ſynonyms, require conſiderable corrections, and ſeveral additions.

1. S. *tomentoſa*. White Viper's-graſs. Linn. Sp. Pl. 1112. Willd. n. 1. Ait. n. 1. Prodr. Fl. Gr. n. 1876. (S. orientalis latifolia, nervoſa, candidiſſima et tomentoſa; Tourn. Cor. 36.)—Stem ſimple. Leaves ſeſſile, ovate, ribbed, downy, entire.—Gathered by Tournefort in Armenia; by Pallas on the banks of the Don; and by Sibthorp on the little iſland, or rather rock, in the Archipelago, called *Caloiera*, or *Caloyero*. We know of no figure of this rare, and very diſtinct, ſpecies, though it was introduced at Kew, in 1789, by ſir Joſeph Banks, and is a hardy perennial. The *ſtem* is about one or two feet high, round, ſtriated, leafy, ſomewhat corymboſe at the top, clothed, like every other part of the herb, with ſoft hoary down. *Leaves* numerous, alternate, two inches long and one broad, acute, entire, many-ribbed, half claſping the ſtem with their baſe, which in the lower ones is elongated into more or leſs of a broad *footſtalk*. *Flowers* ſeveral, terminal; their *ſtalks* and baſe of the *calyx* ſhaggy, with ſilky hairs. The *corolla* we have not ſeen. Tournefort gathered the plant in ſeed only. The *ſeeds* are ſtrongly furrowed, each crowned with a copious tuft of ſhining, ſeſſile, rough, ſcarcely feathery, *down*, nearly an inch long.

2. S. *auſtriaca*. Auſtrian Viper's-graſs. Willd. n. 2. (S. humilis; Jacq. Auſtr. v. 1. 24. t. 36. S. n. 10; Hall. Hiſt. v. 1. 6. S. humilis latifolia pannonica; Cluſ. Hiſt. v. 1. 138. Viperaria pannonica; Ger. Em. 737.)—Stem nearly naked, ſingle-flowered. Leaves lanceolate, many-ribbed, ſmooth, oblique, ſomewhat undulated.—Native of the mountains of Switzerland, Auſtria, Hungary, and Greece, flowering early in the ſpring. *Root* perennial, long and thick, black, crowned with fibres of decayed leaves. *Stem* uſually ſolitary, from three to twelve inches high, ſimple, erect, bearing a few ſcattered *bracteas*, and one large yellow *flower*, the ſcales of whoſe *calyx*, eſpecially the edges of the inner ones, are generally woolly. *Leaves* ſeveral, radical, ſtalked, four or five inches long, and nearly one broad, taper-pointed, oblique or twiſted, moſtly very much undulated, rather glaucous, with numerous irregular longitudinal ribs and veins.

3. S. *humilis*. Humble Viper's-graſs. Linn. Sp. Pl. 1112. Willd. n. 3. Ait. n. 2? (S. n. 11; Hall. Hiſt. v. 1. 6. S. humilis anguſtifolia pannonica; Cluſ. Hiſt. v. 2. 138. S. luſitanica, gramineo folio flore pallidè luteo; Buxb. Cent. 2. 26. t. 21. Viperaria pannonica anguſtifolia; Ger. Em. 737.)—Stem nearly naked, ſingle-flowered. Leaves linear-lanceolate, even, ſmooth, ſomewhat channelled.—Native of the mountains of Switzerland, but rare. Our ſpecimens were gathered by Mr. Davall, in the Tombey, a road near Aigle, as mentioned by Haller, who miſtook this plant for the Linnæan *anguſtifolia*. The Linnæan ſpecimen came from Siberia. Buxbaum gathered his near Conſtantinople. Differs from the laſt in having longer, narrower, ſomewhat channelled and convoluted, but not undulated *leaves*. *Flower* rather ſmaller and paler, with fewer ſcales in the *calyx*, and thoſe almoſt perfectly ſmooth. Haller doubted whether the two ſpecies were diſtinct, and Linnæus has referred ſome of the ſynonyms of the preſent to his *anguſtifolia*, a very different plant from both. The figure in Fl. Dan. t. 816, might be taken for *S. humilis*, did not the great breadth of the lower *leaves* more accord with *auſtriaca*. Willdenow's characters and deſcriptions of the two are not ſufficiently correct to aſcertain what he meant, nor is it clear to us that he did not take the one for the other. They ſeem intentionally united in Hort. Kew. Schleicher has called our *humilis*, *intermedia*.

4. S. *pygmæa*. Dwarf Alpine Viper's-graſs. Sm. Prodr. Fl. Græc. Sibth. n. 1878. Fl. Græc. t. 783, unpubliſhed.—Stem nearly naked, ſingle-flowered, the length of the foliage. Leaves recurved, channelled, woolly on the upper ſide.—Gathered by Dr. Sibthorp on the ſummit of the Bithynian Olympus. The *root* is perennial, black, very long, divided at the crown into many thick knobs. *Leaves* ſeveral from each knob, radical, lanceolate, channelled, rigid, recurved, rather more than an inch in length, woolly on the upper ſide towards the baſe. *Stems* ſolitary, an inch high, woolly, with one or two little *bracteas*. *Flowers* large, yellow. Outer ſcales of the *calyx* woolly; inner ſmooth, each with a purple rib. Limb of the *florets* broad, and rather ſhort.

5. S. *hiſpanica*. Garden Viper's-graſs, or Common Scorzonera. Linn. Sp. Pl. 1112. Willd. n. 4. Ait. n. 3. Matth. Valgr. v. 1. 492. Camer. Epit. 314. (S. major hiſpanica; Cluſ. Hiſt. v. 2. 137. Viperaria, ſive Scorzonera hiſpanica; Ger. Em. 736.)—Leaves lanceolate, undivided, ſmooth, minutely ſerrated, claſping the branched ſtem.—Native of Spain, Hungary, and Siberia. Cultivated here in the year 1576, and ſtill preſerved in the kitchen gardens of the great and luxurious, though not much in general uſe. The *roots* are perennial, long, cylindrical, and when boiled, and dreſſed with cream, make a delicate, rather inſipid, diſh. *Stem* branched, leafy, three or four feet high, ſmooth, angular and furrowed. *Leaves* a ſpan long, pointed, pale and rather glaucous. *Flowers* yellow, ſolitary at the ends of the long naked *branches*. The whole plant is milky when wounded, but not acrid, though bitteriſh.

6. S. *alba*. White-flowered Viper's-graſs.—Stem ſomewhat branched and leafy. Leaves lanceolate, flat, entire, ſmooth, glaucous; tapering at each end; the upper ones ovate at the baſe, and claſping the ſtem.—Gathered by Commerſon at Monte Video. *Root* ſomewhat tuberous. *Stem* a foot high, ſlightly branched at the lower part only. *Lower leaves* tapering at the baſe and ſomewhat ſtalked, four or five inches long, rather more than half an inch broad, glaucous, eſpecially beneath, with one ſtrong rib, and many fine branching veins; *upper ones* gradually ſmaller, dilated and rounded at their baſe, claſping the ſtem. *Flowers* white, ſolitary at the ends of the few long, ſlightly bracteated, *branches*. *Calyx* ſmooth. No author ſeems to have noticed this ſpecies, which was given by M. Thouin to the younger Linnæus.

7. S. *glaſtifolia*. Woad-leaved Viper's-graſs. Willd. n. 5. (S. graminifolia; Hoffm. Germ. 272. Roth. Germ. v. 1. 334. v. 2. p. 2. 249. S. anguſtifolia altera; Buxb. Hal. 298. Rupp. Jen. ed. Hall. 207. Nonn. Erf. 110.)—Stem nearly ſingle-flowered, leafy. Leaves linear-lanceolate, pointed, ſmooth, ribbed, flat.—Found on hills and in woods, in Germany, Bohemia, and Sileſia. *Root* perennial. *Plant* variable, with from one to three or four *flowers*, and *leaves* either linear-lanceolate, or oblong-lanceolate. It is like *S. hiſpanica*, but differs in the fewneſs of its *flowers*, the very long-pointed *leaves*, tapering greatly at each end, and not ſerrated. The narrow-leaved variety differs from *S. anguſtifolia* in having the *ſtem-leaves* ſhorter, not keeled, nor rigid, and the *radical ones* very long. The *calyx* moreover is naked and ſmooth.—Such is Willdenow's account, on whom we rely for the quotations, having ſeen no ſpecimen nor figure of this ſpecies; unleſs S latifolia altera, Bauh. Pin. 275, be its true ſynonym; in which caſe it is S. boemica; Matth. Valgr. v. 1. 493. S. major pannonica prima; Cluſ. Hiſt. v. 2. 138. Viperaria humilis; Ger. Em. 736. Willdenow ſurely could not overlook theſe figures, which are not appropriated either by him or Linnæus.

8. S. *caricifolia*. Carex-leaved Viper's-graſs. Pall. It. v. 3. 756. t. I i. f. 1. Willd. n. 6.—Stem ſingle-flowered,

leafy, aſcending. Leaves lanceolate-ſwordſhaped, ſmooth, flat, many-ribbed. Corolla ſomewhat longer than the calyx. —Gathered by Pallas in the low ſalt-marſhes of Siberia, flowering in June. *Root* tuberous, perennial, ſending down many juicy, very ſweet, radicles, as thick as a reed. *Radical leaves* a ſpan long, pliant. *Stem* a foot and half high, furrowed, bearing about three diſtant ſmall leaves. *Flower* comparatively ſmall, yellow; the *corolla* but ſlightly ſpreading, and not much exceeding the *calyx*, whoſe outer ſcales are purple. *Seed-down* ſeſſile, finely feathery. *Pallas*.

9. S. *parviflora*. Small-flowered Viper's-graſs. Willd. n. 7. Jacq. Auſtr. v. 4. 3. t. 305.—Stem branched, leafy, aſcending. Leaves lanceolate-ſwordſhaped, ſmooth, flat, ribbed. Corolla ſcarcely longer than the calyx.—Native of open, ſunny, rather boggy, places in Auſtria, flowering in May, June, and July. The *flowers* are rather ſmaller than the laſt, but from all we can gather, the two plants appear to conſtitute one ſpecies; nevertheleſs, having never examined a ſpecimen of the former, we leave them as we find them.

10. S. *undulata*. Wavy-leaved Viper's-graſs. Vahl. Symb. v. 2. 86. Willd. n. 8. Desfont. Atlant. v. 2. 219. (S. græca ſaxatilis, foliis anguſtis undulatis tomentoſis; Tourn. Cor. 36.)—Stem ſlightly branched. Leaves linear-lanceolate, tapering, wavy, downy. Outer ſcales of the calyx with ſpreading points.—Native of ſandy ground in Barbary; and according to Tournefort's ſynonym, in Greece, though Dr. Sibthorp does not appear to have found it. *Root* perennial, as thick as the thumb, crowned with briſtly remains of leaves. *Stem* from ſix to ten inches high, downy, leafy below; ſometimes ſimple; ſometimes bearing three or four ſingle-flowered branches. *Leaves* from one to three inches long, downy or mealy, rarely ſmooth; the upper ones dilated at the baſe. *Flower* the ſize of *S. humilis*. *Calyx* with lax, reflexed, pointed ſcales. *Corolla* purple. *Down* ſeſſile, feathery, cohering together like a cobweb.—Our account is taken from Desfontaines and Vahl. The latter deſcribes the *flowers* as pale red.

11. S. *graminifolia*. Graſs-leaved Viper's-graſs. Linn. Sp. Pl. 1112. Willd. n. 9. Ait. n. 4. Jacq. Obſ. faſc. 4. 13. t. 100. Sm. Fl. Græc. Sibth. t. 784, unpubliſhed.—Stem branched, many-flowered. Leaves linear-lanceolate, taper-pointed, entire, keeled, ſmooth. Calyx ſomewhat downy at the baſe; its inner ſcales thrice as long as the outer. Florets bearded.—Native of Portugal, Siberia, Aſia Minor, and Zante. Miller is ſaid to have cultivated this ſpecies, and it ſtill finds a place in catalogues, but is rarely ſeen in gardens. The habit of the plant is tall and branching, like *S. hiſpanica*, but the *leaves* are much narrower, and entire. *Flowers* large, yellow, purpliſh at the back. *Anthers* brown. Each *floret* is bearded at the outſide, round the ſummit of the tube, with ſpreading yellow filaments, which ſeem characteriſtic of this ſpecies. The five equal inner ſcales of the *calyx*, edged with purple, are about three times the length of the imbricated ones at the baſe. Theſe laſt are ſometimes, not always, villous or downy. *Seed-down* feathery, with naked points, as in ſeveral others of this genus.

12. S. *tuberoſa*. Tuberous Viper's-graſs. Pall. It. v. 3. 757. t. Y. f. 3. Willd. n. 10. (S. bulboſa; Wheler's Travels 416, with a plate. S. humilis tuberoſa ſyriaca; Moriſ. ſect. 7. t. 6. f. 16. Chondrilla altera; Rauw. It. 117, with a figure.)—Stems ſingle-flowered, ſomewhat leafy. Leaves linear; downy beneath. Root tuberous, globoſe. Scales of the calyx with recurved points.—Native of Syria, Greece, and of the barren muddy abrupt banks of the ſouthern part of the Wolga, flowering in the middle of April, and diſappearing in May, except the perennial, tuberous, milky, nearly globular *root*, about as big as a walnut, which is eaten by the Calmucks. *Stems* one or more, united under ground, ſix inches high, leafy in their lower part, and inveſted with membranous ſheaths. *Leaves* as tall as the ſtem, narrow, acute. *Flowers* ſolitary, ſmall, yellow, externally purpliſh, drooping before they expand. Inner ſcales of the *calyx* equal, erect; outer imbricated, with recurved points, downy.

13. S. *araneoſa*. Cobweb Viper's-graſs. Sm. Prodr. Fl. Græc. Sibth. n. 1880. Fl. Græc. t. 785, unpubliſhed. —Stems ſingle-flowered, leafy. Leaves linear, recurved, ſhaggy, as well as the calyx, whoſe ſcales are all erect. Root tuberous, oblong, very large.—Gathered by Dr. Sibthorp in Cyprus. We were at firſt inclined to refer Wheler's ſynonym to this ſpecies, inſtead of the laſt, but it ſeems to agree beſt with that. The preſent has an ovate or oblong fleſhy *root*, perhaps of a pound weight, encompaſſed with two or three zone-like furrows. *Stems* numerous, a ſpan high, moſtly ſimple and ſingle-flowered, clothed with long, narrow, recurved *leaves*, which are ſhaggy with long, looſe, white, cobweb-like fibres. The *calyx* is villous; its ſcales all erect and cloſe-preſſed; not with recurved points, as in *S. tuberoſa*. The *corolla* is large, yellow. *Florets* without any fibres round the top of the tube. *Seed-down* rough throughout, ſcarcely feathery. *Seeds* clothed with briſtly hairs.

14. S. *crocifolia*. Crocus-leaved Viper's-graſs. Sm. Prodr. Fl. Græc. Sibth. n. 1881. Fl. Græc. t. 786, unpubliſhed.—Stems ſingle-flowered, leafy. Leaves linear, lax, quite ſmooth, as well as the calyx; their mid-rib dilated, pale.—Found by Dr. Sibthorp in Zante, and ſome parts of Greece. The inhabitants of that iſland know it by the name of Σκορσονέρα, in common with *S. graminifolia*. The preſent is a perfectly ſmooth perennial plant, with a long cylindrical *root*, probably eſculent, like that of the common *S. hiſpanica*. *Stems* a foot high, each bearing a yellow *flower*, of a middling ſize, externally purpliſh. The *calyx* is ſlender; its ſix or ſeven inner ſcales equal, thrice as long as the few pointed, cloſe, imbricated ones at the baſe. The radical *leaves* are long, narrow, looſely ſpreading and deflexed, quite entire and ſmooth, each marked by a broad pale mid-rib, almoſt as conſpicuous as in the Crocus. The *ſtem-leaves* are much ſhorter, alternate, diminiſhing gradually upwards to a ſmall *bractea*. The *florets* have no beard-like filaments round their tube, by the want of which this plant differs eſſentially from *S. graminifolia*, as well as in its humbler growth, ſimple *ſtems*, linear *leaves*, and ſmaller *flowers*.

15. S. *puſilla*. Curled-leaved Viper's-graſs. "Pall. It. v. 2. append. n. 122. t. L." Willd. n. 11.—"Leaves thread-ſhaped, curled at the points. Stem branched."—Native of the promontories of the Caſpian ſea. *Root* perennial, crowded with a fibrous ſubſtance, like moſt of the perennial plants of the ſouthern deſarts of Siberia. *Stems* of humble growth, ſeveral, aſcending or nearly erect, leafy, branching at the top into three or four *flower-ſtalks*. *Leaves* long, linear, with curling points. *Calyx* with broad ſcales; the inner ones gradually narrower and longer, but not ſo long as the *corolla*, which is pale, and not expanded. *Seeds* ſmooth, ſtriated. *Down* very long, feathery, with naked capillary points. *Pallas*. *Willdenow*.

16. S. *roſea*. Roſe-coloured Viper's-graſs. Willd. n. 12. (S. purpurea; Scop. Carn. (n. 949.) v. 2. 96. t. 46. S. ſylveſtris, foliis anguſtis, flore cæruleo, minor; Mentz. Pugill. t. 1. f. 1. Tragopoginis ſpecies, ſive Scorſonera major anguſtifolia, ſubcæruleo flore; Bauh. Hiſt. v. 2. 1062.)

—“Stem ſingle-flowered. Leaves lanceolate-linear, flat; thoſe on the ſtem linear and keeled.”—Native of groves in Brandenburg, and of the mountains of Hungary and Carniola. Perennial. The *ſtem* uſually bears but one flower, very rarely two. Radical *leaves* flat; thoſe of the ſtem narrower, with a triangular keel; their baſe hairy. *Willd.*

17. S. *purpurea.* Branched Purple Viper's-graſs. Linn. Sp. Pl. 1113. Willd. n. 13. Ait. n. 5. Jacq. Auſtr. v. 1. 23. t. 35. (S. n. 5; Gmel. Sib. v. 2. 7. t. 2. S. anguſtifolia elatior pannonica; Cluſ. Hiſt. v. 2. 139. Viperaria anguſtifolia elatior; Ger. Em. 737.)—Stem branched. Leaves linear-awl-ſhaped, channelled, triangular, ſomewhat hairy. Calyx downy; its outer ſcales blunt.—Native of Siberia and Auſtria, flowering in June. Willdenow ſays this has always a branched *ſtem*, adding, that all the *leaves* are linear-thread-ſhaped, moſtly hairy. Our ſpecimens from Gmelin anſwer to this deſcription, and yet ſeem to want the peculiar denſe hairineſs, at the baſe of the *leaves*, ſo conſpicuous in Mentzelius's figure of the foregoing. The *flowers* are fragrant, purple, and rather large. Outer ſcales of the *calyx* peculiarly broad and blunt; all the ſcales finely downy. By Scopoli's figure, the *calyx* of *roſea* ſeems to have nothing but acute ſcales; but of that we have ſeen no ſpecimen.

18. S. *anguſtifolia.* Narrow-leaved Viper's-graſs. Linn. Sp. Pl. 1113. Willd. n. 14. Ait. n. 6. “Waldſt. and Kitaib. Hung. v. 2. 128. t. 122.” (S. pinifolia; Gouan. Illuſtr. 53. Willd. n. 15. Tragopogon pinifolium hiſpanicum; Barrel. Ic. 496, good.)—Stem ſingle-flowered, downy, leafy, ſwelling near the top. Leaves awl-ſhaped, acute, ribbed, entire, crowded. Calyx downy, with blunt ſcales. Seeds ſmooth.—Native of Spain, and the ſouth of France; perhaps alſo of Hungary; but we truſt to the Hort. Kew. for the quotation of the Fl. Hungar. not having that book within our reach. Nor are we ſure that the authors of either of theſe works knew the true *anguſtifolia.* They may poſſibly intend Haller's n. 11, which we have proved to be *humilis*, ſee n. 3; to which may alſo belong Gmelin's n. 2. t. 1, though the hairineſs of the ſtem in his figure ſeems an objection. We have no authentic ſpecimen of his plant, to decide the queſtion. All we here anſwer for is the original *anguſtifolia* of Linnæus, which Gouan, miſled by Haller, deſcribed as new. The *root* is tapering. *Stem* ſolitary, three or four inches high, erect, ſimple, ſingle-flowered, round, furrowed, more or leſs downy, pale; ſwelling, or club-ſhaped, at the top; leafy in the lower part. *Leaves* very numerous, about as tall as the ſtem, linear, keeled, very narrow, downy at the baſe only; the radical ones longeſt and moſt numerous; thoſe on the lower part of the ſtem much crowded; one or two remote ones, about the middle, ſpreading, dilated at their baſe. *Flowers* as large as any of the genus, or larger, ſulphur-coloured; of a fine purple beneath, though, as Gouan well obſerves, the tubes of all the *florets* are yellow. *Calyx* regularly imbricated throughout; its ſcales all obtuſe, finely downy; the innermoſt above an inch long. *Seeds* long, ſlender, angular, ſmooth, with ſeſſile, feathery, naked-pointed down. This is a very handſome plant, as well as totally diſtinct from all the foregoing.

19. S. *hirſuta.* Hairy Viper's-graſs. Linn. Mant. 278. Willd. n. 16. (S. erioſperma; Gouan. Illuſtr. 52? S. orientalis anguſtifolia, ſemine longo aſpero; Tourn. Cor. 36. Tragopogon calycibus corollâ brevioribus, foliis integris ſtrictis ciliatis, caule hirto, pedunculis ſupernè incraſſatis; Gerard. Gallo-Prov. 258. T. hirſutum; Garid. 469. t. 106. T. apulum humile hirſutum luteum; Column. Ecphr. 234. 233.)—Stem ſingle-flowered, hairy, as well as the linear channelled leaves. Calyx downy, with acute ſcales. Seeds hairy.—Native of Italy, the ſouth of France, and the Levant, in open dry ground. Gerarde mentions it as biennial. The *ſtems* are uſually ſolitary, ſometimes two or three from one root, which may perhaps account for Gouan's ſaying the ſtem is branched and many-flowered. The hairineſs of the herbage, but eſpecially of the *ſeeds*, diſtinguiſhes this ſpecies clearly from the laſt. The *flowers* moreover are not half ſo large. The naked points of the *ſeed-down*, which is tawny, are much longer than in that ſpecies.

20. S. *villoſa.* Shaggy Viper's-graſs. Scop. Carn. v. 2. 952. t. 46. Willd. n. 17.—Stem branched, ſtriated, villous, as well as the calyx, and linear keeled leaves. Seed-down obſcurely feathered.—Native of the neighbourhood of Trieſte. *Stem* a foot high, erect. *Leaves* falcate, half embracing the ſtem and branches. *Flowers* an inch in diameter, yellow; reddiſh beneath. Scales of the *calyx* fifteen, ſlightly downy, red at the back, yellowiſh at the edges. *Seed-down* tawny. *Scopoli.*

21. S. *erioſperma.* Woolly-ſeeded Viper's-graſs. Marſch. in Sims and Kon. Ann. of Bot. v. 2. 458, excluding the ſynonym. Willd. n. 18.—Stems ſimple, aſcending, partly woolly, ſingle-flowered. Leaves linear-awlſhaped, channelled, ribbed, nearly ſmooth. Calyx woolly, with pointed ſcales. Seeds clothed with white down.—Native of graſſy hills towards mount Caucaſus, as well as of the ſandy ſhores of the Caſpian ſea. We have received wild ſpecimens from Dr. Fiſcher of Moſcow, by the name of *Laſioſpermum anguſtifolium*, accompanied with the above ſynonym. The *ſtems* are a foot high, round, ſlender, leafy in the lower part, remarkable for a denſe patch of wool facing the diſk of each leaf; ſmooth and naked above, each bearing one *flower*, about an inch broad, of a delicate pale yellow, with pink or purple ribs. Scales of the *calyx* red or browniſh, ſharply pointed, woolly at the back and edges. *Leaves* graſſy, curved, tapering, woolly at the baſe, though leſs ſo than the ſtem. The *ſeeds* are ſaid to be entirely covered with very white ſilky pubeſcence. Their down is feathery.

22. S. *cretica.* Cretan Viper's-graſs. Willd. n. 19. (S. cretica anguſtifolia, ſemine tomentoſo candidiſſimo; Tourn. Cor. 36.)—“Leaves linear, flat, ſomewhat fringed. Stem branched at the baſe. Seeds downy.”—Native of Crete; where it was found on the Sphaciotic mountains, by Dr. Sibthorp, according to his manuſcripts; but we have not found a ſpecimen in his herbarium. Willdenow diſtinguiſhes this from the preceding, having ſeen both, by the following deſcription. *Root* as thick as the finger, with many heads. *Leaves* linear, fringed, eſpecially towards the bottom, flat, ribbed, as long as the whole plant. *Stems* aſcending, a finger's length, divided at the baſe into two or three branches, with a ſhort leaf at each diviſiou; naked in the upper part, except a few diſperſed ſcales. *Calyx* imbricated; its outer ſcales very ſhort, membranous at the edge, downy; the inner ones elongated, membranous. *Willd.*

23. S. *capenſis.* Cape Viper's-graſs. Thunb. Prodr. 141. Willd. n. 20.—“Leaves linear-lanceolate, ſmooth. Stem panicled.”—Gathered by Thunberg, at the Cape of Good Hope.

24. S. *chondrilloides.* Scaly-ſtalked Viper's-graſs.—Willd. n. 21.—“Leaves linear, obtuſe, ſomewhat toothed. Stem much branched. Flower-ſtalks ſcaly.”—Native of Spain. *Pourret.*—*Stem* four to ſix inches high, divaricated, almoſt leafleſs, or only bearing ſome ſcattered, linear, moſtly entire, *leaves*, ſhorter than the reſt. The radical *leaves* are

linear, obtuſe, generally runcinate, ſometimes merely furniſhed with ſhallow wavy teeth, occaſionally quite entire. Of the two latter deſcriptions are ſuch as grow on the lower part of the ſtem. *Seed-down* ſeſſile, feathery. The plant has the aſpect of a *Chondrilla*. *Willd.*

25. S. *reſedifolia*. Spreading Viper's-graſs. Linn. Sp. Pl. 1113. Willd. n. 22, excluding Boccone's ſynonym. Ait. n. 7. (S. calcitrapifolia; Vahl. Symb. v. 2. 87. S. laciniatis foliis ſupina; Barrel. Ic. 94. n. 1050. t. 800. S. pratenſis, foliis laciniatis glabris; Buxb. Cent. 2. 27. t. 22.)—Stems ſlightly branched, decumbent, leafy. Leaves pinnatifid, ſmooth, ſomewhat lyrate. Scales of the calyx woolly at the points.—Native of Spain and Armenia. *Root* annual, or biennial. *Stems* ſeveral, decumbent, a ſpan long, ſtriated; roughiſh and leafy in the lower part; aſcending and naked at the top, each bearing a ſolitary, pale-yellow *flower*, of a moderate ſize. Segments of the *leaves* various in breadth, linear or obovate, channelled, wavy, and ſomewhat toothed. Scales of the *calyx* numerous, regularly imbricated, ovate-oblong, very ſlightly downy at the back, ribbed, keeled, each tipped with a remarkable tuft of denſe white cottony wool. The exiſtence of this wool is denied by Vahl; who, by his deſcription of *S. reſedifolia*, his transfer of the Linnæan ſynonym to the following, and his citation, with approbation, of another ſynonym, which belongs to Willdenow's *Sonchus chondrilloides*, Sp. Pl. v. 3. 1515, appears to have miſtaken the plant. The true *reſedifolia* is here deſcribed from the Linnæan ſpecimen, and its *calyx*, except the woolly tips, is well delineated in Barrelier's t. 800. The *ſeed-down* is ſeſſile, and feathery almoſt to its very points.

26. S. *calcitrapifolia*. Star-thiſtle-leaved Viper's-graſs. Willd. n. 23, excluding Barrelier's and Buxbaum's ſynonyms. Sm. Fl. Græc. Sibth. t. 787, unpubliſhed. (S. orientalis, foliis calcitrapæ, flore flaveſcente; Tourn. Cor. 36?)—Stems aſcending, villous, ſcarcely branched; leafy at the baſe. Leaves doubly pinnatifid, with villous ſtalks. Calyx downy; its ſcales linear-lanceolate; the innermoſt equal, twice the length of the reſt. Found by Dr. Sibthorp on the ſummit of the Bithynian Olympus. *Root* perennial, long and cylindrical. *Stems* ſeveral, ſpreading, aſcending, about a finger's length, round, reddiſh, clothed with white ſhaggy down, more or leſs leafy at the bottom, partly ſimple, partly ſubdivided. *Leaves* rather hoary, with very ſhaggy ſtalks, deeply pinnatifid, two or three inches in length; their ſegments decurrent, elliptic-oblong, entire at the edges, either ſimple, two-lobed, or pinnatifid. *Flowers* ſolitary, yellow, green underneath, about an inch broad, with a cylindrical *calyx*, whoſe ſcales are narrow, acute, purpliſh, and ſmooth upwards, downy in the lower part; the inner row equal, twice as long as the outer. *Seed-down* feathery.—The doubts of Retzius and Vahl, with the emendations of the latter, have ſo embroiled the hiſtory of *S. reſedifolia*, that although we can very clearly determine that ſpecies, we cannot be certain of what they have contraſted or confounded therewith. The preſent very diſtinct plant we have conſidered as the *calcitrapifolia* of Vahl, and conſequently perhaps of Willdenow; but on more mature inveſtigation, it appears that Vahl's plant is undoubtedly the Linnæan *reſedifolia*. What the plant of Tournefort may be, we have no preciſe knowledge, but the name of *calcitrapifolia*, not being otherwiſe occupied, may as well remain with our preſent plant, to which it is very ſuitable. Willdenow, who had ſeen dried ſpecimens of what he judged *reſedifolia* and *calcitrapifolia*, may poſſibly have had Tournefort's plant, and have underſtood them as we do.

27. S. *laciniata*. Cut-leaved Viper's-graſs. Linn. Sp. Pl. 1114. Willd. n. 24. Ait. n. 8. Jacq. Auſtr. v. 4. 29. t. 356. Sm. Fl. Græc. Sibth. t. 788, unpubliſhed. (S. n. 12; Hall. Hiſt. v. 1. 6. Tragopogon laciniatis foliis; Column. Phytob. p. 2. 22. t. 21.)—Stem erect. Leaves pinnatifid, with linear parallel ſegments; the upper and lowermoſt undivided. Calyx nearly ſmooth; its ſcales ſpurred at the top.—Native of the ſouth of Europe, in dry waſte places, flowering all ſummer long. The *root* is biennial, cylindrical, as thick as the finger. *Stems* very various in height and luxuriance, hollow, leafy, furrowed, ſomewhat downy; in favourable circumſtances above a foot high, with ſeveral alternate branches; in barren or lofty ſpots not more than three or four inches in length, partly decumbent, ſimple and ſingle-flowered. *Leaves* numerous, ſmooth, linear-lanceolate, entire; moſt of them pectinate, as it were, at the ſides, with very narrow ſegments: the firſt radical *leaves*, as well as thoſe on the top of the ſtem, have none of theſe lateral ſegments. *Flowers* ſolitary, terminal, rather larger than the laſt, yellow; purpliſh or livid underneath. *Calyx* imbricated, a little downy; each ſcale furniſhed with a dorſal ſpur, or incurved point, near the top. *Seeds* long, pale, angular, curved, ſmooth, with feathery *down*. The whole herb is full of a bitter milky juice.

28. S. *octangularis*. Octangular Viper's-graſs. Willd. n. 25. (S. reſedifolia; Gouan. Illuſtr. 53? *Willd.*)—“Lower leaves decurrently pinnatifid, lanceolate; upper linear-lanceolate. Calyx octangular in the bud.”—Native of the ſouth of Europe. Willdenow deſcribes it as ſimilar to the preceding, but with broader radical *leaves*, whoſe ſegments are lanceolate and decurrent; and hoary *calyxes*, which before they expand have eight angles. He conſiders Gouan's plant as probably the ſame, though deſcribed as procumbent, while his own is erect. We can form no opinion, having ſeen neither.

29. S. *pumila*. Little Briſtle-pointed Viper's-graſs. Cavan. Ic. v. 2. 19. t. 121. f. 2. Willd. n. 26.—Stems ſimple, ſingle-flowered, leafleſs, ſcaly. Leaves pinnatifid, acute, linear, with callous briſtly-pointed teeth.—Native of Spain, flowering in May and June. The radical *leaves* are ſeveral, ſpreading, fleſhy, ſmooth, regularly and deeply pinnatifid; their ſegments acute, bordered and terminated with callous white teeth, each of which bears a briſtle. *Stems* rather longer than the leaves, aſcending, clothed with many alternate ſimple ſcales, or ſmall leaves, and each bearing one large yellow *flower*, whoſe *calyx-ſcales* are imbricated, narrow, reddiſh. The *ſeed-down* is ſimple, according to Cavanilles, ſo that the plant appears ſcarcely to belong to this genus. We know it not.

30. S. *coronopifolia*. Buck's-horn Viper's-graſs. Desfont. Atlant. v. 2. 220. t. 212. Willd. n. 27. (S. brevicaulis; Vahl. Symb. v. 2. 88. t. 44.)—Stem ſimple, ſingle-flowered, ſlightly leafy. Leaves downy, unequally pinnatifid and jagged, obtuſe.—Native of hills in Barbary; perennial. A dwarf downy plant, with numerous very irregularly divided *leaves*, as tall as the *ſtem*, which is ſolitary, and bears a large yellow *flower*. The ſcales of the *calyx* are broad, acute, downy, eſpecially at their edges. *Seed-down* feathery.

31. S. *aſpera*. Rough Viper's-graſs. “Desfont. Ann. du Muſ. v. 1. 133. t. 9.” Poiret in Lamarck's Dict. v. 7. 24.—Stems aſcending, branched. Leaves rough, lanceolate, toothed or pinnatifid. Calyx ſmooth. Florets with a downy tube. Seeds downy.—Native of the Levant. *Root* perennial. *Stems* ſeveral, divided from the very baſe into ſeveral downy, ſingle-flowered *branches*, 18 inches

long, leafy at the bottom, ſcaly upwards. *Leaves* roughiſh, hoary; the lower ones ſpatulate, toothed, or almoſt pinnatifid, with ſmall intermediate teeth; each ſegment and tooth tipped with a ſtiff briſtle. *Flowers* ſolitary, terminal, yellow. *Calyx* oval, ſmooth, imbricated. *Florets* crowded towards the circumference, ſo as to leave a ſpace in the middle of the flower. The *ſtyles* are remarkably curved. *Seeds* long, channelled, pubeſcent; their down ſeſſile, reddiſh, feathery in its upper half. *Desfontaines.*

32. S. *aſperrima.* Hiſpid Viper's-graſs. Willd. n. 29.—Leaves runcinate, hiſpid. Stem ſomewhat leafy, hiſpid, bearing about two flowers.—Native of Galatia. The *leaves* are compared by Willdenow to thoſe of his *Apargia hiſpida,* (*Leontodon hiſpidum* of Linnæus,) being denſely clothed with thick, white, rigid, forked hairs. *Stem* erect, covered with ſimilar hairs, and bearing one or two, very rarely three, *flowers,* as well as two or three leaves. The *ſtalk* is tumid under each flower. *Seeds* long, linear, with a feathery, ſlightly ſtalked, *down.* *Willdenow.*

33. S. *taraxacifolia.* Dandelion-leaved Viper's-graſs. Jacq. Coll. v. 1. 52. Ic. Rar. t. 160, not 106. Willd. n. 30. Ait. n. 9. Murr. in Linn. Syſt. Veg. ed. 14. 711.—Stem branched, almoſt naked. Leaves runcinate, obtuſe, ſmooth. Stalks ſwelling under the flowers. Seed-down feathery, with intermediate hairs.—Native of Bohemia. A hardy perennial, flowering from June to Auguſt. *Root* ſpindle-ſhaped. *Stems* ſeveral, a foot and a half or two feet high, erect, branched, round, hollow, very ſmooth, bearing one or two ſmall ſcales, but no leaves, ſo that they are perhaps rightly denominated *ſcapi* by Jacquin and Willdenow. *Leaves* ſeveral, radical, depreſſed, with many ſtrong blunt teeth, pointing backwards; the upper ſurface quite ſmooth; under roughiſh; margin minutely fringed. *Flowers* rather ſmall, yellow; orange-red beneath. *Calyx* green, and ſmooth, except a few teeth along the upper part of the mid-rib. *Seeds* ſtriated; their *down* ſtalked.

34. S. *acaulis.* Stem-leſs Viper's-graſs. Willd. n. 31. (S. taraxaci; Roth. Beitr. faſc. 1. 120. Catal. faſc. 1. 95.)—Stalk radical, naked, ſingle-flowered. Leaves lanceolate, acute, with runcinate teeth.—Native of Sileſia. *Root* biennial. *Plant* like a Dandelion, but larger and ſmooth. *Leaves* narrower and longer, reddiſh, ſcarcely running down into the *footſtalk.* *Stalk* hollow, ſtriated, purpliſh, rarely two feet high, erect when in flower, then decumbent till the *ſeed* is ripe, when it riſes again, and the whole *calyx* becomes reflexed. The inner ſcales of the *calyx* reſemble *Leontodon Taraxacum,* but the outer are much ſhorter, roundiſh or oval, pointed, keeled, dark green, unequal, with a membranous, pellucid, coloured margin, and cloſely preſſed to the inner ones. *Seed-down* ſimple, ſtalked. *Roth.* The genus of this plant appears to us, at beſt, very doubtful.

35. S. *elongata.* Long-ſtalked Greek Viper's-graſs. Willd. n. 32. Sm. Fl. Græc. Sibth. t. 789, unpubliſhed. (S. græca, ſaxatilis et maritima, foliis variè laciniatis; Tourn. Cor. 36. Voy. v. 1. 86, with a plate. Catananche græca; Linn. Sp. Pl. 1142.)—Stem branched, leafy. Leaves interruptedly pinnatifid, cut; downy beneath. Scales of the calyx imbricated, elliptical, obtuſe, very ſmooth. Seeds hairy.—Native of the rocky ſhores of the Greek iſlands. Gathered by Tournefort in Naxia; by Sibthorp in Milo, Amorgo, &c. The *root* is perennial, ſpindle-ſhaped. *Stem* erect, ſlightly branched from the lower part, leafy, round, ſtriated, downy. *Radical leaves* numerous, more or leſs deeply cut, ſomewhat lyrate, each ſegment or tooth tipped with a briſtle; both ſides a little downy; the under one moſt ſo, and paleſt. *Stem-leaves* ſcattered, ſmaller and leſs divided. *Flowers* ſolitary at the top of each branch, large, of a fine golden yellow, with brown *anthers;* *florets* broad, elliptical, near an inch long, ſtrongly toothed at the extremity. *Calyx* oval, with cloſe, elegant, rounded ſcales, white and membranous chiefly at their upper part. *Seed* covered with ſoft hairs; *down* feathery.—Tournefort ſuggeſted that this fine plant might perhaps be a *Catananche,* and Vaillant referred it to that genus, in which he was followed by Linnæus. But Willdenow has very juſtly brought it back to its moſt natural place, neither the *receptacle* nor *ſeeds* having the characters of *Catananche,* though we muſt confeſs its habit and *calyx* do not exactly anſwer to the uſual appearance of a *Scorzonera.*

36. S. *pinnatifida.* Carolina Viper's-graſs. Michaux Boreali-Amer. v. 2. 89. Purſh n. 1. (Leontodon carolinianum; Walt. Carol. 192.)—"Stem erect, three-flowered. Flower-ſtalks elongated. Leaves lanceolate, very acute, ſharply pinnatifid, or diſtantly toothed."—Native of Carolina, in waſte ground. *Michaux.*

The reader will perceive that ſome Linnæan ſpecies of *Scorzonera* are here omitted. Theſe are the following. *S. tingitana,* Sp. Pl. 1114, moſt obviouſly and certainly, in habit and characters, a *Sonchus,* to which genus it is removed by Willdenow. *S. orientalis,* Sp. Pl. 1113, which is proved by the Linnæan herbarium to be merely a ſtarved ſpecimen of the ſame ſpecies. *S. picroides,* Sp. Pl. 1114, juſtly referred likewiſe, by Willdenow and Lamarck, to *Sonchus.*

So the *Scorzonera crepioides* of Pourret in Lamarck's Dict. v. 7. 25, appears, by that author's deſcription of the *ſeed-down,* to be a *Sonchus;* nor does any thing occur, in his account of the *calyx,* to invalidate this. Indeed ſome of the ſpecies which we have retained, in the genus under conſideration, are deſcribed as wanting the proper feathery crown of the *ſeed,* which makes an important part of its character, and perhaps when ſuch ſpecies are better known, they may require to be placed elſewhere.

Dr. Fiſcher, of Moſcow, ſeems, by ſome of his communications with us, to have ſeparated certain ſpecies from *Scorzonera,* as a diſtinct genus, by the name of *Laſioſpermum;* and we preſume, from this appellation, that the woolly ſeeds make a part, at leaſt, of the generic character; but we have no further information on the ſubject; ſee n. 21.

Scorzonera, in *Gardening,* contains a plant of the tap-rooted eſculent kind; of which the ſpecies cultivated is the garden viper's-graſs, or Spaniſh ſcorzonera (S. hiſpanica.)

This plant is cultivated in the garden for the root, which is boiled and eaten as carrots, or it may be fried in batter, which is probably the better way of uſing it. The roots are ready for uſe in the autumn and winter ſeaſons.

Method of Culture.—Theſe crops ſhould be raiſed from ſeed ſown either in the autumn or ſpring ſeaſon, about April, in an open ſpot of ground, where the ſoil is light and fine, the earth being previouſly dug over to a good depth. The beſt mode of ſowing them is in ſhallow drills, about a foot apart, in a thin manner, covering them in to the depth of half an inch: the plants, when of ſome growth, ſhould be thinned out, when they are too thick, to the diſtance of ſix or eight inches, keeping them clean from weeds by hoeing.

Some alſo raiſe them by ſowing the ſeed broad-caſt over the ſurface, and afterwards thinning the plants, or tranſplanting them into other beds; but the firſt is the moſt ſucceſsful method, and tranſplanting ſhould never be practiſed with tap-rooted plants.

The roots may be taken up in the autumn, and preſerved in the ſame manner as thoſe of carrots; but they are ſometimes left in the ground to be pulled occaſionally as they are made uſe of.

In order to ſave ſeed, ſome of the beſt plants ſhould be left where ſown, to run to ſeed, which, when perfectly ripened, ſhould be collected and preſerved in a dry ſituation till wanted.

SCOSSOSO, in *Geography*, a mountain of Naples, in Abruzzo Citra; 15 miles N.E. of Civita Borella.

SCOT, Scotta, or *Scottus*, a cuſtomary contribution laid upon all ſubjects, according to their ability.

Whoever are aſſeſſed to any contribution, though not by equal portions, are ſaid to pay *ſcot* and *lot*.

Aſſeſſments by commiſſioners of ſewers are called *ſcots*.

Scot, *Church* and *Soul*. See Church and Soul-*ſcot*.

SCOTAL, or Scotale, is uſed where any officer of a foreſt keeps an ale-houſe within the foreſt by colour of his office cauſing people to come to his houſe, and there ſpend their money, for fear of his diſpleaſure. We find it mentioned in the Charter of the Foreſt, cap. 8. "Nullus foreſtarius faciat ſcotallas vel garbas colligat, vel aliquam collectam faciat, &c." Manwood, 216.

The word is compounded of *ſcot* and *ale*, and by tranſpoſition of the words, is otherwiſe called *aleſhot*.

SCOTANO, in *Geography*, a mountain of Naples, in Otranto; 15 miles N.E. of Tarento.

SCOTCH Fir, in *Gardening*, the common name of this ſort of pine. See Pinus.

Scotch *Fir*, in *Planting*, a term ſometimes applied to the common fir-tree. See Pine.

Although the ſuperiority of planted firs over the whole of Scotland is well known, it is ſtated in the "Tranſactions of the Highland Society," that the opinion of the beſt judges, and thoſe moſt informed on the ſubject, is, that the planted fir does not differ from the pine of the Highlands in any thing except management and habit. By ſowing the ſeeds in rich ſoil, tranſplanting the young plants into manured beds, and then, for good and all, ſetting them out in deep fertile ground, the growth is haſtened too much, the plants come too ſoon to their ſize, and the decay of them is proportionally rapid. Nature, it is ſaid, takes the length of two hundred and fourteen years to bring up a Scotch fir-tree to meaſure thirty inches in diameter; while the ſame ſort of plant, when forced forward in an unnatural manner, will attain that ſize in fifty years, though it may not have riſen to the ſame height; as Nature ſows thick, and the trees become tall in conſequence, laſhing off the lateral branches, until ſome gain a final victory, and tower above ſixty feet high; whereas in the common way of planting they grow much into lateral branches, and never reach the height of the natural tree. It is ſuggeſted by Mr. Farquharſon, in a paper in the "Georgical Eſſays," that a hard gravelly ſoil, and northerly expoſure, ſuit theſe trees the beſt; that the ſeeds of them ſhould be ſown very thick, in light earth trenched, without any manure; and that at eighteen months and two years old the plants ſhould be ſet out where they are to ſtand, at the diſtance of about three feet from each other. It is thought, however, that it would undoubtedly be an improvement on this plan to have the ground incloſed, and then to prepare it, if wanted, and ſcatter the ſeeds or the cones over it, ſo as to avoid the neceſſity of every ſort of tranſplanting, as is done by Nature in the Highlands. There may be ſome ſpots, it is ſuppoſed, in theſe parts, which may only require incloſing to riſe into a foreſt, the ſeeds being already in the ground; and in others, when ſcattered on the unprepared ſurface, various methods might be contrived for covering them, provided that were found neceſſary, which in ſome ſoils might be the caſe, and in others not. At all times the ſeeds or cones of the real Highland red fir ſhould alſo, it is thought, be preferred; as even the ſeeds of the planted fir may poſſeſs the degeneracy of their *luxury-debilitated* parent trees. It is, in ſhort, conſidered of immenſe importance to this country, but eſpecially to the highland parts of it, to ſtrain every nerve to preſerve this ſtately and valuable native of the northern mountains. And this importance and neceſſity become ſtill more imperious, as the want and ſcarcity of other ſorts of timber become more general.

Scotch *Fir Point*, in *Geography*, a cape on the W. coaſt of North America, in the gulf of Georgia, ſo called by captain Vancouver, from the Scotch firs found there, being the firſt trees ſeen on that coaſt. It lies on the N. at the entrance into Jervis's canal. N. lat. 49° 42′. E. long. 236° 17′.

Scotch *Plains*, a town, or rather village, of America, in New Jerſey, in the county of Eſſex, on a N.E. branch of Rariton river, between Weſtfield and Turkey; 11 miles N. of Brunſwick.

SCOTCHES, in *Agriculture*, a term ſignifying ſcores or notches. It is ſometimes employed as a mode of reckoning by farmers.

SCOTER, in *Ornithology*, the name of a ſpecies of duck, *anas nigra*, called alſo in ſome places the *black diver*.

It is nearly of the ſize of the common duck, but of a rounder body, and is all over of a deep ſhining and beautiful black. It is very common on the ſhores of Lancaſhire, and ſome other counties. It lives only about ſalt waters, and is a very great diver. This bird is the *macreuſe* of the French, and allowed, in the Romiſh church, to be eaten in Lent. See Duck.

SCOTHOLM, in *Geography*, one of the ſmall Shetland iſlands. N. lat. 60° 36′. W. long. 1° 8′.

SCOTIA, in *Architecture*, a ſemicircular cavity or channel between the tores, in the baſis of columns.

The ſcotia is a concave dark moulding; whence its name, *viz.* from σκοτος, *obſcurity*, *darkneſs*.

The ſcotia has an effect juſt oppoſite to that of the quarter-round. Our workmen frequently call it the *caſement*.

It is alſo called *trochilus*, partly from its form.

In the Ionic and Corinthian baſe there are two ſcotias, the upper of which is the ſmaller.

According to Felibien, the cavetto is a fourth part of the ſcotia.

Scotia, *Nova*, in *Geography*, a large peninſula on the E. coaſt of North America, ſeparated from Cape Breton by a narrow ſtrait. In the year 1616 it was poſſeſſed by the French, who attempted to colonize it from their new ſettlement in Canada, and by them it was called Acadia. The Engliſh, who deemed it a part of North Virginia, expelled the French; and it was granted by James I. to ſir William Alexander in 1621, on condition that he would form a ſettlement there. It then received the title of Nova Scotia. In order to encourage ſir William, he planned the order of baronets, which is called after the country. To every knight who would engage to colonize any part, a grant was to be made of certain portions of land. The order was not inſtituted till 1625, when ſeveral baronets were created, and they held their lands from the crown of Scotland as a free barony, with great privileges to all who would ſettle in the country. (See Baronets *of Nova Scotia*.) The deſign failed, and the French gained repoſſeſſion of the province. In 1713 it was ſurrendered to England by the treaty of Utrecht; and in 1784 it was divided into two provinces, *viz. New* Brunswick (which ſee), and Nova Scotia. The latter province is about 300 miles long, and about 80 in medial breadth, being inferior in extent to the former. It has ſeveral conſiderable rivers, among which that of Annapolis is navigable fifteen miles for ſhips of 100 tons. The bay of Fundi, which lies between New Brunſwick and Nova Scotia, extends 50 leagues inland, the ebb and flow of the tides being from 45 to 60 feet. The capital of Nova Scotia is *Halifax* (which ſee); and to the eaſt of Halifax reſides a tribe of Indians, having about 300 warriors, called Micmacs. Shelburn, ſituated towards the S.W., once contained 600 families, and Guiſbury about 250. The harbour of Annapolis is excellent; but it is an inconſiderable hamlet. During a great part of the year the air is foggy and unhealthy; and for four or five months intenſely cold. This province contains many foreſts; and the ſoil near the rivers is fertile in graſs, hemp, and flax, but generally barren; ſo that it derives its ſupplies of grain from England. Britain alſo ſends to theſe provinces linen and woollen cloths, and other articles, to the amount of about 30,000*l.*, and receives timber and fiſh worth about 50,000*l.* The chief fiſhery is that of cod, on the Cape Sable coaſt. Near Cape Canco are remarkable cliffs of white gypſum; and about 23 leagues from that cape is the *Iſle de* SABLE; which ſee.

SCOTINUS, in *Botany*, the name of a ſhrub called by the Latins *cotinus*, and *cotinus coriaria*, to diſtinguiſh it from the *cotinus*, κωτινος, of the Greeks, which was the *oleaſter*, or wild olive.

The Italians call the *cotinus coriaria*, ſometimes *ſcotinus*, and ſometimes *ſcotanus*; the latter word ſeems an erroneous way of writing the former, which is only the Roman name of the ſame tree, with an *ſ* put before the firſt letter; and this is very common with the Italians, in their adopting Latin words.

SCOTISTS, a ſect of ſchool divines and philoſophers; thus called from their founder, J. Duns Scotus, a Scottiſh, or, as others ſay, an Iriſh Cordelier; who, in the fourteenth century, maintained the *immaculate conception* of the Virgin, or that ſhe was born without original ſin; in oppoſition to Thomas Aquinas, and the Thomiſts. As to philoſophy, the Scotiſts were, like the Thomiſts, Peripatetics; only diſtinguiſhed by this, that in each being, as many different qualities as it had, ſo many different formalities did they diſtinguiſh; all diſtinct from the body itſelf, and making, as it were, ſo many different entities; only theſe were metaphyſical, and, as it were, ſuperadded to the being.

The Scotiſts and Thomiſts likewiſe diſagreed about the nature of the divine co-operation with the human will, the meaſure of divine grace that is neceſſary to ſalvation, and other abſtruſe and minute queſtions, which it is needleſs to enumerate.

SCOTIUM, in *Ancient Geography*, a mountain of Aſia Minor.

END OF VOL. XXXI.

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